

# आयुर्ज्ञान संसुमीलन

21 सितंबर 2023

उत्तराखणुड राजभवन देहरादून

संग्रह पुस्तिका Souvenir



उत्तराखणुड शासन

आयुजक

उत्तराखणुड आयुर्वेद विश्वविद्यालय, हर्रावाला, देहरादून  
आयुर्वेद एवं यूनानी निदेशालय उत्तराखणुड

आयुष एवं आयुष शिक्षा विभाग, उत्तराखणुड शासन





# UTTARANCHAL AYURVEDIC COLLEGE

Affiliated to Uttarakhand Ayurved University, Recognized by Ministry of AYUSH, NCISM,  
Accredited by Yoga Certification Board, New Delhi and Uttarakhand Government



✓ MD Ayurved PG Course	- Eligibility : BAMS & AIAPGET Qualified
✓ B.A.M.S. Degree Course	- Eligibility : 12 <sup>th</sup> passed with 50% in PCB & NEET Qualified
✓ B.N.Y.S. Degree Course	- Eligibility : 12 <sup>th</sup> passed with 50% in PCB
✓ M.A. Yoga Degree Course	- Eligibility : Graduation in any stream
✓ P.G. Diploma in Yogic Science	- Eligibility : Graduation in any stream
✓ B.A. Yoga Degree Course	- Eligibility : 12 <sup>th</sup> passed

## YCB Courses

- Level : 1** - Eligibility : 10th passed  
**Level : 2** - Eligibility : 12th passed  
**Level : 3** - Eligibility : Graduation in any stream

**Add. : 17 Old Mussoorie Road, Rajpur, Dehradun, Uttarakhand**

**Contact : 8476004778, 8476004765**

Email : [uac.dehradun@gmail.com](mailto:uac.dehradun@gmail.com), Website: [www.uacayurveda.org](http://www.uacayurveda.org)



## INDIAN INSTITUTE OF PHARMACY

Affiliated to Pharmacy Council of India,  
New Delhi and Board of Technical Education, Lucknow, UP

### Diploma in Pharmacy

Duration - 2 Year Course  
Eligibility - 12<sup>th</sup> passed with PCB



## INDIAN INSTITUTE OF NURSING

Affiliated to Indian Nursing Council,  
New Delhi and State Medical Faculty, Lucknow, UP

### G.N.M.

Duration - 3 Year Course  
Eligibility - 12<sup>th</sup> passed

### A.N.M.

Duration - 2 Year Course  
Eligibility - 12<sup>th</sup> passed

**Add. : Sherpur Khanajaadpur, Chhutmalpur, Saharanpur, U.P.**

**Contact: 8476004763, 8476004764**

## ले ज गुरमीत सिंह

पीवीएसएम, यूवाईएसएम, एवीएसएम,  
वीएसएम (से नि)

राज्यपाल उत्तराखण्ड



सत्यमेव जयते

राजभवन उत्तराखण्ड  
देहरादून 248003

दूरभाष : 0135-2757400  
2757403

14.09.2023



## संदेश

मुझे यह जानकर प्रसन्नता हो रही है कि आयुष एवं आयुष शिक्षा विभाग एवं उत्तराखण्ड आयुर्वेद विश्वविद्यालय द्वारा एक दिवसीय आयुर्ज्ञान सम्मेलन का आयोजन दिनांक 21 सितम्बर, 2023 को उत्तराखण्ड राजभवन देहरादून में किया जा रहा है। इस अवसर पर विशेषज्ञों के शोध आधारित ज्ञान पर एक स्मारिका का भी प्रकाशन किया जा रहा है।

इस सम्मेलन में देश के आयुर्वेद विशेषज्ञों द्वारा आयुर्वेद एवं योगिक वैलनेस सिद्धांत, विभिन्न चिकित्सा पद्धतियों में तालमेल, आयुर्वेदिक चिकित्सा का आधुनिकीकरण, जीवनशैली संबंधी विकार एवं उनकी रोकथाम, उत्तराखण्ड में वैलनेस की अवधारणा के क्षेत्र में संभावनाएं एवं चुनौतियां आदि विषयों पर व्याख्यान दिया जायेगा। साथ ही मानवता की सेवा एवं आधुनिक चिकित्सा पद्धति के साथ आयुर्वेद के प्रयोग से बेहतर विकल्प खोजने संबंधी विषयों पर भी चर्चा की जायेगी जो की सराहनीय प्रयास है।

मुझे विश्वास है कि आयुर्ज्ञान सम्मेलन एवं स्मारिका में विशेषज्ञों के शोध पत्र/आलेख पाठकों एवं युवाओं तथा जनमानस को आयुर्वेद से होने वाले फायदों के प्रति जागरूक करने में सहायक सिद्ध होंगे।

आयुर्ज्ञान सम्मेलन के सफल आयोजन एवं स्मारिका के प्रकाशन हेतु मेरी हार्दिक बधाई एवं शुभकामनाएँ।

गुरमीत

ले ज गुरमीत सिंह

पीवीएसएम, यूवाईएसएम, एवीएसएम, वीएसएम (से नि)

पुष्कर सिंह धामी



मुख्यमंत्री, उत्तराखण्ड

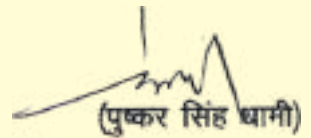
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## सन्देश

मुझे यह जानकर अत्यन्त हर्ष हो रहा है कि आयुष एवं आयुष शिक्षा विभाग एवं उत्तराखण्ड आयुर्वेद विश्वविद्याय, देहरादून द्वारा दिनांक 21 सितम्बर, 2023 को एक दिवसीय "आयुर्ज्ञान" सम्मेलन का आयोजन करने के साथ-साथ विश्वविद्यालय द्वारा एक स्मारिका का भी प्रकाशन किया जा रहा है।

इस प्रकार के आयोजन करने से आयुर्वेद के विद्वानों एवं विशेषज्ञों के अनुभव एवं ज्ञान से आयुर्वेदिक चिकित्सा के क्षेत्र में कार्य करने वाले चिकित्सक एवं शोधार्थी लाभान्वित होंगे तथा संगोष्ठी से उत्तराखण्ड में आयुर्वेद एवं योगिक वैलनेस के क्षेत्र में किये जा रहे कार्यों को एक नई दिशा मिलेगी। मुझे यह भी आशा है कि इस स्मारिका में समय-समय पर आयोजित किये जाने वाले सम्मेलनों में उपस्थित विशेषज्ञों के लेखों तथा अन्य आयुष से सम्बन्धित विषयों की जानकारी उपलब्ध होगी, जो निःसंदेह पाठकों के लिए अत्यन्त उपयोगी सिद्ध होगी।

मेरी ओर से आयुर्विज्ञान सम्मेलन के सफल आयोजन एवं स्मारिका के सफल प्रकाशन के लिए हार्दिक बधाई एवं शुभकामनाएं।

  
(पुष्कर सिंह धामी)

**डा0 सुखबीर सिंह सन्धु**  
**Dr. Sukhbir Singh Sandhu**



मुख्य सचिव  
Chief Secretary


उत्तराखण्ड शासन  
Government of Uttarakhand  
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**दिनांक: 12 सितम्बर, 2023**

## शुभकामना सन्देश

मुझे यह जानकर अत्यन्त प्रसन्नता हो रही है कि आयुष एवं आयुष शिक्षा विभाग एवं उत्तराखण्ड आयुर्वेद विश्वविद्यालय संयुक्त रूप से राजभवन, उत्तराखण्ड में आगामी 21 सितम्बर, 2023 को एक दिवसीय "आर्युज्ञान" सम्मेलन का आयोजन कर रहे हैं। इसमें देशभर के प्रख्यात विशेषज्ञों द्वारा व्याख्यान दिये जायेंगे। सम्मेलन के दौरान आयुर्वेद के ज्ञान को जन-जन तक पहुँचाने तथा उसे आत्मसात् करने से जुड़े अवसर और चुनौतियों पर विस्तृत चर्चा होगी। इस दौरान एक "स्मारिका" का भी प्रकाशन होना है।

मैं आयोजकों को ऐसे कार्यक्रम के लिये बधाई एवं इसके सफल आयोजन के लिए शुभकामनाएं प्रेषित करता हूँ।

  
(एस.एस.सन्धु)  
मुख्य सचिव



वैद्य राजेश कोटेचा

सचिव

**Vaidya Rajesh Kotecha**

Secretary



सत्यमेव जयते



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आयुष मंत्रालय  
आयुष भवन, 'बी' ब्लॉक, जी.पी.ओ. कॉम्प्लेक्स  
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**शुभकामना सन्देश**

मुझे यह जानकर अपार हर्ष हो रहा है कि आयुष एवं आयुष शिक्षा विभाग तथा उत्तराखण्ड आयुर्वेद विश्वविद्यालय देहरादून द्वारा दिनांक 21 सितम्बर, 2023 को एक दिवसीय आयुर्ज्ञान सम्मेलन का आयोजन उत्तराखण्ड राजभवन में किया जा रहा है। इस सम्मेलन में आये आयुर्वेद के विद्वानों एवं विशेषज्ञों के अनुभव तथा ज्ञान से आयुर्वेदिक चिकित्सा के क्षेत्र में कार्य करने वाले चिकित्सक एवं शोधार्थी लाभान्वित होंगे। इस संगोष्ठी से उत्तराखण्ड में आयुर्वेद एवं योगिक वैलनेस के क्षेत्र में किये जा रहे कार्यों को एक नई दिशा मिलेगी। इस उपलक्ष्य में एक स्मारिका का भी प्रकाशन किया जा रहा है।

आयुर्ज्ञान सम्मेलन के सफल आयोजन एवं स्मारिका के सफल प्रकाशन के लिए संपादक मंडल और समारोह के आयोजकों को मैं अपनी शुभकामनाएं प्रेषित करता हूँ।

नई दिल्ली

14-09-2023

(राजेश कोटेचा)

डॉ. पंकज कुमार पाण्डेय, आई.ए.एस.  
सचिव  
Dr. Pankaj Kumar Pandey, IAS  
Secretary



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पत्रांक : USJ/स.सि.स.स/2023  
दिनांक : 12.09.2023

## शुभकामना सन्देश

मुझे यह जानकर अत्यन्त प्रसन्नता हो रही है कि आयुर्वेद एवं यूनानी सेवायें विभाग एवं उत्तराखण्ड आयुर्वेद विश्वविद्यालय देहरादून के संयुक्त तत्वाधान में दिनांक 21 सितम्बर 2023 को राजभवन उत्तराखण्ड में एक दिवसीय आयुर्ज्ञान सम्मेलन का आयोजन किया जा रहा है, जिसमें आयुर्वेद एवं यौगिक वेलनेस सिद्धान्त, विभिन्न चिकित्सा पद्धतियों में तालमेल, आयुर्वेद चिकित्सा का आधुनिकीकरण, जीवन शैली सम्बन्धी विकार एवं उनकी रोकथाम जैसे विषयों पर विस्तृत चर्चा होगी। सम्मेलन में आयुर्वेद के क्षेत्र में सम्भावनाएं एवं चुनौतियां पर भी विषय विशेषज्ञ अपना-अपना अनुभव साझा करेंगे। इस अवसर पर एक स्मारिका का भी प्रकाशन किया जा रहा है, जिसमें विभिन्न शोधपत्रों तथा आलेखों को शामिल किया जायेगा। सम्मेलन के सफल आयोजन तथा 'स्मारिका' के प्रकाशन हेतु मेरी हार्दिक शुभकामनाएं।

भवदीय

(डॉ० पंकज कुमार पाण्डेय)

डॉ० अरुण कुमार त्रिपाठी,  
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**Prof. (Dr.) Arun Kumar Tripathi**  
Vice Chancellor (Acting)



**Uttarakhand Ayurved University**  
An autonomous body of Uttarakhand Government  
Recognized u/s 2(F) of UGC Act, 1956  
Member of Association of Indian Universities (AIU)

Harrawala, Dehradun  
Web:- [www.uau.ac.in](http://www.uau.ac.in)



## शुभकामना सन्देश

मुझे यह कहते हुए बड़ी प्रसन्नता हो रही है कि उत्तराखण्ड आयुर्वेद विश्वविद्यालय, देहरादून व आयुर्वेदिक एवं यूनानी सेवाएं, उत्तराखण्ड आगामी 21 सितम्बर, 2023 को राजभवन उत्तराखण्ड में एक दिवसीय "आयुर्ज्ञान" सम्मेलन का आयोजन करने जा रहे हैं। इस सम्मेलन में देशभर के आयुर्वेद के विद्वानों द्वारा व्याख्यान प्रस्तुत किये जायेंगे जो मुख्यतः आयुर्वेद एवं योगिक वैलनेस के सिद्धान्त, विभिन्न चिकित्सा पद्धतियों के आपस में तालमेल, आयुर्वेदिक चिकित्सा का आधुनिकीकरण, जीवन शैली सम्बन्धी विकार एवं उनकी रोकथाम, उत्तराखण्ड राज्य में वैलनेस की अवधारणा के क्षेत्र में सम्भावनाएं तथा चुनौतियों पर आधारित होंगे। यह सम्मेलन आयुर्वेद के विषय विशेषज्ञों, इससे जुड़े हित धारकों तथा विद्यार्थियों को उक्त विषयों पर विस्तृत चर्चा के लिये उचित मंच प्रदान करेगा। विश्वविद्यालय इस अवसर पर शोध पत्रों एवं आलेखों की एक स्मारिका का भी सम्पादन करने जा रहा है।

मैं इस सम्मेलन की आयोजक समिति के सभी सदस्यों का आभार प्रकट करता हूँ एवं सफल आयोजन तथा स्मारिका के प्रकाशन हेतु अपनी शुभकामनाएं प्रेषित करता हूँ।

(प्रो० अरुण कुमार त्रिपाठी)





## आयुर्ज्ञान सम्मेलन

शुभकामना सन्देश

### ऊँ न हि ज्ञानेन सदृशं पवित्रमिह विद्यते

इस सम्पूर्ण संसार में ज्ञान के समान पवित्र और कुछ भी नहीं है।

उत्तराखण्ड आयुर्वेद विश्वविद्यालय को "आयुर्ज्ञान सम्मेलन" के आयोजन हेतु हार्दिक शुभकामनाएँ


आयुर्वेदिक एवं यूनानी सेवाएँ विभाग के लिए इस सम्मेलन का अवयव होना एक गौरवपूर्ण उपलब्धि है। निश्चित ही यह सम्मेलन एक ऐसा मंच उपलब्ध कराएगा जहाँ समान विचारधारा वाले बुद्धिजीवी, विचारक, नीति निर्माता व आयुर्वेद चिकित्सक एकत्रित होकर ज्ञान का आदान-प्रदान करते हुए अपने अनुभवों को साझा करेंगे और आयुर्वेद के माध्यम से समग्र स्वास्थ्य को बढ़ावा देंगे। आयुर्वेद के मनीषियों व विशेषज्ञों का यह अतुलनीय ज्ञान उत्तराखण्ड राज्य में आयुर्वेद के विकास हेतु नवीन आयाम उपलब्ध कराएगा।

राज्य सरकार का आयुष विभाग भी आयुर्वेद, योग, प्राकृतिक चिकित्सा के सिद्धांतों को पोषित और प्रचारित करने के लिए प्रतिबद्ध है व भविष्य में इसी तरह ही गतिविधियों को आयोजित करते हुए आयुर्वेद क्षेत्र में उत्कृष्टता के लिए कार्य करता रहेगा।

मैं सभी प्रतिभागियों को सम्मेलन की गतिविधियों में सक्रिय रूप से भाग लेने, अपनी अंतर्दृष्टि साझा करने और अन्य बुद्धिजीवियों के विचारों को आत्मसात किए जाने का अनुरोध करता हूँ। निश्चित ही इस सम्मेलन के पश्चात हम सभी आयुर्वेद संबंधी हमारे ज्ञान को और अधिक समृद्ध करेंगे तथा आयुर्वेद के विश्वव्यापी विकास और स्वीकृति में योगदान देंगे।

मैं आशा करता हूँ कि आयुर्वेद के संवर्धन और उन्नयन के लिए आयोजित यह सम्मेलन मील का पत्थर साबित होगा व उत्तराखण्ड राज्य को विश्व पटल पर श्रेष्ठ आयुष गंतव्य के रूप में विकसित किए जाने हेतु एक महत्वपूर्ण माध्यम बनेगा।

आयुर्ज्ञान सम्मेलन के सभी प्रतिभागियों हेतु एक उत्पादक और ज्ञानवर्धक अनुभव की कामना तथा सभी आयोजकों को पुनः शुभकामनाएँ।

 सादर,

डॉ. विजय कुमार जोगदण्डे, आई.ए.एस.

निदेशक,

आयुर्वेदिक एवं यूनानी सेवाएँ, उत्तराखण्ड

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## Ayurveda for Wellness

**Prof. Mahesh Vyas**

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Wellness is the act of practicing healthy habits on a daily basis to attain better physical and mental health outcomes. Wellness is the state of being healthy especially when it is something that you actively try to achieve. Ayurveda is age old science directed towards the maintenance of holistic health. According to Ayurveda, the concept of wellness is deeply rooted in the ancient wisdom of holistic health and balance. Ayurveda, which translates to "the science of life," views wellness as a state of equilibrium among various elements within the body, mind, and spirit. This holistic approach to wellness encompasses not only the absence of disease but also the presence of vitality, mental clarity, and emotional harmony. As per the Ayurveda, *Swasthya* or health is the equilibrium of the entities like *Dosha*, *Agni*, *Dhatu* function, *Mala* function, stability of *Atma* and *Mana*. The Person who consumes a balanced diet (*Hita-Aahara*), a balanced lifestyle (*Hita-Vihara*), who does not indulge in desires, who is mentally balanced, respects the elderly, is intelligent and vigilant towards life is considered to *Arogi* or devoid of diseases. Thus, the concept of wellness is directed towards the attainment of complete and holistic health. Ayurveda is a science that mentions about *Ayu* or life i.e., *Hita-Ayu* (beneficial life), *Ahita-Ayu* (unbalanced life), *Sukha-Ayu* (happiness in life), *Dukkha Ayu* (sadness in life) considering all the aspects of life. An individual can achieve wellness through aspects related to Ayurveda like *Prakriti* (constitution), *Aahara* (food), *Panchakarma* (*Shodhana*), *Vihaara* (balanced lifestyle), *Dinacharya* (daily regime), *Ritucharya* (seasonal regime) etc. The first step in the establishment of Ayush health and wellness centres across the country. Honourable Prime Minister Shri Narendra Modi inaugurated Ayush Health and Wellness Centres (10 in number) in Haryana under Ayushman Bharat Yojna from Vigyan Bhawan, New Delhi. Many such wellness centres are to be established across the country. The main objectives of the "AYUSHMAN BHARAT" under the AYUSH Health Centre mission are the promotion of self-care, the promotion of the use of medicinal plants, management of common diseases through Ayurveda. The Union Cabinet ministry on 20.03.2020 approved the proposal of the Ministry of AYUSH to operationalize 12,500 Health and Wellness Centre under Ayushman Bharat in a phased manner from year 2019-20 to 2023-24. These AYUSH Health and Wellness centres would be operationalized through States or Union territories in Centrally Sponsored Scheme mode and under the broad umbrella of the National AYUSH Mission (NAM). Various interventions are taken up at AYUSH wellness centres like *Prakriti* assessment, training in *Dinacharya* like sleep (*Nidra*), massage (*Abhyang*), Oral and Nasal care (*Gandusha* and *Nasya*), Promotion of Ayush Aahar (AYUSH dietetics), Yoga counselling, use of medicinal plants.

Different services are provided at AYUSH wellness centres like care during pregnancy like *Garbhini Charya* (following the balanced regime during pregnancy), treatment of *Garbhi Pandu* (treatment of anemia in pregnancy), Yoga counselling, neonatal and infant care (*Snehana- Abhyanga*), school visits (*Yoga, Ayush Aahara*), treatment of non-communicable diseases involving the diet advise, Yoga, Panchakarma. Similarly other initiatives like the establishment of different Ayurveda healthcare setup for medical tourism and wellness tourism. Promotion of health and wellness is conducted in places like Kerala, and Uttarakhand. Similarly, AIIA is setup at Goa for promotion of Ayurveda tourism. Similarly, the propagation of AYUSH recipes and traditional Ayurveda recipes to the common public (like *Yusha, Yavagu, Soopa*), distribution of *Ayush Aahara* in schools, universities etc. and celebration of International Millets Year (2023) and use of millet recipes.

Suvarnaprashana is administered in children of preschool and school-going age (upto 6 years) to improve their intellect (*Medha*), cognition (*Buddhi*), quality of life (*Aayushya, Punya, Mangalya*), promoting digestion (*Agni*), beneficial for skin tone (*Varnya*), immunity building (*Vyadhiharana*). The Ministry of AYUSH has taken up initiatives like the *Balraksha* kit for the immunity of children and the *Ayur-Raksha* kit for protection from disorders like COVID-19. *Suvarnaprashana* is thus a considerable initiative for promoting child health.

## Fundamental Principles of Ayurveda for maintenance of holistic health

### a) Tridosha

विसर्गोदानविक्षेपैः सोमसूर्यानिला यथा ।  
धारयन्ति जगद्देहं कफपित्तानिलास्तथा ॥ सु.सू.15

The *Vata*, *Pitta* and *Kapha Dosha* maintain the body just like *Soma*, *Surya* and *Anila* maintain the *Visarga* and *Aadana Kaala*. The Tridosha are the masters of all the functions of the body.

### b) Prakriti

समपित्तानिलकफाः केचिद्द्रुभादि मानवाः।  
दृश्यन्ते वातलाः केचित्पित्तलाः श्लेष्मलास्तथा॥  
तेषामनातुराः पूर्वे वातलाद्याः सदातुराः।  
दोषानुशयिता ह्येषां देहप्रकृतिरुच्यते॥ च.सू.7

तत्र प्रकृतिर्नाम जन्ममरणांतरालभाविनी स्वकारणोद्भिकिता निर्विकारिणी दोषस्थितीः । रसवैशेषिक  
The *Prakriti* is determinant of health where *Sama Prakriti* is considered to be most healthy while *Vatadi Ekala Prakriti* is considered to be most diseased. The *Dosha* balance at birth is responsible for the maintenance of health.

### c) Aahara

प्राणाः प्राणभूतामन्नमन्नं लोकोऽभिधावति।  
वर्णः प्रसादः सौस्वर्यं जीवितं प्रतिभा सुखम्॥  
तुष्टिः पुष्टिर्बलं मेधा सर्वमन्ने प्रतिष्ठितम्। च.सू.27

Proper *Aahara* as mentioned in the texts of Ayurveda depending upon the *Desha* (region), *Kaala* (season) and *Matra* (quantity) promotes overall health and wellness.

### d) Vyayama

व्यायामात् लभते स्वास्थ्यं दीर्घायुष्यं बलं सुखं।  
आरोग्यं परमं भाग्यं स्वास्थ्यं सर्वार्थसाधनम् ॥ सुभाषितानि

The *Vyayama* or proper exercise is necessary to maintain the overall immunity, health, strength and wellness of the body.

व्यायामं कुर्वतो नित्यं विरुद्धमपि भोजनम् ।  
विदग्धमविदग्धं वा निर्दोषं परिपच्यते ॥ सुभाषितानि

*Vyayam* aids in the proper digestion of food and even of *Viruddha Aahara* contributing to overall health.

### e) Dinacharya

नगरी नगरस्येव रथस्येव रथी यथा।  
स्वशरीरस्य मेधावी कृत्येष्ववहितो भवेत्॥ च.सू.5

Following proper *Dinacharya* and balanced day-to-day activities is necessary for the maintenance of health and wellness. The *Dinacharya* can involve procedures like *Abhyana* (oil massage), *Gandusha* (oil pulling), *Udvardana*

**f) Ritucharya**

ऋतावृतौ नृभिः सेव्यमसेव्यं यच्च किञ्चन। च.सू.6

A proper seasonal regime i.e., *Ritucharya* is also necessary to maintain proper health. The *Bala* of a body depends on the conditions of the *Ritu*.

Medicine like *Ritu Haritaki* can help in combating the *Doshic* prominence during each *Ritu*. For instance, *Shunthi* (dry ginger) is given in *Hemant Ritu*, *Sharkara* (sugar) in *Sharada Ritu*.

**g) Panchakarma (Shodhana)**

माधवप्रथमे मासि नभस्यप्रथमे पुनः।  
सहस्यप्रथमे चैव हारयेदोषसञ्चयम्॥ च.सू.7

*Shodhana* helps in the maintenance of the complete health of the person. It helps in the maintenance and promotion of the health of *Agni*, *Indriya*, *Mana*, *Buddhi* etc.

एवं विशुद्धकोष्ठस्य कायाग्निरभिवर्धते।  
व्याधयश्चोपशाम्यन्ति प्रकृतिश्चानुवर्तते॥  
इन्द्रियाणि मनोबुद्धिर्वर्णश्चास्य प्रसीदति।  
बलं पुष्टिरपत्यं च वृषता चास्य जायते॥  
जरां कृच्छ्रेण लभते चिरं जीवत्यनामयः।  
तस्मात् संशोधनं काले युक्तियुक्तं पिबेन्नरः॥ च.सू.16/17-19

**h) Manas Swasthya (Maintenance of mental health)**

मानसो ज्ञानविज्ञानधैर्यस्मृतिसमाधिभिः॥ च.सू.1/58

Mental health is maintained through the means like *Dnyana*, *Vigyana*, *Dhairya*, *Smriti* and *Samadhi*. These focus on different aspects of cognitive and behavioural therapy and generalised mental health.

Overall, Ayurveda offers a holistic approach to health and wellness, emphasizing the balance of physical, mental, and spiritual aspects of well-being. The integration of Ayurvedic principles into healthcare initiatives like AYUSH Health and Wellness Centres reflects a growing recognition of the value of traditional healing practices in promoting overall health.

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## A Critical Review of Prameha

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Ayurveda describes a set of complex disorders collectively called Prameha, that are characterized by frequent abnormal micturition. The causes of prameha include physical inactivity, laziness, sedentary lifestyle, consumption of dairy products, aquatic and marshy animals, sugar, jaggery, fresh grains, and similar foods that increase kapha. Prameha though a tridoshaja vyadhi, is basically a disease with kapha predominance with involvement of dhatus. Low agni, (digestive and metabolic process) also leads to ama (build-up of toxins from improperly digested food and metabolic products).

Prameha is defined as excessive urination (both in frequency & quantity) and turbidity (Sushruta, Nidan 6/6). The nature of the turbidity may vary depending upon the body's reaction to the doshas (Ashtanghridaya Nidan 10/7). Further, Krodha (anger) and Udvega (anxiety), Shoka (grief) are the precipitating factor respectively for Pittaja and Vataja Prameha (Charaka, Nidan 4/23,33).

The prodromal symptoms (purvarupa) includes, excessive sweating with foetid odour, flabbiness of body, inclination to lie down, sedentary habits, excessive mucosal discharge, obesity and flabbiness, rapid growth of hairs and nails, thirst, sweetness of mouth, burning sensation in hands & feet, swarming of ants on the urine (Charak, Chikitsa 6/13-14).

Dantadeenam maladyatvam Pragrupam panipadayoh |  
Dahashchikkanata dehe trit swadvasyam cha jayate || (M.Ni.)  
Shatpadapipilikabhishcha shareeramutrabhisaranam Nidramtandram cha sarvakalam iti |  
(Ch. Ni. 4/44)

### Classification of Prameha

#### Etiological Classification (Sushruta)

1. Sahaja Prameha (Growth onset/Juvenile/IDDM)- This may have the presence of family history, early onset of disease, asthenic body constitution, prone to develop complications etc.
2. Apathyanimittaja Prameha (NIDDM)- It is developed later on due to defective diet and lifestyle viz over nutrition, sedentary habits, obese body built. These patients are manageable with diet control and herbo-mineral treatment (apatarpana chikitsa).

#### Doshic (clinico-pathological) Classification

Based upon the predominance of doshas, three types of prameha are precipitated.

1. Kaphaja Prameha -10 (Early Diabetes); patients may have overweight with mild hyperglycemia, polyuria/glycosuria.
2. Pittaja Prameha -6 (Acute Diabetes); these patients may have loss of weight, hyperglycemia and glycosuria, and urinary tract infection.
3. Vataja Prameha -4 (Chronic Diabetes); patients may have severe hyperglycemia with glycosuria, cachexia, nephropathy, neuropathy, retinopathy, cardiorespiratory complications, and gangrene.

#### Body Constitution-based Classification (Charaka)

1. Sthula Pramehi (Obese- NIDDM); these patients are obese and manageable with diet control and exercises.

2. Krishna Pramehi (Asthenic- IDDM); these patients have lean and thin body constitution and are difficult to manage with diet control alone rather than requires nutritive treatment (brinhana chikitsa).

### **Prognostic Classification**

On the basis of above, the prognosis of the patients can be categorized as under:

1. Sadhya (manageable): Apathyanimittaja Prameha (NIDDM), Kaphaja Prameha (early diabetes), Sthula Pramehi (obese diabetics)
2. Yasya (Palliative): Pittaja Prameha (acute diabetes)
3. Asadhya (unmanageable): Sahaja Prameha (IDDM), Vataja Prameha/Madhumeha (chronic diabetes), Krishna Pramehi (asthenic or lean and thin diabetics).

### **Prameha – Correlation with Diabetes, Metabolic Syndrome and Obesity**

Understanding of prameha is not merely related to the pathophysiology and clinical picture of Diabetes mellitus. From the etiopathology to the state of complications prameha has much in common to share with obesity and metabolic syndrome based on these facts viz involvement of meda, kleda, kapha, vata and agni; Ama (toxic intermediary products of digestion and metabolism) which is a contributing factor to obesity, metabolic syndrome and diabetes; hyperinsulinemia and insulin resistance. Obesity is a state of increased body weight, due to adipose tissue accumulation, that is of sufficient magnitude to produce adverse health effects. Central or visceral obesity is associated with a much higher risk for several disorders and diseases, including diabetes, hypertension, hypertriglyceridemia, decreased high-density lipoprotein (HDL) cholesterol, proteinuria, osteoarthritis, pancreatitis, gallstones, fatty change in the liver, hypoventilation syndrome, etc.

### **Diabetes as Prameha & Madhumeha**

Prameha and madhumeha both are referred for diabetes mellitus frequently in common practice. However, Sushruta has very clearly defined that madhumeha is the terminal stage of the disease Prameha and is said to be incurable.

Sarva ev Pramehastu Kalena parti karinah Madhumehatvamayanti Tadasadhya bhavantihi (Sush. Nidana 6/29)

Charaka has further mentioned that madhumeha is a condition due to defective ovum and sperm and because of genetic defects, the disease is found in the child from birth or early childhood.

Jatah Pramehi Madhumehinova na Sadhyauktah sahi Beejadoshat.  
Ye chapi kechitkulaja vikara bhavantitamstan Pravadantya sadyan (Ch.Chi.6).

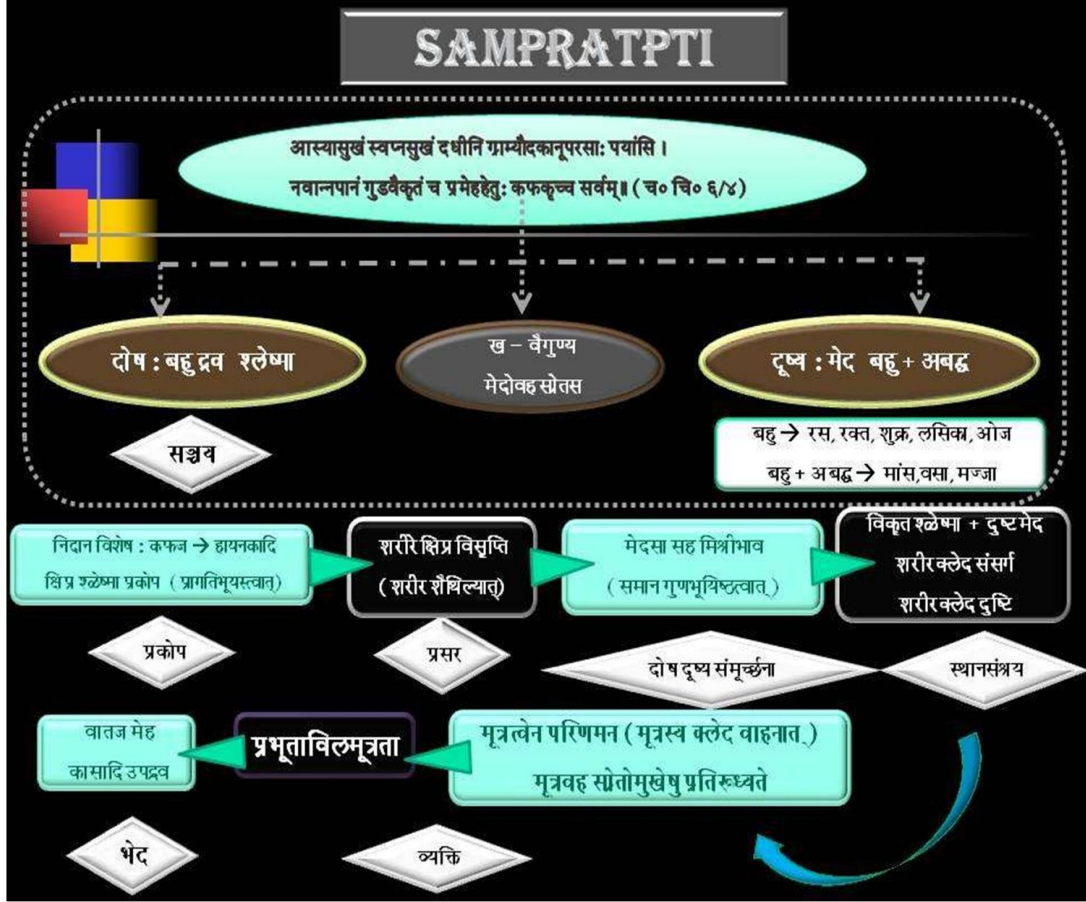
Upekshayasya jayante pidaka Madhumehikah (Ch.Su.17).

Madhumehe madhusam jayate sa kildwidha Kruddhe dhatukshayadyayau doshavrittpatheathva Avritto doshalingani soanimitam pradarshyan Kshanatksheenah Kshanatpurno bhajate Krichra sadhyatam (Madh. Pram Ni 24-25).

Madhuram yacch meleshprayo madhviv mehati Sarveapi madhumehakhya madhuryacch tanoratah (A.Hr. Nidan 10/Madh. Pram. Nidan 26).

All Acharyas have described madhumeha as a subtype of vataja prameha. In Charaka Sutasthan avaranjanya and dhatukshaya janya madhumeha is also discussed.

### Samprapti (pathogenesis) of prameha



### Dosha-Dushya Samgraha in prameha

Ayurveda describes 20 subtypes of Prameha as different clinico-pathological conditions produced out of specific Doshas and Dushyas showing gross urinary characteristics and clinical manifestations. The fractional changes in dushyas namely Meda, Mamsa, Kleda, Shukra, Shonita, Vasa, Majja, Lasika, Rasa & Oja, in association with three morbid doshas manifests different subtypes of prameha.

### Early diabetes (Kaphaja Prameha)

- **Udakameha**- Clear urine in larger quantity without odour, feels cold sensation while passing urine.
- **Ikshuvalikameha** – Very sweet urine, cold, slightly turbid due to slimy substances and like crushed cane sugar.
- **Sandrameha** – Precipitate is deposited in the pot, if urine is kept overnight.
- **Sandra Prasadmeha**- Described as Surameha by Sushruta & Vagbhata. Literally, sandraprasad means -some portion of urine is turbid & some is clean like un-distilled alcohol (Sura).
- **Shuklameha** – Urine seems to be mixed with some paste. While passing urine patient feels erection of body hairs. It is described as Pistameha by Sushruta.
- **Shukrameha**, – Patient passes urine similar to quality of semen or semen itself may be mixed



with urine.

- **Sheetameha**– Urine is very sweet & enormous with low temperature.
- **Siktameha** - Patient starts passing small particles like sand in urine.
- **Sanairmeha**- Flow of urine becomes slow & patient feels difficulty in passing urine.
- **Lalameha** – Quality of urine is turbid & slimy. It is sticky & threads may be demonstrated like gum.

#### **Acute diabetes (Pittaja Prameha)**

- **Kalameha** –Urine is blackish.
- **Nilameha** –Urine is bluish.
- **Lohitameha** –Urine contains blood and saltish in taste with putrid odour. It is described as Shonitmeha by Sushruta & Raktameha by Vagbhata & Madhava.
- **Manjishthameha** –Urine is pink-like decoction of Manjishta having putrid odour.
- **Haridrameha**- Urine is turmeric yellow, pungent & associated with severe burning sensation.
- **Ksharmeha** –Not named on the basis of colour. Urine is like an alkali (ash) solution, in smell, colour and touch.

#### **Chronic diabetes (Vataja Prameha)**

- **Vasameha**- Urine contains fat (vasa).
- **Majjameha** –Urine contains bone marrow (majja). It is described as Sarpimeha by Sushruta.
- **Hastimeha** –Lymph (lasika) is passed in the urine. Flow & frequency of urine is almost continuous (incontinence). Simile of such patients is given with adult elephant as regards passes of urine.
- **Madhumeha** – Essence of body – Oja, is passed in urine and its taste is sweet & little astringent like honey.

#### **Prameha as a metabolic disorder and its relationship to mental stress**

Obesity, metabolic syndrome, and diabetes mellitus are common in having metabolic disorders. In Ayurveda, ama refers to the toxic intermediary products of digestion and metabolism that result from improperly digested food. The relationship between prameha and ama is well documented. If Agni is not proper, accumulation of ama occurs which ultimately leads to prameha. According to charak samhita if someone is suffering from psychological stress such as anger, greed, grief, anxiety or fear, the agni is disturbed (vishama agni) and whatever is eaten is not properly metabolized, ultimately leading to the production of ama. This strongly suggests a close relationship between stress and ama, factors contributing to obesity, metabolic syndrome and diabetes mellitus.

#### **Prakriti and Prameha**

Prakriti (psychophysiological constitution) of an individual is determined at the time of birth by the individual's dosha proportions. As soon as this proportion of vata pitta and kapha is in equilibrium state, the individual will be healthy. Due to improper diet, lifestyle and other factors this balance of vata pitta and kapha gets disturbed making the person susceptible to disease. The prakriti of an individual plays a very important role in the progression and prognosis of disease and response to treatment. In our earlier studies, it is observed that Kaphaja prakriti diabetic patients have mild hyperglycemia with hyperinsulinemia making the prognosis good for the patient. Contrary to this, vataja prakriti diabetic patients had severe hyperglycemia with hypoinsulinemia making the prognosis bad. These values were moderate in case of pittaja prakriti type of diabetic patients.

### **Upadrava (complications) of Prameha**

Upadrava refers to the complications of prameha and covers all the conditions, other than urinary, which diabetic patients can develop. Ashtang sangraha has described complications for each doshic type of prameha separately as under.

**Kaphaja Prameha** - Pratishyaya (coryza), Sharira shaithilya (laziness), Arochaka (anorexia), Avipaka (indigestion), Praseka (excessive salivation), Chhardi (vomiting), Nidra (hypersomnia), Kasa (cough).

**Pittaja Prameha** - Amlika (hyperacidity), Pipasa (excessive thirst), Jvara (fever), Daha (burning sensation), Murchchha (fainting), Atisara (diarrhea), Pandu (anemia), Vrishnavadaramam (cracking of the scrotal skin), Bastimedhra toda (pain in the penis and bladder region).

**Vataja Prameha** - Hridgraha (heaviness in the chest), Lautyam (excessive hunger), Anidra (insomnia), Kampa (tremors), Shulam (pain), Baddha purishatvam (constipation), Kasa (cough), Shwasa (dyspnea).

The complications related to diabetes mellitus as described in modern medicine, are mentioned in Ayurveda either directly or indirectly in relation to prameha. Diabetic neuropathy is directly mentioned as a burning sensation in the body, tremors, and hastimeha (incontinence of urine), while anorexia, vomiting, diarrhea etc denote diabetic enteropathy. Heaviness in the chest indicates cardiac disorders, and fainting, tremors etc. may relate to cerebral disorders. The features of nephropathy are not directly referred to in upadrava (complications) of prameha, however, these are described in detail in 20 subtypes of prameha such as vasameha, majjameha, raktameha, manjisthameha etc. The presence of excessive waste products in the eyes, ears, tongue etc. discussed as purvarupa (prodromal symptoms), indicates involvement of these organs with the advancement of disease and ultimately retinopathy could develop as a result. Furthermore, many of the features of complications are described in Charak Samhita as diseases caused by over intake of a highly nutritious, high-calorie diet intended to increase body weight (santarpana).

### **Conclusion**

Prameha is described as a set of complex clinical disorders characterized by frequent abnormal micturition, with the etiology involving genetic predisposition as well as improper diet and lifestyle. The role of stress and obesity in its pathogenesis is also elaborately discussed in Ayurvedic classical texts. The clinical conditions described in Prameha have much in common with those described in allopathic medicine for Obesity, metabolic syndrome & Diabetes Mellitus. The Ayurvedic management of Prameha emphasizes dietary and lifestyle recommendations and herbal preparations in accordance with the psycho-physiological constitution of the patient. Mental health-promoting drugs (Medhya), and Yoga, along with bio-purification as described in Panchakarma, if added along with anti-diabetic therapy, may further potentiate the anti-diabetic effect of the principal drug by counteracting stress. Ayurveda and modern medicine are complementary and supplementary to each other. Simultaneous administration of Ayurvedic drugs will not only potentiate the therapeutic efficacy of the modern drug rather it may also reduce the adverse effects of the modern drug, if any; to lead the patient to a healthy & happy life. Organ-specific Rasayana may be added for prevention and cure of complications.

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## Marma Science, Yoga and Health

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Man is the best creature of God. The human body is made up of five basic elements and a soul. In spite of this quality, the human body is the subject of all activities. In *Caraka samhita* the *sada dhatu purusa* is known as *chkitsya purusa*, the human body is constituted by different systems: All these systems work together regularly without any hindrance. The human body is made up of seven *dhatu*s i.e. *rasa, rakta, mansa, meda, asthi, majja* and *sukra*. A number of changes occur in the human body during the whole life span, the homostasis of *dosas* is known as health, imbalance in the *doshic* state may lead to disease; *shariram vyadhi mandira* means the body is the seat of diseases.

The aim of *Ayurveda* is to protect the health of a healthy individual and to cure the diseases of a diseased person. There is a major role of *marma* therapy, *yoga* along with *Ayurveda* to fulfill the above-mentioned goal. The whole world is seeking *marma* therapy and *yoga* as a weapon to combat the diseases of modern life. *Marma* therapy and *yoga* are practiced by many people to achieve a healthy state of life. A number of incurable diseases are treated with the *marma* therapy and yogic practices. In the present era, we suffer from a number of ailments. The main cause of such sufferings is the stress generated by competitiveness, changing lifestyle and behavior. As a result human being suffers from physical and mental illness. *Adhyatmic, adhibhautik, and adhidaivik* are three types of sufferings, these sufferings can be treated with *mantras, marma* therapy and *yoga* and *Ayurveda* collectively.

In present circumstances, many people have come to realize the importance of *marma* therapy and *yoga* as practical methods of improving the state of body health and the quality of life. *Marma* therapy and *yoga* are used to achieve equilibrium, harmony, and balance in day-to-day life. Various means of *yoga* may be grouped under *asanas, pranayamas, kriyas, bandhas, mudras* and *dhyana*. Directly and indirectly, all yogic practices affect the *marmas*.

According to *Charaka samhita* persons living near to nature remained away from the diseases. Changing lifestyle and food habits are responsible for the manifestation of different physical and mental ailments. For achieving positive health, it is necessary to lead life according the natural laws. Early rising and proper sleep is necessary for good health. Consumption of natural food and plenty of water makes a difference.

The body is a replica of the universe, changes in the universe affect the body. Simultaneously the body's activities, mental workup, feelings and speech affect the body itself.

*Marma* therapy and *yoga* are important to cure the disease and enhance the health status of the body. Nowadays, *asana* are much popularized in society for health promotion. It improves health and tones up the body's musculature. These practices affect the body's physiology. In the higher stages of *yoga* these *asana, mudra, pranayama, bandha* are supportive of higher spiritual activities. *Marma* therapy and yogic postures have a great impact on the nervous system, musculoskeletal system, endocrine glands, respiratory system and organs of the abdomen, heart and circulatory system. These *marma* practices and yogic exercises were developed by ancient *rishis* by observing nature minutely.

### Effect of self-marma therapy and yogic practices on the digestive system

The digestive power of the body is improved by regular self-*marma* therapy and yogic practices. The essential substances are supplied to the body regularly by absorbing these substances and food material from the intestine. Metabolism of food takes place in the liver. Excessive available nutrients are deposited in the different parts of the body. During necessity, the body itself utilizes these nutrients.

The following effects are seen on the digestive system by the *marma* therapy and *yogic* practices:

1. It maintains the digestive power healthier by stimulating all organs of G.I.T.
2. It improves the digestive function of the body.

3. Increases the appetite by proper digestion of food.
4. Improves the function of the intestine. So the intestine takes out the harmful substances properly.
5. Improves the peristaltic movement of G.I.T. & relieves constipation, loss of appetite and hyperacidity.
6. By the proper digestion of food body gets the proper nutrients and it also improves the working capacity of the body.

#### Important organs of the digestive system

- |                    |                    |              |
|--------------------|--------------------|--------------|
| 1. Tongue          | 5. Duodenum        | 9. Rectum    |
| 2. Salivary glands | 6. Small Intestine | 10. Liver    |
| 3. Esophagus       | 7. Appendix        | 11. Pancreas |
| 4. Stomach         | 8. Large Intestine |              |

#### Main Disease of the Digestive System

- |                   |                       |                    |
|-------------------|-----------------------|--------------------|
| 1. Hyperacidity   | 6. Enteritis          | 11. Pancreatitis   |
| 2. Gastric ulcer  | 7. Colitis            | 12. Cholecystitis  |
| 3. Gastritis      | 8. Appendicitis       | 13. Cholelithiasis |
| 4. Stomach Cancer | 9. Ulcerative colitis | 14. Constipation   |
| 5. Duodenal ulcer | 10. Jaundice          |                    |

#### Useful in digestive system diseases

1. *Asana*: - *Vajrasana, suptavajrasana, ardhmatsyendrasana, paschimottanasana, mayurasana, pawanmuktasana, katichakrasana, sarapasana, dhanurasana, sarvangasana, trikonasana, akarnadhanurasana, surya-namaskara.*
2. *Pranayama*: - *Nadishodhana, bhastrika.*
3. *Bandha*: - *Moola bandha, uddiyana bandha, etc.*
4. *Mudra*: - *Ashwini mudra, tadagi mudra, maha mudra etc.*
5. *Satakriya*: - *Kunjala, vasti, sankhaprakshalana, Nauli, vastradhauti, agnisara etc.*
15. *Marma therapy* :- *Guda, nabhi, kurpar and indravasti.*

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6. *Marma therapy* :- *Guda, nabhi, kurpar and indravasti*

### **Contra indication of yogic practices in different digestive disorders**

In the following condition yogic practices especially *sadakriyas* should not be practiced.

1. In the acute and infective stage of any disease i.e. acute appendicitis, gastric ulcer, ulcerative colitis, cholecystitis, Jaundice etc.
2. Any condition when blood is coming from the mouth or anus.
3. In the acute phase of any disease, *sadakriya* may produce many complications.
4. Limited use of other harmless yogic postures, *pranayana, mudra* and *dhyana* should be done with other curative procedures.

But there is no contraindication of *marma* therapy in the above-mentioned conditions. In these conditions, *marma* therapy does not hurt the site of the lesion. It gives a positive effect on the affected site. One can perform the *marma* therapy at any stage of the disease.

### **Effect of self-*marma* therapy and Yogic practices on the blood circulatory system**

During yogic practices heart and circulatory system plays an important role. It is a well-known fact that any work is not possible without energy. Oxygen and nutrients are generated in the muscles during yogic practices. So at the time of yogic practices heart rate and arterial blood circulation also increase. By this process, blood pressure also increases. Due to increased blood circulation lungs also work rapidly. Body temperature increases due to different biochemical reactions in the muscles. Increased body temperature due to exercise is maintained by sweat glands they produce more sweat. Many excretory substances are also excreted through sweat. The following effects take place on the circulatory system, during yogic practices.

1. Regular self-*marma* therapy and yogic practices may produce some changes in the body. The working capacity of the heart improves by regular self-*marma* therapy and yogic practices. The heart pumps a good amount of pure blood into the circulation so the oxygen and other nutrients are readily available for the better physiological activities of the body.
2. Regular self-*marma* therapy and yogic practices may lead to bradycardia. It provides a better effect on the heart and circulatory system. It improves the working capacity of the heart. During hard work circulatory system gives better performance.
3. Regular self-*marma* therapy and yogic practices may lead to a number of biochemical changes in the blood. It increases the oxygen-carrying capacity of the blood. Excretory metabolites and substances are taken away rapidly. So the concentration of excretory metabolites remains at the lower level. Blood cholesterol decreases and the chances of heart attack are few in this condition. Regular self-*marma* therapy and yogic practices may prevent heart diseases. Patients with heart diseases may prefer high yogic practices. Through these practices, the heart becomes healthier and strong.
4. Through regular self-*marma* therapy and yogic practices, the blood cell count increases. So the blood-carrying capacity, disease-resistant capacity and immunity improve.

The general body is built and the outlook becomes healthy. There is marked amusement in body resistance power.

### **Important organs of the blood circulatory system (cardiovascular system)**

1. Arteries

2. Veins
3. Heart

### **Important diseases of the blood circulatory system (cardiovascular system)**

1. Hypertension
2. Congenital heart diseases
3. Cardiovascular diseases
4. Coronary artery diseases
5. Pericarditis

### **Useful in blood circulatory (cardiovascular) diseases**

1. *Asana*: - *Sheershasana, sarvangasana, shavasana, naukasana, halasana, karnapidasana* etc
2. *Pranayama*: -*Bhastrika, pranayana, nadi shodhana, pranayana, anuloma- viloma, pranayama*, etc.
3. *Mudra*: - *Unmani mudra, shambhavi mudra* etc.
4. *Bandha*: -*Uddiyana bandha, mula bandha* etc.
5. *Satakriya*: - *Agnisara, vastra dhauti, kunjala* etc.
6. *Dhyana*
7. *Marma therapy*: - *Talahridaya, nabhi, hridaya, ani, urvi*.

### **Contra indication of yogic practices in different blood circulatory/cardiovascular diseases**

In the following conditions, yogic practices should not be done.

1. Congenital heart diseases.
2. Cardiac failure
3. Acute pericarditis
4. Infective diseases of heart and blood vessels

But there is no contraindication of *marma* therapy in the above-mentioned conditions. In these conditions, *marma* therapy does not hurt the site of lesion. It gives a positive effect on the affected site. One can perform the *marma* therapy at any stage of the disease.

### **Effect of self-*marma* therapy and *Yogic* practices on the respiratory system**

Every physical activity needs energy. Oxygen is necessary for the energy generation from the food material. Any exercise or hard work needs more oxygen, for better oxygenation lung function gets affected. During yogic practices, the respiration rate gets increased. In the lungs exchange of oxygen and carbon dioxide takes place at the cellular level in a better way. Oxygen absorption increases and the removal of carbon dioxide becomes more pronounced. During this exchange, energy is generated so the body temperature and respiratory rate may be raised. Regular self-*marma* therapy and yogic practices may affect the body and mind. The following effects are noted on the respiratory system during yogic practices.

1. Regular self-*marma* therapy and yogic practices enhance the working capacity of the respiratory system especially the lungs and bronchial tree. Initially, there is a marked increase in respiration rate during exercise but in the long run respiratory rate does not get much affected even after vigorous yogic practice.

2. Through regular self-*marma* therapy and yogic practices lung capacity, and the vital capacity tidal volume get a positive response.
3. Regular self-*marma* therapy and yogic practices improve the function of the muscles supporting respiration. (Intercostal muscles diaphragm and bronchial muscles).
4. Due to regular self-*marma* therapy and yogic practices especially *pranayama* oxygen consumption lowers down, so the respiration rate gets slower down. One can perform all vigorous activities without increasing the respiratory rate.

#### **Important organs of the respiratory system**

1. Nose
2. Trachea
3. Lungs
4. Thoracic muscles
5. Diaphragm

#### **Important diseases of the respiratory system**

1. Rhinitis
2. Cough
3. Bronchitis
4. Pneumonitis
5. Tuberculosis
6. Bronchial Asthma

#### **Useful in diseases of the respiratory system**

1. *Asana*: - *Yoga mudra, singhasana, akarna dhanurasana, shavasana, paschimottanasana, pawan muktasana, naukasana, sarvangasana, halasana, karnapidasana* etc.
2. *Pranayama*: - *Nadi shodhan pranayam, bhastrika pranayama, suryabhedan pranayana* etc.
3. *Satakriya*: - *Jalaneti, sutra-neti, kapala-bhati, kunjaj-kriya, vastra-dhauti, nauli* etc.
4. *Bandha*: - *Uddiyana bandha, jalandhara bandha* etc.
5. *Mudra*: - *Viparita karani, mahamudra*.
6. *Dhyana*
7. *Marma therapy*: - *Marma of head, neck and thorax*.

#### **Contraindication of self-*marma* therapy and yogic *chikitsa* in different respiratory diseases**

In following diseases yogic *chikitsa* should not be done.

1. Acute infective diseases of the respiratory system.
2. Acute pneumonitis.
3. Haemoptysis.
4. Tuberculosis and complications.
5. Epistaxis.
6. Acute Rhinitis & Sinusitis.

However, there is no contraindication of *marma* therapy in the above-mentioned conditions. In these conditions, *marma* therapy does not hurt the site of lesion. It gives a positive effect on the affected site. One can perform the *marma* therapy at any stage of the disease.

#### **Effect of self-*marma* therapy and yogic practices on the excretory system**

The skin, kidneys and large intestine are the main excretory organs of the human body. Regular self-*marma* therapy and yogic practices give positive impact on these organs. Self- *marma* therapy and yogic practices affect these organs in the following ways—

1. During exercise heart rate & pulmonary function improve. The work is more efficiently. Consumption of oxygen increases and more carbon dioxide gets excreted. It removes a number of body ailments.
2. The sweat gland in the skin produces more sweat and due to excessive perspiration, more metabolites are excreted through the sweat glands. It keeps the blood pure.
3. During self-*marma* therapy and yogic practices due to increased blood circulation in the brain, heart, kidneys and liver, the working capacity of these organs increases. The body becomes healthier. Kidneys play an important role in metabolites through urine. Kidneys are the main blood filters. The liver plays an important role in the digestion of food. Bile formation takes place in the liver from the liver bile comes in to the gall bladder. During the passing of fat into the duodenum. The gall bladder shrinks and whole bile comes in to the duodenum. Bile is important for the digestion of fat in many ways. But it contains many other metabolites, pigments, salts and excretory substances that also reach in the intestine & evacuated through the fecal material and urine. (Sterobilinogin and urobilinogin)
4. Through regular self-*marma* therapy and yogic practices the working capacity of the organs of the digestive system improves. Smooth muscles of the gastrointestinal tract become stronger and digestion power improves. Excretion of excretory substances takes place in a better way. Yogic practices play an important role in improving the functioning of all excretory organs.

#### **Important organs of the urine excretory system**

1. Kidneys
2. Ureters
3. Urinary bladder
4. Urethra
5. Skin

#### **Important diseases of the urine excretory system**

1. Nephritis
2. Ureteritis
3. Cystitis
4. Urolithiasis
5. Haematuria
6. Oilgouria and anuria
7. Prostatic enlargement

#### **Use full yogic practices in urine excretory system**

1. *Asana*: - *Ardhamatsyendrasana, matsyendrasana, ustrasana, trikonasana, paschimottanasana, naukasana, pawanmuktasana, supta-katichakrasana, kati chakrasana, bhuganagasana, mayurasana, dhanurasana, halasana, bhunamanasana, hastapadangyasthanasana, surya namaskara* etc.
2. *Pranayama*: - *Nadishodhana pranayana. bhastrika pranayana* etc.
3. *Bandha*: - *Mula bandha. uddiyana*
4. *Mudra*: - *Ashwinimudra, tagadimudra, mahamudra, bajrali mudra* etc.
5. *Kriya*: - *Vasti, nauli, sankha prakshalana, agnisarakriya, kunjala* etc.
6. *Dhyana*



7. *Marma therapy*: - *Parsva sandhi, guda, vasti, nabhi* and *marmas* of lower extremity.

### **Contraindication of yogic practices in different diseases of the urine excretory system**

In following urine excretory system diseases yogic practices should not be done.

1. Acute uraemia/ azotemia
2. Urolithiasis
3. Hematuria
4. Acute urinary tract infection
5. Malignant growth of the urinary system.

However, there is no contraindication of *marma* therapy in the above-mentioned conditions. In these conditions, *marma* therapy does not hurt the site of lesion. It has a positive effect on the affected site. One can perform the *marma* therapy at any stage of the disease.

### **Effect of *marma* therapy and yogic practices on endocrine and exocrine glands**

There are two types of glands, Endocrine and Exocrine glands. Those glands are endocrine which means less secretion of these glands directly enters into the blood circulation.

The pituitary, thyroid, parathyroid thymus and adrenals are the main endocrine glands. The pancreas, ovary and testicle are combined glands. Some of these secrete enzymes, ova and sperms are transported into the intestine, uterus and urethra. Salivary glands sweat glands and glands situated in the stomach and intestine secrete their secretions.

By regular yogic practices, the function of these glands can be affected. In healthy individuals, yogic practices may activate the function of these glands. Health promotion is possible by activating the endocrine & exocrine glands.

In reference to sweat glands, any exercise increases excessive sweating. Yogic practices increase the blood circulation of the glands. Due to increased blood circulation, the function of these glands improves. So the body's immunity and secretion of these glands affect the function of many organs. Yogic practices may affect these glands in many ways.

- I. Regular yogic practices and *marma* therapy improve the function of glands.
- II. Glands secrete a good amount of hormones.
- III. The quality and composition of hormone becomes more balanced.
- IV. It improves the body's immunity and the decaying/ageing process can be delayed.

Important Glands are-

1. Pituitary gland
2. Thyroid gland
3. Parathyroid gland
4. Thymus gland
5. Pancreas gland
6. Adrenal glands

### **Important diseases of endocrine glands**

1. Thyroid swelling
2. Diabetes
3. Infertility
4. Congenital brain and anatomical deformities.

## Harmonizing Traditions: Synergy of Ayurveda and Modern Medicine

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Ayurveda has an extensive pharmacopoeia, predominantly herbs and minerals. Their healing properties are well summarized in classical texts. Ayurvedic formulations, often complex with several herbal-mineral ingredients, are governed by well-described pharmacological principles of preparation, compatibility and administration.

In some complex, well-controlled physicochemical processes convert raw metals and minerals into potent medicines known as *bhasmas*. Although classic texts contain descriptions of classic formulations, traditional Ayurvedic practitioners often modify them to suit the individual constitution (*prakriti*), which confers genetic predisposition toward disease and therapy response, and is vital to ensure medication safety. Safety is inherently bound to efficacy, forming an important endpoint when preparing an Ayurvedic formulation. A formulation's medicinal power is a function of its milieu interior, not merely due to any single plant extract.

Molecular structure as viewed in modern science is not described, and is of no particular significance in determining a formulation's therapeutic properties. Ayurveda's basic perspective: "no two individuals are alike" holds, even when they suffer from seemingly similar ailments. Also, advice on diet, exercise, and lifestyle are inherently bound to its basic therapeutic approach. Rather than seeking support from laboratory or imaging investigations, Ayurvedic physicians use subtle clinical methods to diagnose and monitor therapeutic response. Modern medicine, in contrast, is founded on the reductionist approach to health and disease, and attempts, first and foremost, to eliminate pathology. Although clinical evaluation is of paramount and critical importance, science as such is extremely impersonal, and, when treating patients, generally cuts across individual differences (genetic or other). Proneness to disease and prevention thereof are more environmental and genetic issues than questions of "wholesome strengthening of the host." There is a strong, across-the-board underpinning of "objectivity," in diagnosis, treatment, and therapy response. Medicines are its core strength – well-characterized in structure and function (usually well-tested under laboratory and clinical trial conditions), with efficacy/safety trade-offs. Response is generally predictable. Both systems should identify their strength and weaknesses – Safety, Efficacy

### Identify areas of integration

- Musculoskeletal disorders – osteoarthritis, rheumatoid arthritis
- Neurological disorders
- Metabolic disorders – Diabetes, Dyslipidemia
- Carcinoma
- Several ocular disorders
- Skin disorders
- Allergic conditions
- Conditions associated with Geriatric population
- Dentistry etc.

Ayurveda can be practiced as preventive, palliative, add-on therapy to existing conventional management. In present era stress is one of the major health problems and for its management yoga and meditation as per our traditional knowledge is very effective. It also proves in many disease conditions for betterment or complete cure, therefore, it is now adopted by whole of the world. In recent past, the WHO has also established the Global Centre of Traditional Medicine at Jamnagar for better understanding and propagation.

- Diet and lifestyle modifications as per Ayurveda
- Concept of Prakriti
- Rasayana Therapy
- Panchakarma
- Functional Medicine

Need for generating evidence of efficacy and safety of these combinations including drug – drug / herb – drug interactions

### Benefits of Integration

- For appropriate diagnosis of diseases
- For effective management of diseases
- Reduce the health burden on society
- Reduce the economic burden

There is an urgent need for allopathic and Ayurvedic practitioners to work together and develop an understanding of the diverse healing traditions and enhancing the communication skills in order to optimize the risk benefit profile of the medicines. An intermediary is required at this early stage of amalgamation who can mutually understand both the traditional and modern sciences to retain the link while keeping the originality intact.

**The future of medicine is Integrative Medicine**

## Metabolic Syndrome (MetS) in Ayurvedic Parlance: An Overview

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### Introduction

Metabolic Syndrome (MetS) is a multi-factorial metabolic disorder affecting millions of people all-over the world. MetS increases the risk of cardiovascular diseases, diabetes, CKD and other metabolic disorders. In this perspective ancient treasure of medical knowledge Ayurveda strongly focus on two concepts of diseases first one related to the outcome of over-nutrition and the second one related to under-nutrition. The disease MetS is the outcome of over nutrition due to defective tissue metabolism.

### Diagnostic Criteria for Metabolic Syndrome (MetS) NCEP-ATP III

Presence of 3 or more than 3 of these 5 criteria	<ul style="list-style-type: none"><li>➤ <b>Waist circumference</b>&gt;102 cm in males &gt;88 cm in females</li><li>➤ <b>Raised Triglyceride</b> &gt;150 mg/dl or specific medication</li><li>➤ <b>Low HDL cholesterol</b>&lt;40 mg/dl in males &lt;50 mg/dl in females or specific medication.</li><li>➤ <b>Hypertension</b>- Blood pressure &gt;130/85 mm/Hg or specific medication.</li><li>➤ <b>Fasting plasma glucose</b>&gt;100 mg/dl or specific medication or previously diagnosed Type 2 DM.</li></ul>
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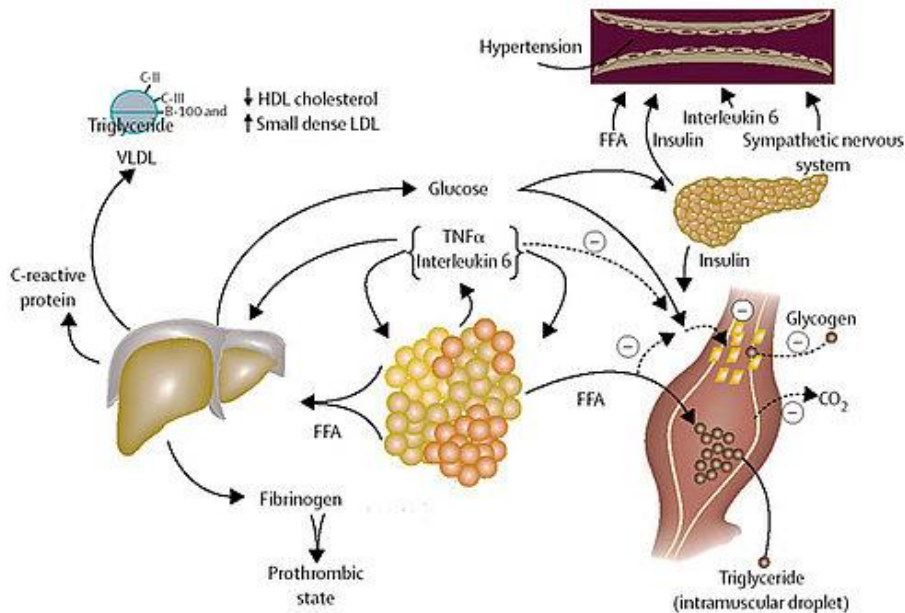
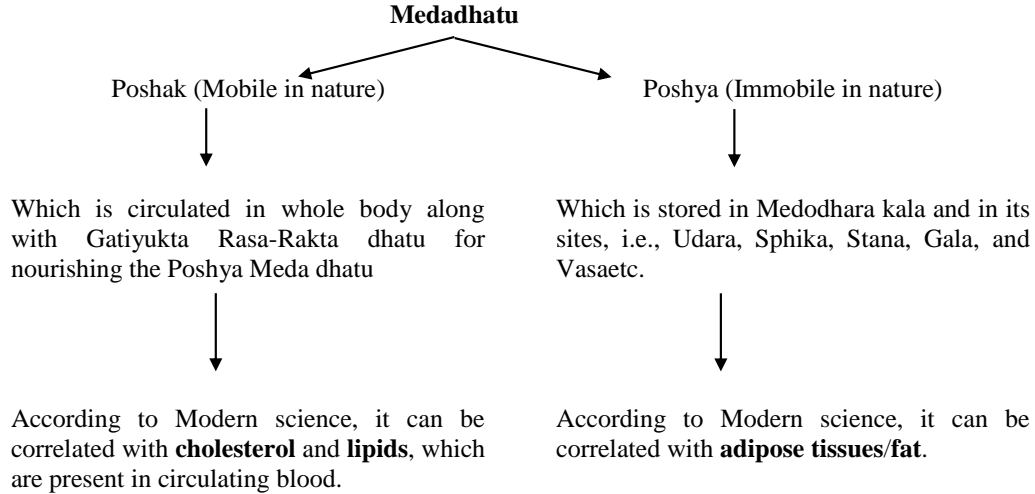
The disease Medoroga or Sthaulya is as such not described in Vedas, but In Yajurveda disease named “Upachita” has been described. This reference gives a clue regarding the existence of this disease in the Vedic era. The golden age of Ayurveda is Samhita Kala. In these Samhitas, there is a classical description of Sthaulya (obesity), Prameha (Diabetes), Ama dosha (Dysmetabolic adiposity) etc. under the heading of Santarpan-janya Vyadhi, which comprises all the diseases due to over nutrition and defective tissue metabolism. Ayurveda is very much concerned about the conservation of health rather than the eradication of disease. It presumes that improper dietary habits and deranged functions of different sets of Agni (Metabolic states), give rise to the formation of Ama (Reactive Antigenic Factor i.e., RAF).

When this preformed Ama interacts with Meda dhatu (Adiposity of the body), it alters the quality and quality of adipose tissues including lipids, especially cholesterol. This form of Ama, when circulates all over the body, leads to the blockade of micro-channels (Sroto-Sanga) and precipitate antigenic reactions and finally generates a series of inflammatory events in the body. The interaction of Ama with fat tissues is known as Sama Meda dhatu, which is the main cause of Medoroga and it leads to a variety of metabolic disorders.

Since the last few decades, the conventional system of medicine has focused on the concept of metabolic syndrome, which seems very similar to the concept of Santarpan-janya Vikara which was described thousands of years ago in the Ayurveda.

### Role of Meda Dhatu (Adiposity) in Pathogenesis of MetS

The most of Medadhatu resides in Medodhara Kala (3<sup>rd</sup> kala). Other sites are Udara, Sphika, Stana, Gala and Vasa (Mamsagata sneha). Medas is present in the body in two main forms. The first one is Poshak and the other one is Poshya.



### Central Adiposity: Triggering Factor of MetS

This concept refers that, Defective Poshak Meda dhatu is the triggering factor, which causes the accumulation of abnormal Poshya Meda dhatu, which finally causes excessive deposition of dys-metabolized fat (Abnormal Visceral and Subcutaneous Adiposity). In the pathogenesis of MetS, Poshya Meda dhatu increases inordinately and at the expense of other dhatu (tissues). In other words, while Poshya Meda dhatu is increasing, all other dhatu undergo wasting/depletion on account of lack of proper nourishment.

**“Acharya Dalhana” quoted that the nutrients brought in state of Ama (improperly metabolized) are heterologous to all other dhatu except Meda dhatu which alone therefore is capable of utilizing them and it increases and accumulates to an enormous extent in the body, while the other tissues suffer from lack of nutrition and wasting.**

In the pathogenesis of MetS, key factors are Central adiposity and Insulin resistance. Central (Visceral) adipose tissue has a tendency to direct the FFAs directly to the liver. These FFAs initiate an inflammatory mechanism and cause the release of several pro-inflammatory mediators (cytokines like TNF-alpha and ILs etc.),

from the liver. These pro-inflammatory mediators are then directed to the systemic circulation and give rise to other consequences of MetS.

### **Samprapti (Pathogenesis) of MetS based on Shad-Kriya Kala (Six Stages of Disease Evolution)**

#### **Sanchaya (First stage)**

Due to excessive indulgence in Adhyashana, Madhura, Sita, Snigdha ahara (fatty diet) and lack of physical exercise, Avyavaya, Divasvapna etc. (sedentary life styles) with and without presence of Bija dosha (genetic predisposition), there is an aggravation of all the three doshas (specially Kapha dosha). This form of Kapha have physical similarity with Ama and Meda dhatu, which get accumulated over an immovable part of the body in a vicious manner and finally, the whole nutritional pool is shifted towards the strengthening of this Amarupi Meda dhatu.

#### **Prokopa (Second stage)**

The increase of Kapha in quantity and quality is responsible for the disturbance in the functions of Agni (metabolism) at different levels in the body, especially at the level of Medodhatvagni. The deranged functions of Agni may lead to the formation of Amaat at this level. Because Kapha and Meda are of the same nature that's why Ama formed at Medodhatvagni level gets mixed with circulating Anna-rasa or Ahara rasa (very first nutritive pool after digestion) and causes blockage of micro channels (Srotosanga). This blockage of micro channels (Srotosanga) can be compared with the downstream signaling of the Insulin receptors due to excess formation of FFA (in the form of Ama).

#### **Prasara (Third stage)**

If a person is still consuming a Fatty and high-calorie diet and following a sedentary lifestyle, these preformed FFAs (mainly from the visceral adipose tissue) circulate all over the body in the form of Ama rasa (dys-metabolised FFAs).

#### **Sthanasamshraya (Fourth stage)**

The circulating Ama rasa (FFAs from the visceral adipose tissue) gets localized at different places in the body. FFAs which are directed to the liver stimulate the release of several pro-inflammatory mediators. In due course of time, these inflammatory mediators play an important role, especially in the pathogenesis of atherosclerosis and insulin resistance. (Most of the FFAs occupy the insulin receptors by molecular mimicry).

Besides this, Insulin resistance causes an imbalance between the production of NO and secretion of endothelin-I, leading to decrease blood flow to the vascular organs and activation of the sympathetic system which leads to the development of Hypertension.

#### **Vyakta (Fifth stage)**

If the whole process is continuously going on, it causes downstream signaling of the insulin receptors due to occupancy of these receptors by the circulating FFAs, which precipitates as Insulin resistance and this condition is known as Hyper-insulinemia. Initially, this stage represents as postprandial hyperglycemia, then fasting hyperglycemia and finally as the Hyperglycemia or Type 2 DM.

FFAs which are directed to the liver are associated with increased production of apo-B-containing triglyceride-rich VLDLs. In the presence of hypertriglyceridemia, a decrease in the cholesterol content of HDL is a consequence of reduced cholesteryl ester of the lipoprotein core in combination with cholesteryl ester transfer protein-mediated alteration in triglyceride, making the particle small and dense (increase in LDL concentration)

Small dense LDLs are thought to be more atherogenic. They may be toxic to the endothelium, and they are able to transmit through the endothelial basement membrane and adhere to GAGs and results in atherosclerosis and Hypertension.

### **Bheda (Sixth stage)**

The manifestation of the upadrava (complications) of MetS such as Atherosclerosis, Cardio vascular diseases (CVDs), Coronary Artery Diseases (CADs), Non-Alcoholic Fatty liver disease (NAFLDs) and Poly cystic ovarian disease (PCODs) and Renal impairment (in the form of AKI and CKD) etc. can be considered as the Bheda stage of MetS.

### **Role of Agni (Metabolic state) in the Pathogenesis of MetS**

As long as life in man, every tissue, organ and cell has to undergo process of constant changes to meet their survival and needs. This constant process of change either for yielding energy (Catabolic) or synthesize the tissue (Anabolic) is termed as **Agni** in Ayurveda. Agni maintains organism integrity and vitality by converting the food consumed in various ways and also to provide the energy necessary for proceeding innumerable vital activities through the **Paakadi** karmas i.e., biophysical and biochemical transformation. Agni participates and regulates the course of digestion and metabolism or any transformation in the tissues.

In the pathogenesis of MS, Agni plays a very important role from beginning to end. In the cases of MetS, Agni-mandata (sluggish metabolic activities) especially at the level of medodhatuagni is the root cause of MetS. Dhatvagni (specific tissue metabolic state) are seven in number. Each one is located in its specific dhatu (tissue) to permits its moiety from the circulating substances derived after bhutagni-paka (a metabolic state at the level of five basic elements), to form its own tissue. Dhatvagni functions are mainly of two types-

- 1- Synthesis of new proteins
- 2- To yield energy for the functions of tissues

If Dhatvagni is impaired, both these functions will impair. In the view of modern physiology also, that the tissue of the body are being reformed as rapidly as they are destroyed in the course of metabolism. Energy is obtained by the organism by the process of oxidation. No oxidation can proceed unless there is a simultaneous reduction of some other compound.

This Ama (Reactive Antigenic Factor) formation in the pathogenesis of MetS suggests that there is Dhatvagni-mandata (sluggish tissue metabolic state) at the level of Meda dhatu. It is pointed out by **Dalhana** and **Cakrapani** in their commentaries on Sushruta Samhita that the formation of Ama is not necessarily due to the Jatharagni (the prime metabolic fire) mandata only and it may also occur due to impairment of Dhatvagni-vyapara.

### **Modern Concept of Dhatvagni Paka (Biophysical and Biochemical Transformation at Tissue Level)**

According to modern physiology if we talk about the mechanism of action of hormones, the First step of a hormone's action is to bind with a specific receptor at the target cell. Cells that lack receptors for the hormones, do not respond. Receptors for some hormones are located in the target cell membrane, where as other hormone receptors are located in the cytoplasm or nucleus. When this hormone combines with its receptors, this usually initiates a cascade of reactions in the cell, with each stage becoming more powerfully activated. A type of hormone will act on a particular tissue. The target tissues that are affected by a hormone are those that contain its specific receptors. Similarly, each Dhatvagni has a specific action on its own dhatu. Though all the Agneyansa (a metabolic state at molecular level) are in circulation, a specific Agneyansa will have action on a specific dhatu (Tissue). Sapta Dhatvagni which are located in their respective dhatu, they are ignited by pachakansha of Agni (the chain of reaction of either synthesis or decay triggers by in contact with respective Agneyansa in circulation).

Insulin is an important hormone which is crucial for normal metabolism of carbohydrates, fats and proteins. The role of Rasagni (metabolic state at the very first level of metabolism), is to convert the received material in the liver into micro forms to nourish all the uttarottara dhatu (next-level tissues) to perform their functions. Similarly, insulin activity is associated with energy abundance from energy-giving food in the diet and it plays an important role in storing the excess energy. Without insulin, no cell membrane permits glucose molecule to transport inside the cell. Insulin increases glucose transport and usage by most of the cells of the body in the same way that it affects glucose transport and usage in the muscle. Hence Insulin resistance can be compared with Rasagnimandata (sluggish metabolic state at rasa dhatu) which ultimately leads to Hyperglycemia, Hypertriglyceridemia and other components of MetS.

The number of receptors in a target cell (Pachakansha in dhatu) usually does not remain constant from day to day or even from minute to minute. The receptors dhatu themselves are often inactivated or destroyed during the course of their functions and at other times they are reactivated or new ones are manufactured by their respective Dhatvagni.

When dhatu possess laghu guna (due to correct metabolism), they are easily respond to the Agneyaansa since their receptors are sensitive and undergo correct metabolic changes. If these dhatu possess guru guna, (because of the involvement of Ama due to improper metabolism), they will not respond much to Dhatvagni, leading to Dhatvagni-manadata.

Hence, the Dhatvagni are the chemical or humeral factors essential for changing the sequences of bases at DNA up to the formation of functional protein for the purpose of synthesis of its tissue (anabolic) and enzymatic factors essential to yield energy for tissue functions (catabolism).

Under Dhatvagni (starting from mitochondria all the enzymatic, co-enzymatic factors and catalytic factors participating in the chain reactions in the tissue to yield energy and the anabolic steroids, responsible for growth) can be considered. All endocrine, exocrine and paracrine including intercellular and intracellular enzymes can be considered as the Dhatvagni (specific tissue metabolic state).

### **Ayurvedic Approach to Management of MetS**

Samshodhan and Samshaman therapy are the important therapeutic measures described in Ayurveda for the management of various diseases. In which Samshodhan measures hits the root cause of disease. Under Samshodhan therapy, Procedures like Mridu virechana (mild purgation), shodhana Basti (purificatory enema) and Ruksha udvartana (dry powder massage) may be found clinically effective in cases of MetS. Vamana therapy (therapeutic emesis) can be planned with caution in case of MetS.

1. **Nidanparivarjana-** Nidanparivarjanais considered as the main therapy in the management of various diseases as described in Ayurveda. Nidanparivarjanais "To avoid the risk factors".
2. **Yoga and Asana** - According to medical scientists', yoga therapy is successful because of the balance created in the nervous and endocrine systems which directly influences all systems and organs of the body. Important Yogasans are Dhanurasana, Halasana, Matsyasana, Yogamudrasana etc.
3. **Meditative Exercises** - In this regard, Yogasana, pranayama, such as Anuloma-Viloma, Bhastrika, Kapalabhati and Traataka are helpful in checking the mental stressors. However, this should be advised only after evaluating the cardiac functions of the patients.
4. **Agni Promoting drugs** - such as Chitrakadi Vati, Trikatu Churna, and Pippali Churna etc.
5. **Ojas Promoting drugs** - such as Guduchi, Amalaki, Haridra, and Shilajatu etc.
6. **Compound formulations**– Important compound preparations such as Puskarabramhi guggulu, Medohara guggulu, Punarnavadi guggulu, Triphaladi guggulu, Nishamlaki Churna and Sarpagandhaghana vati are found to be helpful.

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## A Review on Madhumeha W.S.R. to Diabetes Mellitus and its Ayurvedic Management

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### Abstract

The term '*Prameha*' has two parts. '*Pra*' meaning abundant, and '*Meha*' meaning 'passing of large quantity of Urine. Thus the terms '*Prameha*' and '*Diabetes*' carry similar meaning. Thus it is seen that the terms '*Prameha*' and '*Diabetes*' are synonymous. While the terms '*Madhumeha*' and '*Diabetes Mellitus*' have similar meaning. *Madhumeha* is a clinical entity described in Ayurveda under the types of *VatajaPrameha*. It is caused by the aggravation of *Vata*, the patient passes excess urine, excretes honey-like sweet urine, astringent in taste, slightly turbid and pale in colour. It results from a complete or partial absence of insulin. These two types (Type 1 and type2) of diabetics have been described to be treated on two different lines of management. *Diabetes Mellitus* on the other hand is defined as clinical syndrome associated with Hyperglycemia with or without glycosuria due to defective insulin – either in quantity of affectivity, characterized by polyurea, polyphagia and polydypsia. Ayurveda is managed conservatively with exercise, diet, and medicine. *Ayurvedic Herbal, Herbomineral, Drugs* like *Chandraprabha* (*Curcuma zedoaria*), *Gudmar* (*Gymnemasylvestre*), *Asana* (*Pterocarpusmarsupium*), *Musta* (*Cyperusrotundus*), *Shilajit* (*Purified Bitumen*), *Khadir* (*Acacia catechu*), *Vacha* (*Acoruscalamu*), *Guduchi* (*Tinosporacordifolia*), *Jambu* (*Syzygiumcumini*) are reduce plasma glucose levels and blockage in the blood vessels, making blood circulation and nutrients easy to control diabetic complication.

**Keywords:** *Diabetes Mellitus, Hyperglycemia, glycosuria Madhumeha, Apathyaj Prameha- Vatic Meha, Chandraprabha*

### Introduction

Madhumeha is a disease known to mankind since Vedic period and it is mentioned among the twenty types of Prameha. It is also explained that, when other Prameha are left untreated, this lead to the condition called Madhumeha<sup>1</sup>. Madhumeha is related with Mutravaha and Medovahasrotas and Moolsthana of vyadhi are Basti and SamastaShareer. It involves ten Dushya and Tridosha, so it is multisystem disorder. In Madhumeha, patient passes large amount of turbid urine (*Avilamutrata*)<sup>2</sup> Madhur ras and whole body of the patient becomes Madhur<sup>3</sup>. Prameha or Madhumeha disease which described in Ayurvedic texts can correlates with modern day diabetes mellitus according to the etiological factors and clinical features. Traditionally, *Madhumeha* has been equated with *Diabetes Mellitus*. *Diabetes mellitus* is a multifactorial metabolic disorder affecting millions of people all over the world. It is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin. *Diabetes mellitus* is caused by a complex interaction of genetic predisposition, sedentary life style and environmental factors. *Diabetes mellitus* can be classified into two broad categories: Type-1 diabetes mellitus and Type-2 diabetes mellitus. Type 1 diabetes mellitus, is due to autoimmune beta cell destruction, usually leading to absolute insulin deficiency. Formerly known as insulin-dependent diabetes mellitus or juvenile-onset diabetes mellitus, While Immune mediated Idiopathic Type-2 diabetes, formerly known as non-insulin- dependent diabetes or adult-onset diabetes (may range from predominantly insulin resistance with relative insulin deficiency declining insulin production, and eventual pancreatic beta-cell failure resistance)<sup>4</sup>. The classical symptoms diabetes mellitus – Weight loss, polyuria (frequent urination), Polydypsia (increased thirst) and Polyphagia (increased hunger).

### Prevalence



Diabetes mellitus is recognized as a major chronic metabolic disease. Diabetes mellitus is an “iceberg” disease it is a ubiquitous malady of the world today. In India, diabetes mellitus is a growing challenge with second largest number of diabetic-population in the age group of 20-79 years<sup>5</sup>. The World-wide prevalence of Diabetes mellitus has risen dramatically over the past two decades, from an estimated 537 million cases in 2021, Based on current trends, the international diabetes federation projected to rise to 643 million by 2030 and 783 million by 2045. The global prevalence of diabetes in the population is 10.5% according to IDF<sup>6</sup>.

As per the statistical data comprised by *The Lancet Diabetes and Endocrinology* journal, the study conducted by the Indian Council of Medical Research–India Diabetes (ICMR- INDIAB) confirmed that India is now home to 101 million diabetics.

### Prevalence rate of India

Table no.1 Prevalence rate of India according to ICMR-INDIAB

	Urban	Rural	Average
Pre - Diabetic	15.4%	15.2%	15.3%
Diabetic	16.4%	8.9%	11%

	Highest prevalence Rate in state	Lowest prevalence Rate in state
Pre-Diabetic	Sikkim (31.3%)	Mizoram (6.8%)
Diabetic	Goa (26.4%),	Uttar Pradesh (4.8%)

### Aims and Objective

1. To access clinical presentation of Madhumeha.
2. To access the principle management of Madhumeha.
3. To access the importance of life-style modification in Madhumeha.

### Material and Method

1. In Classical Ayurvedic literature, the Madhumeha’s (Diabetes Mellitus) described form of etiology, causative factor, sign & symptom and treatment elaborately in Samhitas.
2. In this article review some Ayurvedic text, modern books, and Research article.

### Main causes of Madhumeha

Ayurvedic classics elaborately describes about the general etiological factors of *prameha* and according to *Acharya Charaka*, this disease is *Tridoshik* in origin.

आस्या सुखं स्वप्न सुखं दधिनि ग्राम्योदक आनुप रसा पयांसि।  
नवान्नपानं गुडवैकृतं च प्रमेहहेतुः कफकृच्छ सर्वम्॥7

A lifestyle with a lot of sitting and lying down with very little to no exercise (Laziness, sedentary life style) / less physical activity, day time sleep consumes food and drinks which are cold, unctuous, sweet and fatty items etc.

### Etiology of Diabetes Mellitus

Disturbances or abnormality in gluco-receptor of beta cell so that they respond to higher glucose concentration or relative  $\beta$  cell deficiency. In either way, insulin secretion is impaired; may progress to beta cell failure.

1. Reduced sensitivity of peripheral tissues to insulin: reduction in number of insulin receptors, down regulation of insulin receptors. Many hypersensitive and hyper-insulinaemic, but normal glucose and have associated abdominal obesity, dyslipidemia, hyperuriaemia. Thus there is relative insulin resistance, particularly at the level of liver, muscle and fat.
2. Excess of hyperglycaemia hormone (glucagon) etc. /obesity; causes relative insulin deficiency –the  $\beta$  cells lag behind. Two theories have demonstrated abnormalities in nitric oxide metabolism, resulting in altered perineural blood flow and nerve damage
3. Due to specific genetic defects (type 3) like “maturity onset diabetes of young” (MODY) other endocrine disorders, pancreatectomy and gestational diabetes mellitus (GDM).
4. Due to imbalance of specific receptor can cause diabetes mellitus. Some specific receptors are Glucagon-like peptide-1(GLP-1) receptor, peroxisomes proliferatoractivated ( $\gamma$ ) receptor (PPAR $\gamma$ ), beta3 ( $\beta$ 3) ardent-receptor some enzymes like  $\alpha$  glycosidase, dipeptidyl peptidase-4 enzyme etc<sup>8</sup>.

### Samprapthighatakas (Favorable Things for Disease)

**Dosha:-** Tridosha

**Dushyas:-** Rasa, Rakta, Mamsa, Meda, Majja, Vasa, Lasika, Oja, Shukra, Ambu<sup>9</sup>, Sweda<sup>10</sup>

**Srotas:-** Medovaha, Mutravaha, Udakavaha

**Srotodushti:-** Atipravritti, Sanga

**Agni:-** Vaishamya of all Agnis (or Dhatvagnimandya)

**Udbhavasthana:-** Amashaya-Pakvashaya **Adhithana:-**

MutravahaSrotas (Basti)

**Ama:-** Medogata (Ama produced due to Jatharagnimandya and Dhatvagnimandya).

**Bhedavastha:-** Occurrence of Upadravas such as Putimamsa and PramehaPidika etc.

**Swabhava :-** Chirkari

### Samprapthi (Pathogenesis)

*Kapha* undergoing increase by the etiological factors, reaches various *Dushyas* like *Rasa, Rakta, Mamsa, Meda, Majja, Vasa, Lasika, Oja, Shukra, Ambu*. As there is a *shaithilyata* (looseness) in the body and it being fluid predominant, spreads all over the body and gets vitiated, while spreading it gets mixed with *medas* (fat – adipose tissue), *mamsa* (muscle) and *kleda* (body fluids). Body fluids which got vitiated draw them to the urinary bladder and produces *prameha*; similarly the *Pitta* affects them, *Vata* also brings about vitiation in them and produce *prameha*<sup>11</sup>.

मेदश्च मांसं च शरीरजं च क्लेदं कफो बस्तिगतं प्रदूष्य।  
करोति मेहान् समुदीर्णमुष्णैस्तानेव पित्तं परिदूष्य चापि॥  
क्षीणेषु दोषेष्ववकृष्य बस्तौ धातून् प्रमेहाननिलः करोति।  
दोषो हि बस्तिं समुपेत्य मूत्रं सन्दूष्य मेहाञ्जनयेद्यथास्वम्॥

### Diagnosis

The diagnosis of diabetes mellitus in asymptomatic patients should never be made on the basis of a single abnormal blood glucose value. If a diagnosis of diabetes is made, the physician must feel confident that the diagnosis is fully established since the consequences for the individual are considerable and lifelong<sup>12a</sup>. The diagnosis of diabetes mellitus include, urine sugar, blood sugar, glucose tolerance test, renal threshold of

glucose, diminished glucose tolerance, increased glucose tolerance, renal glycosuria, oral glucose tolerance test.

The 2021 American Diabetes Association (ADA) clinical practice recommendations for the diagnosis of DM are consistent with the 2020 guidelines. The table below summarizes the criteria for hyperglycemia<sup>12b</sup>.

Table no. 2. Diagnostic criteria of Diabetes Mellitus according to ADA

Result	Fasting Plasma Glucose (FPG)	HbA1C	Oral Glucose Tolerance Test (OGTT)
Normal	less than 100 mg/dl	less than 5.7%	less than 140 mg/dl
Pre-diabetes	100 mg/dl to 125 mg/dl	5.7% to 6.4%	140 to 199 mg/dl
Diabetes	126 mg/dl or higher	6.5% or higher	200 mg/dl or higher

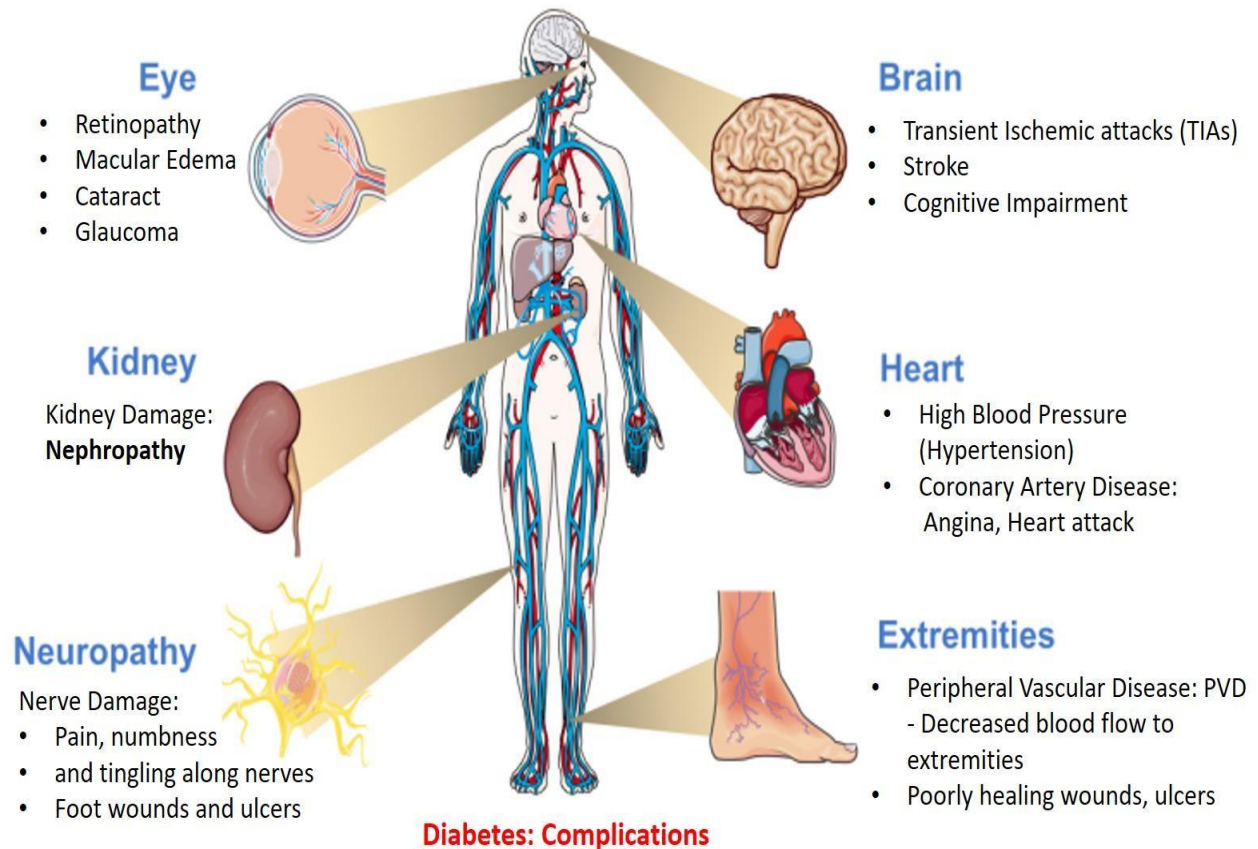
### Sign and Symptoms of Diabetes Mellitus

Some Common Sign and Symptoms In diabetes mellitus, cells fails to metabolized glucose in the normal manner, effectively become starved. The classical symptoms diabetes mellitus below - Weight loss, Polyuria (frequent urination), Polydipsia (increased thirst), Polyphagia (increased hunger) Glycosuria.

According to *Ayurveda Prabhuta Mutrata* (Quantity), *Avila Mutrata*<sup>13</sup> (Turbidity of urine increase due to Glucose, fatty acids, protein etc.) and *Medodushtilakshanas* are the main symptoms of *Prameha* and other symptoms like *Malinadanta*, *Hasta padadaha* (Burning sensation of hands and feet) , *Dehachikkanata* (Excess glossy/ oily skin), *Trishna* (Excessive thirst) *Madhuryamasya* (Feeling sweetness in mouth), *Madhusamanavarna* (Urine having colour of honey), *Sweda* (Excess perspiration), *Angagandha* (Bad body odour), *Shithilangata* (Flaccidity of muscles), *Shayana asana Swapnasukha* (Desire for sedentary life), *Shitapriyatwa* (Desire for cold food & environment), *Gala talushosha* (Dryness of palate & throat)<sup>14,15</sup>.



The long term effect of diabetes mellitus which includes progressive development of the specific complications of retinopathy with potential blindness, nephropathy that may lead to renal failure, and neuropathy with risk of foot ulcer, Charcot joint and features of autonomic dysfunctions and sexual dysfunction . People with diabetes are at increases risk of diseases.



### Classification of Pramehas

A) Prameha is classified aetiologically in to Sahaja (Hereditary) and Apathyanimittaja.

- i. **Sahaja**<sup>16</sup> means due to *Matapitabheejadoshakruit* (without having faulty lifestyle Chromosomal defect from parents). **Acharya Charaka** also narrated **Jataprmeha** which is a **Kulaja Vikara** due to **Bijadosha**<sup>17</sup>.
- ii. **Apathya Nimmitaj**<sup>16</sup>: - This is the type of disease occurring at an elder age and is due dietetic predominantly constituted by *Madhura and SnigdhaDravyas*, *sedentary life style* or due stress. Various etiological factors which increase *Kapha, Meda and Mootra*.

B) According to physical management

- i. **SantarpanaNimittaj** :-Santarpana means eating the food until the one fulfilled his hunger. The variant occurs due indulgence of heavy food, sedentary life style relived of tensions and worries. It is quite similar to that of the *ApathyaNimittaj* type or relating theobese diabetic.
- ii. **AsantarpanaNimittaj**:-Asantarpana means eating less and deviation in daily regimen (*ApathyaVihar*) that declines the *Doshas* and increase *Vata*and relating to lean diabetic.

C) According to *Doshaj*these Pramehasare classified as twenty types :

- i. *Vatajaprmehas* – There are totally four *vatajaprmehas*.
- ii. *Pittajaprmehas* – There are totally six *pittajaprmehas*.

iii. *Kaphajapramehas* – There are totally ten *kaphaja pramehas*<sup>18</sup>.

**D) Samhanana** (body constitution)- *Krishha (Durbal), Sthool (Balwana)*<sup>19</sup>

### Prognosis

*Charaka* describes the prognosis in three categories

- 1) **Sadhya – Curable:** Patients who have diagnosed early in the onset, those who are *sthoola* (obese) and the origin of their disease in *apathyaja*.
- 2) **Yapya – Palliable :** *Pittajaprameha* and certain types of *kaphajapramehas* are however helpscontrol with treatment (palliative management).
- 3) **Asadhya – Incurable:** *Vatajadescribes* the incurable version of *prameha*and inheriteddiabetes, a *krishha*(lean) patinet who is suffering with *Sahajaveriety*<sup>18</sup>.

### Treatment

According to Ayurveda, the line of treatment of *prameha* is strictly on individual's constitution. It is based on an entire change in the lifestyle of the person, along with medication and diet, the patient is also advised to lead a healthy lifestyle and live an active life. Even mental aspects of the disease are stressed. The principles of treatment in a diabetic patient may be classified as under There are two types of diabetics: 1. *Sthulya* (Obese) 2. *Krusha* (Asthenic).<sup>19</sup>

**A) In Sthulya (Obese – स्थूलप्रमेह)** - The treatment must be mainly based on proper utilization of excess fat i.e. he should be give<sup>19</sup>:

- a) Shodhana** (purification process) - Cleansing therapies – *Vamana* – (induction of emesis), *Virechana* (induction of purgation), *Basti* (applicatin of medicine through the anal route – in specific conditions)
- b) Apatarpana** - Reduction in body weight by way of diet control, Fasting, or drugs, *Vyayama* (Physical exercise), etc.

**B) In Krusha** (For Lean patient - कृशप्रमेह) Asthenic type the treatment should be mainly based on the line of increasing stamina and vitality by way of tonics (*Brumhana*) diet, drugs etc., and the patient should never be given excessive *Langhana or Apatarpana* i.e. he should not be starved. A diabetic and an obese person generally suffer from excessive appetite and thirst and so some type of nutrition should always be given to them.

### Diet management in Diabetes mellitus

The role of *ahara* and *vihara* are equally or even more important in diabetes to control blood sugar level as well as to prevent complications of this disease. In all classics, *aharadravyas* are described in detail and they cover all the food groups are: -

- ❖ *Pathya* is having a key role in the management of *Madhumeha*.
- ❖ Even in modern science also Diet & Exercise are included in diabetes management. Sobefore stepping to manage we have to consider for the *Pathya-Apathya*.
- ❖ *Pathya* and *Apathya* *Aharas* and *Viharas* according to different Ayurvedic classics are asfollows

### Pathya

1. **Cereals:** *Yava*<sup>20</sup> (*Hordeumvulgare* - Barley) are the best, different preparations of food, prepared from Barley can be given e.g. *Mantha*, *Odana*, *Appopa*, bread, *Roti* etc. This is the subject of pharmaceuticals

and food stuffs. So the method of preparations of barley is not dealt with here. Wheat (Godooma) can also be given. Rice: - Ayurveda prescribed old rice (puranashali), as one of the cereals, which can be prescribed to the diabetic patients.

2. **Pulses:** *Mudga* (VignaradiataGreengram), *Chanaka* (Cicerarietinum Linn. – Bengal gram), *Kulaththa* (Dolichosbiflorus), *Adhaki* (Cajanuscajan - Pigeon pea) etc, can be taken<sup>21,22</sup>.
3. **Vegetables:** All types of bitter vegetables (*Tiktashaka*) e.g. *Karela*(Momordicacharantia - Bitter gourd), *Methi* (Trigonellafoenum-graecum - Fenugreek), *Patola* (Vietnamese luffa, Vietnamese gourd, or Chinese okra), *Rasona* (Allium sativum Linn. – Garlic), *Udumbara* (Ficusracemosa - Cluster Fig Tree, Indian Fig Tree or Goolar (Gular) Fig)<sup>21,22</sup> etc.
4. **Fruits:** *Jambu* (Syzygiumcuini - Black berry), *Amalaki* (Phyllanthusemblica - Nepalese/Indian gooseberry, or *Dhatrik* (in Maithili) or *Amla*, *Kapitta* (Limoniaacidissima - Wood Apple, Elephant Apple, Monkey Fruit or Curd Fruit ) , *Talaphala* (Borassusflabellifer - the Asian Palmyra palm, Toddy palm, Sugar palm, or Cambodian palm), *Kharjura* (Phoenix sylvestris –Date Sugar Palm), *Kamala* (Nelumbonucifera Indian lotus, sacred lotus, bean of India, or simply lotus,), *Utpala* (NymphoeaStellata)<sup>21</sup> etc., can be allowed to take.
5. **Seeds:** *Kamala*, *Utpala* seeds can be allowed to take.
6. **Flesh:** *Harinamamsa* (Deer flesh), *Shashakamamsa* (Rabbit), birds like *Kapotha*, *Titira* etc., can be taken<sup>21,22</sup>.
7. **Liquor:** Old *sura* (old wine) may be given.
8. **Oils:** *Sarshapataila*(Mustard oil) is best. *Ingudi* (Balanitisaegyptiaca) *Ghritha* may be used in *pitthaja prameha*<sup>21,22</sup>.

But according to Ayurveda one should start with light diet (*laghubhaksha*, *laghuahara*) and then gradually increase the quantity of food. It is a rule that one should keep complete attention on the condition of Agni i.e. digestion. Diabetes being a disease of deranged metabolism, special attention should be kept on the condition of digestion and metabolism.

### Apathya

- (a) **Aahara:** Jala, Milk, Ghee, Oils, Curd, Sugar, Different types of rice preparations, *anupa*, *gramya* and *audakamamsa*, *Ikshurasa*, *Pishtanna*, *Navanna*.
- (b) **Vihara:** *Eksthana asana*, *Divaswapa*, *Dhoompana*, *Sweda*, *Raktamoksha*, *Mutravegadharana*.

### Viharas (Exercises)

Hard exercises are prescribed for diabetics and obese persons. This is meant for proper utilization of the fat and consumes the glucose in the body. The methods can be changed in the present times according to the habitat (Desha) and time (kala). But the exercises are very necessary. Some of the hard, productive exercises prescribed by Shushruta are as under:- 1. *Vyayarma* (exercises) (2) *Niyuddha* (fighting) - (3) *Kreeda* (games) (4) *Gajacharya*, *turagacharya*, *rathacharya*, *padacharya* to ride an elephant, horse, cart riding and walking etc,. Over and above mentioned heavy exercises, there are other exercises according to the financial position and also according to their community. They are: 1. For poor class, the diabetic should walk about 100 miles, bare footed, not staying more than one night in the settle place, should eat only the things available by begging and keeping restraint on his sense organs (adopt the life style of Muni/Sage).

In short for diabetics exercise serves the purposes of (1) Utilizing the fat and (2) Metabolizing sugar fat and carbohydrates, and also proteins. In the present day civilization , when these types of exercise are not possible, one should regularly play some out- door games, do some productive work, or the best is different type yogic exercises. 4. Yoga improves all sorts of metabolism in the body. So diabetics should perform different types of yoga. Yoga will definitely help diabetes mellitus. Yoga now-a-days has attracted the attention of Western people.

## Drugs

As regards drugs, there are so many drugs and formularies but the main drugs are either bitter (Tikta) or astringent (kashaya) in taste. They improve the fat and carbohydrate metabolism. Some of the medicines are given below; The drug of choice is (1) Shilajatu (2) Guggulu and (3) Haritaki (myrobalan) and Amalaki. For obese persons Guggulu may also be used as Guggulu has been proved as hypo-cholesterimic drug.

## Single Formulations

1. *Guduchiswarasa* (*Tinosporacardifolia*) – 10ml twice a day with honey (A.H.Ci 12/6)
2. *AmalakiCurna* (*Phyllanthusemblica*) – 6 gm twice a day with honey (A.H.Ut. 40/48)
3. *Karavellaka Phala Curna* (*Momordiacharantia*) – 3 gm twice a day with water (D. V. P. V. Sharma. Voll.II. page – 685)

## COMPOUND PREPARATIONS

1. **Swarasa** : *Amalaki, Haridra, Nimbapatra, Bilwapatra, Guduchi*
2. **Kwatha**: *Vidangadi, Phalatrikadi, Mustadi, Manjishthadi, Pathadi, Darvi, Surahwa, Triphala, Musta*
3. **Churna** : *Triphaladi, Mustadi, Gokshuradi, Arkadi, madhumehari*
4. **Gutika**: *Chandraprabha, Indravati, Pramehantak Vati*
5. **Gugglu** : *Gokshuradi Guggul*
6. **Rasa**- *Basatkushmakar ras*

## Conclusion

Ayurveda does not regard diabetes mellitus as a disease that can be treated by mere medicine or by a dietary regimen. Though it is a *yapya* (not totally curable / difficult to cure) disease, the prolonged use of the above treatment procedure will not only generate the person free from Diabetes Mellitus but protect to live a long life (*deerghajeevanam*), healthy (*sukhayu*) and will be useful to the society (*hitayu*).

## Ideal Prescription

1. Madhumehari Yoga- 125mg + Vang bhasma-250 mg + Muktaashukti Pishti-250 mg with milkBD/BF
2. Chandraprabha vati-2 tab./BD/AF With water
3. Phalatrikadi kwath 10-10 ml/bd/empty stomach
4. Panchtikta Panchprashritiki Basti daily for 15 days

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## आयुर्वेद को कमतर न आंके

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आयुर्वेद ज्ञान का वह भण्डार है जिसका कोई सानी नहीं है। जहां पूरे विश्व के चिकित्सक मौत को जीतने के उपाय ढूँढने में व्यस्त हैं वहां आयुर्वेद, चिकित्सा के साथ साथ जीवन किस प्रकार जिया जाए उसकी शिक्षा भी देता है। चरक ने कहा है कि हितकर आहार करने वाला व इन्द्रियों पर संयम रखने वाला व्यक्ति छत्तीस हजार रात्रि जीवित रहता है।

### बिना प्रयोगशाला परीक्षण के दे दिया रोगों का ज्ञान

जिस समय प्रयोगशालीय परीक्षण जैसे शब्दों का जन्म भी नहीं हुआ था, उस समय आयुर्वेद के आचार्यों ने खून की कमी के लिए लोह योगों का निर्देश दे दिया था। साथ में यह भी स्पष्ट कर दिया कि खून की कमी में लोह से श्रेष्ठ द्रव्य कोई नहीं है। जो विज्ञान डायबिटीज रोग को बिना प्रयोगशाला के निदान कर उसके लिए चिकित्सा के निर्देश सुनिश्चित कर दे उसकी गुणवत्ता स्वःप्रमाणित है। हजारों वर्ष से प्रचलित इस रोग की असाध्यता अभी भी बनी हुई है।

### रोगों की चिकित्सा में सफल निर्देश

इसके अतिरिक्त जो विभिन्न रोगों में जो चिकित्सा की जानकारी मिलती है वह अपने आप में अद्वितीय है। बुखार होने पर गरम पानी का प्रयोग, उदर रोग होने पर ऊंटनी के दूध का प्रयोग, उससे उत्पन्न शरीर की दुर्बलता में गाय के दूध का प्रयोग, बुद्धि बढ़ाने में गाय के दूध का प्रयोग, नींद लाने में भैस के दूध का प्रयोग, यक्ष्मा होने पर बकरी के दूध का प्रयोग. इन सबकी जानकारी आयुर्वेद अपने अंतस में संजोए हुए है। तैल घी और पानी से बनी सब्जियाँ स्वाद और हितकर होती हैं लेकिन यह भी कहा गया है कि इनको पुनः गर्म करने पर विष के समान हो जाती हैं।

### आयुर्वेद के सिद्धान्तों ने जब नोबल पुरस्कार दिलवाए

ऊबड़ खाबड़ रास्तों पर वाहन में जाने से किडनी की पथरी टूट कर निकल जाती है— जिस सिद्धान्त के अनावरण करने पर नोबल पुरस्कार भी मिला है का वर्णन हजारों वर्ष पहले लिखी चरक संहिता में मिलता है। खान पान, स्नान, सोना, जागना शारीरिक क्रियाएँ आदि एक निश्चित समय पर ही होनी चाहिए। आयुर्वेद में वर्णित इन्हीं सिद्धान्तों को अनुसंधान का नाम देकर भारत के बाहर नोबल पुरस्कार भी प्राप्त कर लिया।

### एक ही औषध के विभिन्न परिणाम

औषध के विभिन्न विभिन्न प्रयोग से अलग अलग परिणाम एक ही द्रव्य अलग समय पर लेने से अलग अलग प्रभाव दिखाते हैं। त्रिफला सुबह जल के साथ खाली पेट लेने से मोटापा कम करता है और रात को शहद के साथ लेने से आंखों के लिये हितकर होता है। इसी तरह अन्न को जब तैल के साथ पकाकर लिया जाता है तो वह आंखों के लिए अहितकर व दूध के साथ पकाकर लेने से वह हितकर हो जाता है।

## रोगों की गम्भीरता का ज्ञान

प्राचीन ऋषि रोगों के भयंकर स्वरूप से परिचित थे। पथरी के रोग को यमराज के समान कहा गया है। सन्निपातज रोग अर्थात् जिस रोग में तीनो दोषों का संयोग हो उसकी चिकित्सा करना पत्थर से समुद्र को पार करना व मृत्यु के साथ युद्ध करने के समान कही गयी है। मिर्गी के रोगी को जल, अग्नि, वृक्ष, पर्वत एवं विषम स्थानों से सदा बचाने का निर्देश दिया गया है, क्योंकि वहां उनके जीवन के लिये संकट हो सकता है।

## गर्भावस्था में ध्यान देने योग्य

गर्भावस्था की देखभाल के महत्व की जानकारी है। गर्भवती के उपचार की देखभाल के महत्व को दर्शाते हुए कहा है कि हुए कहा है कि जिस तरह तैल से भरे हुये पात्र को बिना हिलाये ले जाया जाता है उसी तरह की सावधानी गर्भवती स्त्री के साथ बरतनी चाहिए। बच्चे के पैदा होते ही उसके लक्षणों को देखकर उसकी दीर्घायु का ज्ञान कर देना इस चिकित्सा पद्धति की विशेषता है।

## आयु के प्रत्येक दशक में होता है परिवर्तन

मनुष्य जब पैदा होता है तो आयु के प्रभाव के कारण, व्यक्ति के हर दशक में किसी एक जैविक गुण का ह्रास होता है। प्रथम दस वर्ष के अन्त में बाल्यावस्था अर्थात् चंचलता का ह्रास हो जाता है। दूसरे दशक के अन्त तक व्यक्ति की वृद्धि जिस स्तर तक होनी होती है, हो जाती है। उसके उपरान्त वृद्धि को पूर्ण विराम लग जाता है। व्यक्ति की छवि तीस वर्ष तक सबसे उत्तम रहती है उसके बाद उसकी छवि कम होनी शुरु हो जाती है। किसी भी विषय को धारण करने की शक्ति जितनी चालीस वर्ष तक रहती है उसके उपरान्त उतनी नहीं रहती। चालीस वर्ष से धारणा शक्ति का ह्रास होना शुरु हो जाता है। त्वचा कि जो सुन्दरता पचास वर्ष तक बनी रहती है। पचास वर्ष की उम्र पूरी होते ही त्वचा कि सुंदरता में कमी आ जाती है। साठ वर्ष की आयु के बाद दृष्टि का ह्रास हो जाता है। संतान पैदा करने की क्षमता सत्तर वर्ष की आयु के बाद नहीं रहती है। शार्गंधर संहिता अनुसार सौ वर्ष की जिन्दगी के अन्तिम तीन दशक में क्रमश विक्रम, बुद्धि का क्षय व कर्मेन्द्रियों का ह्रास होता है। कुछ अपवादों को छोड़ दिया जाए तो प्रत्येक मनुष्य इस अनुसार ही अपने जिन्दगी को जीता है। खान पान में कोई गड़बड़ होने पर आयु सौ वर्ष की स्वस्थ आयु प्राप्त: करना कठिन हो जाती है।

## आपातकालीन अवस्था का ज्ञान

आयुर्वेद में आत्ययिक अवस्था का ज्ञान है। विष का सेवन करने वाले को उस तरह बचाने का प्रयास करना चाहिए जिस प्रकार जलते हुए घर को बचाने का प्रयास किया जाता है। हिक्का एवं श्वास रोग सांप के विष की तरह तुरन्त फैलते हैं।

## विश के प्रभाव से बचने का उपाय

स्वर्ण सेवन करने वाले को विष का दुष्प्रभाव नहीं होता, उसको स्पष्ट करने के लिए कहा गया है कि जिस तरह कमल के पत्तों पर जल नहीं ठहर पाता उसी तरह स्वर्ण सेवन किए हुए व्यक्तियों में विष का प्रभाव ठहर नहीं पाता ।

## नीम हकीम – खतरे जान

नीम हकीम के बारे में आयुर्वेद में स्पष्ट जानकारी है। कहा गया है कि राजा की अकुशलता के कारण ही नीम हकीम समाज में पनपते हैं। जिस तरह घुण का कीड़ा लकड़ी पर चलते हुये वर्णमाला के किसी शब्द की शक्ल बना देता है तो यह एक मात्र संयोग ही है। उसी तरह अगर किसी नीम हकीम से कोई रोगी ठीक हो जाता है तो यह भी एकमात्र संयोग ही है। नीम हकीम से चिकित्सा करवाने की अपेक्षा तांबे का विष पी लेना अच्छा है। इन्द्र का वज्र अगर किसी रोगी पर गिर जाए तो व्यक्ति के बचने की सम्भावना हो सकती है। लेकिन नीम हकीम से चिकित्सा करवाने से कोई बच नहीं सकता।

## काल का प्रभाव

आयुर्वेद ने स्पष्ट किया है कि नया अन्न रोगों का कारण होता है। दालें, चावल, गेहूं सभी धान्य एक वर्ष पुराने ही लेने चाहिए। दो वर्ष से अधिक धान्य भी शक्तिहीन हो जाते हैं। पेठा अगर बेल से खुद तोड़ लिया जाए तो वह वात और पित्त का नाश करता है जबकि अपने आप पक कर टूटने से वह पित्त दोष की वृद्धि करता है और वात व कफ को जीतता है। गुड़ पुराना होने पर बवासीर रोग में हितकर होता है। शुद्ध घी पुराना होने पर मानसिक रोगों का नाश करता है।

## आयुर्वेद के सिद्धान्त अपरिवर्तनशील हैं

आयुर्वेद के साथ सबसे बड़ी विशेषता यह है कि इसके सिद्धान्त कभी बदलते नहीं हैं। च्यवनप्राश आज से हजारों वर्ष पूर्व व्याधिक्रमता को बढ़ाने वाला था, आज भी है और आने वाले समय में भी रहेगा। इसका कोई अन्य विकल्प नहीं है। इसी तरह आमला और हल्दी का मिश्रण डायबिटीज की प्रारम्भिक अवस्था में लाभकर था, आज भी है और आने वाले समय में भी रहेगा। पिप्पली, सोंठ, काली मरिच आदि अग्नि का दीपन करती हैं और कास रोग में हितकर हैं।

आयुर्वेद में निद्रा के महत्व की जानकारी स्पष्ट है। सुख दुख, बल, दुर्बलता, ज्ञान व अज्ञान की निर्भरता नींद पर होती है। पूरी नींद लेने वाले को बल, सुख व ज्ञान की प्राप्ति होती है। भल्लातक सखिया जैसे विषों का शोधन करने के पश्चात उनके चिकित्सकीय प्रयोग का ज्ञान था।

कोरोनाकाल में जो सार निकल कर आया है उसका उल्लेख आयुर्वेद में पहले से ही उपलब्ध है। कम आवश्यकताओं के साथ सादगी भरा जीवन यापन करने का निर्देश आयुर्वेद में पहले से ही उपलब्ध है। असीम सम्भावनाओं से भरी इस पद्धति के उचित दोहन की आवश्यकता है।

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## Harmonizing Health: Ayurvedic Insights into Hemant Ritucharya - A Review

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### Abstract

The review article, "Harmonizing Health: Ayurvedic Insights into *Hemant Ritucharya*," delves into Ayurveda's ancient wisdom regarding proactive health preservation through meticulous lifestyle and dietary regimens. Ayurveda, with its fundamental principles of "*Swasthyashya Swasthya Rakshanam*" (preserving well-being) and "*Ritucharya*" (seasonal regimen), advocates adapting to the changing environment. The focus of this review is on *Hemant Ritu* (early winter), spanning from mid-November to mid-January. During this phase, the Earth undergoes a cooling process, and nature exhibits various transformations. Ayurveda recommends a diet rich in sweet, sour, salty, and oily foods, along with therapeutic practices like oil massage and sun exposure. Modern perspectives align with Ayurvedic recommendations, emphasizing season-appropriate diets rich in fresh, organic, and easily digestible foods. Understanding and implementing "*Ritucharya*" can prevent lifestyle-related disorders and promote longevity. Public awareness is vital in disseminating this ancient wisdom and addressing seasonal health issues. Ayurveda's timeless insights illuminate the dynamic interplay between physiology and seasons, making "*Ritucharya*" a key strategy for well-being in a changing world.

**Keywords:** Ritucharya, Ayurved, Hemant Ritu

### Introduction

Ayurveda, an ancient and venerable discipline, has consistently underscored the paramount importance of proactively preserving health and averting maladies by adhering to meticulous dietary and lifestyle regimens, as opposed to a reactive approach focused solely on treating and remedying ailments. At the core of *Ayurvedic* medical philosophy lies the fundamental principle of "*Swasthyashya Swasthya Rakshanam*," signifying the preservation of well-being among those who are already healthy, rather than the exclusive concentration on "*Aturashya Vikara Prashamanancha*," the amelioration of diseases in the afflicted.

To fulfill this pivotal objective, *Ayurveda* delineates two fundamental protocols: "*Dinacharya*" or the daily regimen, and "*Ritucharya*" or the seasonal regimen. "*Ritu*" conveys the notion of time, while "*Charya*" denotes the regimen to be rigorously followed [1]. The overarching purview of *Ritucharya* is to prescribe a regimen that is universally wholesome in terms of dietary choices and practices. It is, in essence, a harmonization of lifestyle and nutritional adjustments that respond adeptly to the vicissitudes of climatic conditions, including shifts in temperature, precipitation, and environmental dynamics.

As we transition from one season to another, the transformation within our environment becomes strikingly apparent. Nature manifests various changes in its biotic components, such as the blossoming of flora during spring and the shedding of leaves in autumn, the hibernation of numerous fauna as winter descends, and more. The human being, inextricably linked to this ecological tapestry, experiences a profound influence on the corporeal level. Remarkably, many exogenous and endogenous rhythms bear specific phase relationships, signifying their reciprocal interactions and synchronization. When the human body fails to adapt to the stressors resulting from seasonal idiosyncrasies, it may give rise to "*Dosha Vaishmya*," thereby rendering the body exquisitely vulnerable to an array of afflictions [2].

In light of the pivotal role that adaptability plays in the continuum of survival, it is paramount to possess a profound understanding of "*Ritucharya*" – the meticulous regimen tailored to distinct seasons.

Regrettably, a lack of awareness or disregard for suitable dietary compositions, clothing choices, and other seasonal protocols can perturb the delicate equilibrium of homeostasis, precipitating a spectrum of ailments, including but not limited to obesity, diabetes, hypertension, and cancer. Lifestyle-related disorders are the byproduct of an incongruous relationship between individuals and their environmental milieu. The onset of these insidious conditions manifests a delayed progression and poses a formidable therapeutic challenge [3].

Seasonal classification in Ayurveda entails the delineation of the annual cycle into two distinct phases, known as "Ayana" or solstices, which are contingent upon the directional movement of the sun. These phases are denoted as "Uttarayana", corresponding to the northern solstice, and "Dakshinayana", corresponding to the southern solstice. Each of these solstices comprises three distinct "Ritu's", a term derived from the Sanskrit word "Ritu", meaning "to go" [4]. In essence, the "Ritus" represent the sequential and distinct modes through which nature manifests itself within specific temporal confines, thereby giving rise to the seasons.

A comprehensive year, as per Ayurvedic cosmology, encompasses six distinct seasons. These are "Shishira" (winter), "Vasanta" (spring), and "Grishma" (summer) during the Uttarayana period, and "Varsha" (monsoon), "Sharata" (autumn), and "Hemanta" (late autumn) during the Dakshinayana phase. It is noteworthy that the phenomenon of these seasonal transformations finds its predominant manifestation within the geographical confines of the Indian subcontinent, where Ayurveda originates and flourishes. Hemant ritu also known as Tushar ritu is the last Ritu of Dakshinayana phase. This review will detail about its properties and dos and don'ts during this time to prevent lifestyle disorders.

### **Properties of Hemant Ritu**

Properties of Hemanta Ritu, as delineated in Ayurvedic tradition, align with both the Hindu calendar, specifically the months of Margashirsha (Saha) and Pausha (Sahasya), and the English calendar, spanning from November 15th to January 15th. This transitional period commences with November, characterized by a gradual decline in temperature, marking the advent of Hemanta Ritu, or the early winter season.

In accordance with Ayurveda, Hemanta Ritu commences with Sharad Purnima and extends for a duration of two months. During this phase, the Earth undergoes a cooling process, precipitating a resurgence of vital energy within us [5]. The atmosphere becomes cloaked in a thick mist, often shrouded in snowfall, while the sun's brilliance is momentarily veiled. A brisk and chilling breeze emanates from the north, eliciting goosebumps. The natural world undergoes a transformation, with flora such as Lodra, Priyangu, and Punnaaaga adorning themselves with resplendent blossoms. The behavior of certain animals, like elephants, goats, buffaloes, horses, crows, and pigs, takes on an assertive demeanor [6].

As this season progresses, both natural and artificial water sources become veiled beneath substantial layers of snow and mist, rendering them inaccessible to the denizens of these realms, including fish and birds. Interestingly, the well water retains its warmth amidst the surrounding cold. Hemanta Ritu orchestrates an array of changes that contribute significantly to the augmentation of "Uttam Bala" or optimal strength within the human body.

Notably, the intensified chill in the environment entraps the body's innate heat, thereby invigorating the "Jatharagni" or digestive fire. This heightened digestive prowess enables the assimilation of food, regardless of its weightiness ("Guru Dravya") or volume ("Guru Matra"). Properly digested sustenance plays a pivotal role in nurturing all seven "Dhatus" within the body. Essentially, when the body fails to receive an adequate supply of "Guru Ahara" (heavy substances) as fuel, the digestive fire consumes the foremost "Rasadhatu," subsequently contributing to the derangement of "Vata Dosha" [7].

### **Diet regimen for Hemant ritu [8]**

The dietary regimen during this period should predominantly feature "Snigdha" (unctuous), "Madhura" (sweet), "Amla" (sour), and "Lavana" (salty) tastes as the primary constituents of nourishment. It is

advisable to consume meat derived from animals categorized as "*Aatimedasvi*" (fatty), "*Audaka*" (aquatic), and "*Anoopa*" (marshy). Additionally, one may partake in the consumption of meat from burrow-dwelling creatures and engage in the consumption of roasted meat from "*Prasaha*" animals, such as crows, followed by the ingestion of "*Madira*" (wine), "*Sidhu*" (fermented preparations), and "*Madhu*" (honey).

Incorporating dairy products from cows, such as curd and butter, along with sugarcane-derived items like jaggery, sugar, "*Vasa*" (fat), and new rice, into one's diet is recommended during this season. It is advisable to maintain a regimen of drinking lukewarm water consistently throughout the season. By diligently adhering to the aforementioned dietary guidelines, individuals may anticipate the preservation of their overall vitality and an enduring lifespan.

### **Vihar for Hemant Ritu [9]**

Practices during this period encompass the implementation of various therapeutic modalities:

- *Abhyanga* (Oil Massage): The application of medicated oils for massage is recommended as part of the therapeutic regimen.
- *Utsadana* (Ubtan): The use of herbal pastes, commonly referred to as "*Ubtan*," aids in promoting skin health and overall well-being.
- Oil Application on the Head: The topical application of oils to the scalp serves to nourish the hair and scalp, potentially offering therapeutic benefits.
- *Jentatka Sweda* (Sagni Sweda/Sudation): A specific form of sudation, "*Jentatka Sweda*," involves inducing perspiration through the application of heat. This practice may have therapeutic implications.
- *Atatpa-Sevana* (Sunlight Exposure): Exposure to sunlight, known as "*Atatpa-Sevana*," can offer potential health benefits during this season.

Additionally, practical measures to ensure comfort and well-being include:

- Wearing Heavy and Warm Clothing: To maintain optimal body temperature and comfort, individuals are encouraged to wear substantial and insulating clothing.
- Anointing the Body with *Agru*: The application of *Agru*, a specific medicinal substance, to the body, may provide therapeutic advantages during this season.

### **Contraindicated Dietary and Lifestyle Practices During Hemanta Ritu [9]**

- Dietary Factors that Aggravate *Vata Dosha*: Foods and beverages known to provoke *Vata Dosha* and those that are easily digestible should be avoided.
- Exposure to Intense Cold Waves: Prolonged exposure to severe cold waves should be minimized to prevent adverse health effects.
- Restricted Food Intake (*Pramita Ahara*): The consumption of limited quantities of food, referred to as "*Pramita Ahara*," is discouraged during this season.
- Avoidance of *Udmantha* (*Sattu*): The intake of *Udmantha*, a specific type of food preparation known as "*Sattu*," is contraindicated during *Hemanta Ritu* to maintain optimal health and well-being.

### **Modern Perspective of the Winter Season**

Nature has evolved a unique mechanism to uphold the health and longevity of individuals who adhere to the principles of well-being. Inhabitants residing in cold climates often favor a non-vegetarian diet, which aligns harmoniously with several compelling reasons. The scarcity of vegetables and plant-based foods in

frigid regions necessitates reliance on meat as a vital source of nutrition and heat production during the digestive process. Moreover, the cold environment fosters optimal digestion and nutrient absorption due to robust digestive capabilities. The climatic conditions in cold regions also facilitate the preservation of meat, rendering it a safer and more durable food source compared to hotter climates [10].

In contrast, regions characterized by warmer climates offer a diverse array of vegetables, fruits, herbs, and spices for sustenance. Vegetarian diets, which are generally easier to digest and produce less heat and fewer toxins during digestion, become preferable choices. Additionally, they provide ample dietary fiber, mitigating the risk of constipation, a condition exacerbated by fluid loss through perspiration in hot weather.

### **Concept of Dietary Patterns during the Winter Season [11]**

In response to the onset of cold weather, the body initiates a series of adaptive measures. These include the constriction of skin pores and superficial connective tissue to minimize heat loss. Consequently, heat is directed toward the body's core, particularly the stomach. This shift in heat distribution heightens the strength of "Agni" (digestive fire) during the winter months. However, it is crucial to note that if the bodily constitution exhibits an aggravated "Kapha" or "Vata" *Dosha*, "Agni" may decline, rendering individuals more susceptible to cold-related ailments, circulatory issues, joint discomfort, and negative emotional states.

Immunity-boosting dietary choices in winter revolve around fresh, organic, easily digestible, pure, and wholesome foods. These include an array of fresh vegetables, fruits, dried fruits, dairy products, nuts and oilseeds, whole grains, legumes, and clarified butter (ghee). Certain spices, possessing antimicrobial properties, fortify the body's defense against colds and infections. They additionally enhance the production of digestive enzymes, augment cellular metabolic activity, and ensure the complete assimilation of nutrients. Winter's seasonal preferences often lean towards richer foods that offer warmth alongside nourishment. It is during this period that individuals tend to gravitate towards vegetables that require more extended cultivation and have subterranean edible portions. These include carrots, potatoes, onions, garlic, radishes, yams, sweet potatoes, beets, and turnips.

- Carrots, rich in beta-carotene, serve as an excellent source of vitamin A and potent antioxidants.
- White radishes, onions, and garlic (both dry and spring varieties) abound in isothiocyanates and indoles, phytochemicals known for their cancer-preventive properties.
- Leafy greens such as methi (fenugreek), palak (spinach), and sarson (mustard greens) offer beta-carotene and vitamin C, bolstering immunity and protecting against diseases. Additional vegetables, including green beans and peas, are renowned for their high energy and protein content.
- Whole-grain cereals and pulses provide an essential source of energy and protein, aiding in combating the cold. These staples often form the basis of various traditional winter delicacies, such as "sheera," "halwa," "paak," and "ladoos." Makai (corn) and bajra (pearl millet) rotis are prized for their heat-generating properties.
- Fresh and dried fruits also play a significant role in winter nutrition. Papaya and pineapple are believed to impart warmth, while "amla" (Indian gooseberry), rich in vitamin C, bolsters immunity. Potatoes provide an essential source of energy, while dates, possessing warming qualities, serve as a nutrient-rich option. Dates are not only a good source of dietary fiber but also contain iron, magnesium, calcium, and vitamins (C and B3), making them an excellent energy source [12].
- Spices such as mustard, asafoetida (*Hing*), black pepper, fenugreek, *Ajwain*, and *Suva* (dill) seeds are warmly embraced during the winter months. Mustard, *Ajwain*, and *Suva* seeds serve as valuable remedies for winter-related coughs and flu, stimulating appetite, enhancing digestion, and improving blood circulation. *Methi*, whether consumed dry or in sprouted form, proves beneficial in addressing

bone and joint concerns commonly exacerbated during winter. Turmeric, particularly the fresh, light, and golden-yellow variety, is a potent immune booster with antimicrobial properties.

- Herbs and seeds also contribute to winter health. Basil (*Tulsi*) stands as a herb renowned for its protective qualities against colds and fever while strengthening immunity. Ginger, both fresh and dried, is esteemed for its warming properties. Sliced ginger with lime and salt often accompanies meals, and ginger can be added to teas, *Dals* (lentil dishes), and vegetables. Dry ginger powder, fashioned into small *Ladoos* (sweet treats) with jaggery and ghee, proves highly effective in combating winter chills.
- "*Til Ladoos*" (sesame seed sweets) and "*Til Chikki*" (sesame seed bars) are widely appreciated in Indian cuisine for their warming attributes. These seeds, rich in oil content, are frequently sprinkled on salads and dishes. Balancing protein and carbohydrate intake in one's diet helps maintain serotonin levels, a neurotransmitter associated with calmness, and mitigates the onset of hunger pangs resulting from low blood sugar.

## Conclusion

Ayurveda plays a pivotal role in imparting knowledge about individual body constitutions and advocates aligning one's lifestyle accordingly. It underscores the significant impact of environmental changes on our physical well-being, emphasizing the need for our bodies to adapt to these fluctuations. Failing to do so may lead to a state of "*Dosha Vaishamya*," where imbalances within the body and mind begin to manifest. These imbalances, if left unaddressed, can culminate in a spectrum of lifestyle disorders.

To preempt the emergence of these disorders, an invaluable approach is the comprehension and implementation of "*Ritucharya*." This ancient practice elucidates a set of dietary and behavioral regimens tailored to the distinct seasons. By assimilating and diligently adhering to these regimens, individuals can effectively realize their paramount goal of "*Swasthasya Rakshanam*" – the preservation of health. In doing so, they not only attain physical vitality but also cultivate radiant complexion and enhanced longevity, all while maintaining the delicate equilibrium of the body and mind.

Notably, Ayurveda not only outlines preventive measures but also provides insights into treatment modalities that account for seasonal influences. This indicates the depth of understanding possessed by our ancient sages and scholars, who recognized the dynamic interplay between physiological parameters and seasonal variations. Indeed, the seasons wield considerable influence, not only over the natural world but also within the human body itself.

According to Ayurveda, "*Ritucharya*," or the adherence to seasonal dietary regimens and lifestyle practices, serves as a crucial preventive strategy against diseases stemming from fluctuations in the "*Tridosha*" due to seasonal changes. To curtail the escalating prevalence of such seasonal maladies, it is imperative to foster public awareness regarding "*Ritucharya*." Collaborative efforts involving governmental initiatives and corporate wellness programs can play a pivotal role in achieving this goal, ultimately serving as a bulwark against the burgeoning tide of seasonal afflictions.

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## **Impact of Lifestyle on Liver Health & its Management**

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### **Abstract**

The liver is crucial for maintaining overall health and well-being, as it performs a wide range of vital functions that are essential for digestion, metabolism, detoxification, and immune response. Westernization of diets which involves increased intake of fast food and an unhealthy and sedentary lifestyle is the main reason for the development of Liver disease. A Sedentary lifestyle can contribute to the development of fatty liver disease. Fatty liver is one of the most common liver disorders worldwide. It's estimated to affect around 25% of the global population. It tends to be more common in Western countries with high rates of obesity, sedentary lifestyles, and metabolic syndrome. Fatty liver is closely associated with obesity and metabolic syndrome. Among individuals with obesity or metabolic syndrome, the prevalence of NAFLD is much higher. It's estimated that up to 70-90% of people with obesity and 50-70% of people with metabolic syndrome may have NAFLD. Fatty liver is often asymptomatic in its early stages, which means many people may have it without experiencing noticeable symptoms. Regular health check-ups and screenings can help identify the condition, especially in individuals with risk factors like obesity, diabetes, and sedentary lifestyles. Lifestyle changes, including improvements in diet, increased physical activity, and managing underlying conditions, can be effective in preventing and managing Liver disease.

### **Introduction**

Fatty liver, also known as hepatic steatosis, is a condition where excessive fat accumulates in the liver. It is often caused by factors such as obesity, high cholesterol, diabetes, or excessive alcohol consumption. If left untreated, it can lead to inflammation and scarring of the liver, which may impair its function over time. According to the World Health Organization (WHO), fatty liver disease is becoming increasingly prevalent worldwide. It is estimated that approximately 25% of the global population is affected by this condition. Fatty liver can be categorized into two types: alcoholic fatty liver disease (AFLD) and non-alcoholic fatty liver disease (NAFLD).

**Alcoholic Fatty Liver Disease (AFLD):** This type of fatty liver occurs due to excessive alcohol consumption. The liver is responsible for metabolizing alcohol, and over time, excessive alcohol intake can lead to the accumulation of fat in the liver cells. AFLD can progress to more severe liver conditions if alcohol consumption continues, such as alcoholic hepatitis or cirrhosis.

**Non-Alcoholic Fatty Liver Disease (NAFLD):** NAFLD is the term for fatty liver disease that is not caused by alcohol consumption. It is often associated with obesity, insulin resistance, diabetes, and high cholesterol levels. NAFLD can range from simple fatty liver, where fat accumulates in the liver but causes no inflammation, to non-alcoholic steatohepatitis (NASH), which involves inflammation and damage to liver cells. NASH can eventually progress to cirrhosis or liver cancer if left untreated.

### **Etiological Factors**

Fatty liver disease, specifically non-alcoholic fatty liver disease (NAFLD), is strongly influenced by certain lifestyle factors. These factors can contribute to the development of fatty liver and its potential complications. Here are lifestyle choices and habits that can produce fatty liver and its complications:

- **Dietary Habits:** High Sugar and Processed Foods: Consuming a diet rich in sugary beverages, processed foods, and excessive carbohydrates can lead to increased fat accumulation in the liver.
- **Excess Calories:** Overeating and consuming more calories than the body needs can contribute to obesity and, consequently, fatty liver disease.
- **Obesity:** Being overweight or obese is a major risk factor for NAFLD. Excess body fat, especially around the abdomen.
- **Poor Diet:** Consuming a diet high in saturated fats, trans fats, sugars, salt, and processed foods can lead to conditions like obesity, heart disease, type 2 diabetes, and certain cancers.
- **Lack of Physical Activity:** A sedentary lifestyle with insufficient exercise can increase the risk of obesity, cardiovascular diseases, osteoporosis etc.
- **Tobacco Use:** Smoking and tobacco products are linked to a wide range of diseases, including lung cancer, heart disease, stroke, and respiratory disorders.
- **Excessive Alcohol**

### Symptom of Liver disease

- Abdominal pain ( Right upper quadrant)
- Fatigue
- Malaise
- Nausea
- Vomiting
- Irregular bowel
- Swollen abdomen
- Itchy skin

### Diagnosis

#### Liver Function Tests:

- ALT (alanine transaminase)
- AST (aspartate transaminase)
- ALP (alkaline phosphatase)
- Bilirubin levels.
- Complete Blood Count (CBC): This can help identify anemia and other blood-related issues associated with liver disease
- **Imaging Studies: Ultrasound:** Ultrasound imaging can detect fatty infiltration in the liver. It's often used as an initial screening tool for NAFLD.
- **CT scan and MRI:** These imaging techniques provide more detailed images of the liver and can help evaluate liver structure and abnormalities.
- **Fibro Scan:** This specialized ultrasound-based test measures liver stiffness and can assess the degree of liver fibrosis (scarring).
- **Liver Biopsy:** In some cases, a liver biopsy may be recommended to assess liver tissue directly. A small sample of liver tissue is removed and examined under a microscope. This procedure is usually reserved for cases where the diagnosis is uncertain or advanced liver disease is suspected.
- **Fibrosis Blood Tests:** Non-invasive blood tests like FibroTest and ELF (Enhanced Liver Fibrosis) can provide an estimate of liver fibrosis without the need for a biopsy.
- **Imaging-Based Scoring Systems:** Various scoring systems, such as the NAFLD Fibrosis Score and FIB-4 Index, use a combination of blood test results and patient demographics to assess the likelihood of advanced fibrosis in NAFLD patients.
- **CT/MRI Elastography:** These imaging techniques measure liver stiffness and can provide information about liver fibrosis.

## Management

- ✓ **Limit Saturated and Trans Fats:** Minimize the consumption of foods high in saturated and trans fats, such as fried foods, processed snacks, and fatty cuts of meat. These fats can contribute to liver inflammation and fat accumulation.
- ✓ **Whole Foods:** Focus on consuming a variety of whole, minimally processed foods. These include fruits, vegetables, whole grains, lean proteins, nuts, and seeds. These foods are rich in nutrients and fibre, which can support overall health.
- **Balanced Macronutrients:** Carbohydrates: Choose complex carbohydrates like whole grains (brown rice, quinoa, whole wheat), legumes (beans, lentils), and starchy vegetables. Limit refined carbohydrates and sugary foods.
- **Proteins:** Include lean protein sources such as poultry, fish, tofu, legumes, and low-fat dairy. Protein is essential for muscle health and can help control appetite.
- **Fats:** opt for healthy fats from sources like avocados, nuts, seeds, and olive oil. Minimize saturated and trans fats found in fried and processed foods.
- ✓ **Reduce Added Sugars:** Avoid or limit foods and beverages high in added sugars, including sugary drinks, sweets, and desserts. Excess sugar intake can contribute to liver fat buildup.
- ✓ **Portion Control:** Be mindful of portion sizes to prevent overeating, which can lead to weight gain and exacerbate fatty liver disease.
- ✓ **Choose Whole Grains:** opt for whole grains like brown rice, quinoa, and whole wheat bread instead of refined grains. Whole grains provide more fibre and nutrients, which can support liver health. Increase Fiber Intake: Consume fibre-rich foods like fruits, vegetables, legumes, and whole grains. Fiber can help with digestion and regulate blood sugar levels
- **Madhuudaka** (2 teaspoons of honey with lukewarm water) – empty stomach early in the morning.
- **Fruits/salads**- preferably with breakfast.
- **Milk** (double-toned)- once or twice a day.
- **Munga Yusha** (*Munga daal* sprout cooked with vegetables like spinach, carrots, bottle guards etc.)- once a day as a main meal.
- **Yava mixed roti** – as required.
- Other like **Patola, Amalaki** – as required.
- ✓ **Limit Alcohol:** If you consume alcohol, consider reducing or eliminating it from your diet, as it can contribute to liver damage. Even small amounts of alcohol can be harmful to individuals with fatty liver disease.
- ✓ **Moderate Protein:** Include moderate amounts of lean protein sources like poultry, fish, tofu, and legumes in your diet. Protein is essential for muscle health and can help control appetite.
- ✓ **Stay Hydrated:** Drink plenty of water throughout the day to support overall health, including liver function.
- ✓ **Drugs act on liver-** *Daruharidra, Punarnava, Kakamachi, Apamarga, Kasni, Paarijata, Apamarga, Bhunimba, Kalmegha, Karvellaka etc.*
- ✓ **Exercise, yoga, and pranayama (breathing exercises) can be beneficial components of a holistic approach to managing fatty liver disorder (non-alcoholic fatty liver disease or NAFLD). Here are some specific recommendations:**
- ✓ **Aerobic Exercise:** Activities like brisk walking, jogging, swimming, and cycling can help you lose weight, improve insulin sensitivity, and reduce the accumulation of fat in the liver. Aim for at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity exercise per week, as recommended by health guidelines.
- ✓ **Yoga:** Yoga can improve overall fitness, reduce stress, and support liver health. Specific yoga poses that can be beneficial for NAFLD management include:
  - **Bhujangasana** (Cobra Pose): It can stretch the abdomen and improve flexibility.
  - **Trikonasana** (Triangle Pose): This twist helps stimulate the abdominal organs and improve digestion.

- **Dhanurasana** (Bow Pose): This pose massages the abdominal organs and can be beneficial for liver health. **Ardha Matsyendrasana** (Half Lord of the Fishes Pose): This twist can stimulate the liver and improve its function.
- **Pranayama** (Breathing Exercises): Deep breathing exercises can help reduce stress, which is a common contributor to fatty liver disease. Practices like *Anulom Vilom* (Alternate Nostril Breathing) and *Bhramari* (Bee Breath) can be calming and reduce stress levels.
- Regular pranayama practice can also improve lung function and oxygenate the body, which is essential for overall health.
- **Strength Training**: Incorporating strength training exercises into your routine can help increase muscle mass, improve metabolism, and aid in weight management.

### Conclusion

Lifestyle changes play a crucial role in preventing and managing. These changes include increasing physical activity, adopting a balanced and healthy diet, achieving and maintaining a healthy weight, and managing underlying health conditions. Adopting a healthy lifestyle that includes regular exercise, a balanced diet, and weight management is key to preventing and managing liver disease.

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## **Lifestyle Modification in Hypertension**

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### **Abstract**

Hypertension remains the greatest risk factor for stroke, coronary heart disease, heart failure and kidney failure. This is one of the 10 leading risk factors influencing the global burden of disease and is estimated to lead to over 7 million deaths each year, 13% of the total deaths worldwide. Fast-moving lifestyles, unearthly hours at work, addiction to alcohol and unhealthy meals are making more and more Indians fall prey to high blood pressure at a very young age. It should be managed with a combination of lifestyle modification and medication. The objective was to find out the level of understanding of hypertensive patients regarding lifestyle modifications, to find their level of application in their daily activities, and to study their effects on the management of hypertension. Lifestyle changes can have a favourable effect on the prevention and treatment of hypertension, with emphasis on alcohol and sodium intake, smoking cessation, physical activity level and dietary pattern. Physicians and Public Health Authorities should encourage positive lifestyle modifications.

**Keywords:** Hypertension, Lifestyle, Sodium intake, Physical activity, Public health

### **Introduction**

Hypertension is defined as a diastolic blood pressure of 90mmHg or greater, or a systolic blood pressure of 140mmHg or greater. High blood pressure is the greatest risk factor for cardiovascular diseases. Arterial hypertension is the most common cardiovascular disease and is a major public health problem in both developed and developing countries. It remains an extraordinarily common and important risk factor for cardiovascular and renal diseases, including stroke, coronary heart disease, heart failure, and kidney failure. This is one of the 10 leading risk factors influencing the global burden of disease and is estimated to lead to over 7 million deaths each year, about 13% of the total deaths worldwide. It is quite unfortunate that the number of patients with hypertension is increasing globally and lack of awareness, The management of hypertension is done with a combination of lifestyle modifications and medication. Essential hypertension, a grossly underestimated condition in rural communities, is likely to be an important public health problem due to changing sociocultural contexts and urban influence.

The prevalence of hypertension increased in the older age subjects and modest heterogeneity was observed among various European countries. The standard suggests that lifestyle changes are useful and effective to reduce blood pressure and global cardiovascular risk. Lifestyle modifications are of proven efficacy in lowering blood pressure in unmedicated patients with hypertension and are often recommended as the first step for treating hypertension. It is a critical component for preventing and treating hypertension. Recommended lifestyle modifications include weight control, Dietary Approaches to Stop Hypertension (DASH) diet, reduction of sodium consumption, moderation of alcohol consumption, and regular exercise. Lifestyle modifications are effective in improving hypertension control.

#### **a. Weight reduction**

Weight reduction of even as little as 4-5 kg has been found to reduce BP in a large proportion of overweight persons with hypertension.

**b. Physical activity**

Regular aerobic physical activity can promote weight loss, increase functional status and decrease the risk of CVD and all-cause mortality. A program of 30-45 minutes of brisk walking or swimming at least 3-4 times a week could lower SBP by 7-8 mm Hg.

**c. Salt intake**

Epidemiological evidence suggests an association between dietary salt intake and elevated Blood Pressure. The total daily intake of salt should be restricted to 6 gm, however in hot summer this may be relaxed. Patients should be advised to avoid added salt, processed foods, and salt-containing foods such as pickles, papads, chips, chutneys and preparations containing baking powder. In the Indian context, salt restriction is more important as Indian cooking involves a high usage of salt.

**d. Alcohol intake**

Excess alcohol intake causes a rise in Blood Pressure, induces resistance to anti-hypertensive therapy and also increases the risk of stroke.

**e. Diet**

Vegetarians have a lower BP compared to meat eaters. This is due to a higher intake of fruit, vegetables, fibers coupled with a lower intake of saturated fats, and not due to an absence of intake of meat protein. Intake of saturated fats is to be reduced since concomitant hyperlipidemia is often present in hypertensives. Regular fish consumption may enhance BP reduction in obese hypertensives. Adequate potassium intake from fresh fruits and vegetables may improve BP control in hypertensives. Caffeine intake increases BP acutely, but there is rapid development of tolerance to its presser effect. Epidemiological studies have not demonstrated a direct link between caffeine intake and high BP.

**f. Smoking**

Smoking is the single most powerful modifiable lifestyle factor for the prevention of major cardiovascular and non-cardiovascular diseases in hypertensive.

**g. The Dietary Approaches To Stop Hypertension (DASH)**

The Dietary Approaches to Stop Hypertension (DASH) is a dietary pattern promoted by the U.S-based National Heart, Lung and Blood Institute to prevent and control hypertension. The DASH diet is rich in fruits, vegetables, whole grains and low-fat dairy foods. It includes meat, fish, poultry, nuts and beans and is limited in sugar-sweetened foods and beverages, red meat and added fats. In addition to its effect on blood pressure, it is designed to be a well-balanced approach to eating for the general public. The DASH diet reduces systolic blood pressure by 6 mmHg and diastolic blood pressure by 3 mmHg in patients with high normal blood pressure. The DASH dietary pattern is adjusted based on daily caloric intake ranging from 1,600 to 3,100 dietary calories.

<b>Modification</b>	<b>Recommendation</b>	<b>Reduction</b>
Weight reduction	Maintain a BMI between 18.5 and 24.9	5-20 mm Hg/10-kg weight loss
DASH diet pattern	Consume a diet rich in fruits and vegetables, moderate in fat-free or low-fat dairy products, with reduced saturated fat and cholesterol	8-14 mm Hg

Physical activity and Exercise	Regular aerobic exercise >150 min/week	4-9 mm Hg
Reduced sodium/ Salt intake	Lower salt intake as much as possible (1.5 g/d of sodium or 3.8 g/d of sodium chloride)	2-8 mm Hg
Limit alcohol consumption	No more than 2 drinks/day for men; no more than 1 drink/day for women	2-4 mm Hg
Increase potassium	Increase intake to 4.7 g/day (level of DASH diet)	2-4 mm Hg

### Yoga & Meditation in Hypertension

Excessive mental, emotional and physical stress can worsen the symptoms of many chronic disorders, including hypertension. This is due to the cause of hormonal changes and other biochemical responses to stress. That can imbalance the nervous system and depress the healing ability of the body. Regular practice of integrated *Yoga* can promote the tranquillity of the mind and increase resistance to stress. This stress can be a causative factor of hypertension. A combination of relaxing postures (*Shavasana*, *Sukhasana*, *Dhanurasana*, *Makarasana* and *Vajrasanas*), breathing exercises (*Pranayama*) and meditation has given better results in hypertensives. Relaxation postures of the body reduce the activity of the Sympatho-Adrenal system, this helps in the reduction of catecholamine activities and gradually reduces the blood pressure.

#### Shamana Chikitsa

The following drugs (single/compound drugs) are commonly used for prevention and control of Hypertension.

#### A. Mutral Dravyas (Diuretic)

1. **Gokshura** contains nitrates and oils, which cause diuresis and due to its vata pitta shamak action, it can be used to reduce inflammation. It is a potent antioxidant, cardioprotective, and diuretic. Its bark is astringent, cardiac stimulant, tonic and lithotriptic (Indian meteria medica). It helps in reducing fluid volume overload from the body. Clinical studies show antihypertension, antidepressant and anxiolytic activities.
2. **Punarnava** shows diuretic action by increasing Renal Blood flow. Studies show its antihypertensive effects. Punarnava is having *Tridosha shamaka*, *Lekhniya*, *Mutrajanana*, *Shothhara* karma.

#### B. Vatashamak Dravyas (Anti-inflammatory)

1. **Eranda** contains flavonoid extract of root possess anti-inflammatory activity. It has ricinine which is a cardiac tonic and diuretic action. Eranda has *kaphavatashamaka*, *shothhara*, *vedanasthapaka*, *hridaya*, *mutravishodhana* karma.
2. **Vacha** Studies have shown its blood pressure lowering and vascular modulator effects. Vacha is having *Kaphavata shamaka*, *hridya*, *mutrala*, *lekhiya* karma.
3. **Rasna** has *Kaphavatashamaka*, *Shothhara*, *Vedanasthapaka*, *Aampachana* karma. The methanolic extract has anti-inflammatory and anti-arthritis action.

#### C. Medhya Dravyas (Brain tonic)

1. **Bramhi** (*Bacopa monnieri*) possesses cardiotonic and diuretic effect. It is also known to reduce anxiety and blood pressure.



2. ***Sarpghandha*** (*Rouvolfia serpentina*) – It has anti-adrenergic and antidepressant properties and it is a well-proven antihypertensive. Its main chemical constituent reserpine one of the 30 alkaloids present in *Sarpghandha* is used in treating hypertension. Reserpine works by controlling nerve impulses along the pathway that affects the heart and blood vessels, thereby lowering the blood volume. It depletes catecholamines and serotonin from the nerve.
3. ***Shankhapushpi*** (*Convolvulus pluricaulis*) causes a persistent fall in arterial blood pressure. In large doses, it produced a transient inhibitory effect on both the force and contraction of heart muscles. *Shankhapushpi* controls the production of stress hormones. Its ethanolic extract has been found to reduce cholesterol, triglycerides and phospholipids. Its stress-lowering effect adds to its antihypertensive action.

### **Conclusion**

This study revealed lifestyle modification practice is low among hypertensive patients. Lifestyle modification through changes in eating patterns, abstaining from alcohol, weight management, smoking cessation and regular physical activity forms part of important and effective treatment strategies for important and effective other indicated treatments, all hypertensive patients who need to control their blood pressure should be given advice and support to achieve and maintain lifestyle practices. Age, Duration of the hypertension diagnosis, educational status, average monthly income and co-morbidity were factors significantly associated with lifestyle modification practice.

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## Prevention and Management of Diabetes Mellitus as a Life-Style Disorder

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### Abstract

Ayurveda describes *Three-Upastambhah*, three pillars for a healthy life and they are *Aahar* (proper diet), *Nidra* (proper sleep), and *Brahmacharya* (celibacy). *Aahar* has been given prime importance since the *Vedic* Period. It is considered *Brahma* in *Upanishad*. Acharya *Kashyapa* gives it the name “*Mahabhaisajya*”. Lifestyle disorders originate due to Poor lifestyle which includes poor diet, poor eating habits, *Viruddhahara* (dietetic incompatibility), lack of exercise, Smoking, excess alcohol, poor sleep, stress due to heavy workload, and increased consumption of unhealthy food. According to WHO, four main types of lifestyle disorders are cardiovascular disease, Diabetes, Cancer, and Chronic respiratory diseases. These diseases are continuously increasing and are becoming the primary causes of death. Diabetes mellitus is a major health problem in the 21<sup>st</sup> century in the year 2000 India is one of the five countries which have the highest sufferers of diabetes mellitus, hence India is declared as the capital of diabetes’ now. In spite of advanced medical research, it is still a burning issue that 50% of diabetic patients remain undiagnosed. World Health Organization (WHO) intends India to have a 35 million diabetic population, which will be 57.2 million by the year 2025 & 79.4 million by the year 2030. It is the need of time to review the *Ayurveda* in order to apply measures in preventing the upcoming epidemic of lifestyle disorders which are preventable with changes in diet (*ahara*), lifestyle, and environment. *Ayurveda* is one of the most ancient sciences of life its holistic approach effectively describes many ways to prevent and manage lifestyle disorders.

**Keywords:** Lifestyle Disorder, Diabetes Mellitus, Aahara, Ayurveda, Healthy Life.

### Introduction

We are living in this digital and fast-acting world, which has speeded up our daily routine and has created a lot of adrenaline-pumping action. Atomization and mobiles are new add-on factors for inactive life which has slowed down metabolism. Lifestyle is a pattern of living that we follow, and lifestyle diseases are defined as those health illnesses that react to incorrect ways of leading a lifestyle.

The incidence of lifestyle diseases like Diabetes Mellitus, Dyslipidemia, Hypertension and Overweight/Obesity associated with Cardiovascular Diseases is on the rise. Diabetes is an independent risk factor for premature illness and mortality, mainly because of cardiovascular disease (CVD). With rapid economic development and increasing westernization of lifestyle in the past few decades, the prevalence of these diseases has reached alarming proportions among Indians in recent years.

According to the International Diabetes Federation (IDF), reports that in 2014, diabetes prevalence among adults between 20 and 79 years old reached 8.3%, with 77% of the global cases living in low- and middle-income countries. The diabetes prevalence is higher in urban than in rural populations, whereas the prevalence seems to be similar among men and women. Overall, China, India, and the United States have the largest numbers of diabetes cases, with 92, 62, and 24 million people affected, respectively. Because diabetes can be asymptomatic and remain undetected for long periods of time, around 46% of global diabetes cases are undiagnosed.

There is a similar condition in *Ayurveda*, in which a person passes honey-like (sweet) urine. And this is known as *Madhumeha*. *Madhumeha* is one among 20 types of *Prime* (urological disorder) described in various *Ayurvedic* classics viz. *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Sangraha*,

*Madhava Nidana*. All Causative factors (*nidan*) lead to an imbalance of *doshas*, causing *manda-agni* and the formation of *amadosh* which increases *kleda*, and also leads to *margavarana*. Aggravated *vata* brings *kleda* and *oja* to the *basti* and ultimately produces profuse and turbid urination. This clinical presentation is termed as *Madhumeha* in *Ayurveda*. The holistic approach of *Ayurveda*, treating the patient as a whole, meaning intervention targeted toward complete physical, psychological, and spiritual well-being makes this science a wonderful option in lifestyle disorders.

Basically, a particular lifestyle of a person is a cumulative product of his/her physical capacity coordinated with psychological functioning, displayed in the form of habits, behaviour, dietary and living patterns based on his own training sought from childhood, and mimics he gained from his immediate companions including parents, siblings, peers, etc. Thus, it involves purely psychological and innate control over physical and sensory activities. When this initiation, control, and coordination are disturbed, it leads to the derangement of lifestyle and results in any lifestyle disorder. *Ayurveda* provides an ultimate solution in the form of healthy lifestyle approaches, proper dietary management, detoxification, and rejuvenation to get rid of various lifestyle disorders. *Ayurveda* offers various procedures to manage lifestyle disorders such as *Dincharya* (daily regimen), *Ritucharya* (seasonal regimen), *Panchakarma*, *Achar Rasayana* and rejuvenation therapies. *Ayurveda* recognizes three basic forms of energy or functional principles in our body. These are *Vata*, *Pitta* and *Kapha*, which are also known as the *Tridoshas*. These three bio-elemental substances are found throughout the body of human beings which is responsible for maintaining and balancing human health.

#### Causes

आस्यासुखं स्वप्नसुखं दधीनि ग्राम्यौदकानूपरसाः पयांसि।  
नवान्नपानं गुडवैकृतं च प्रमेहहेतुः कफकृच्च सर्वम् ॥ (च. चि. ६/४)

2. Improper eating habits - Consuming more meat, dairy products, tobacco, vegetable oils, sugar foods, sugar beverages, alcoholic beverages, fast food,
3. Inactiveness or improper exercises -
4. Bad habits [smoking, alcohol]
5. Lack of social approach
6. Wrong ergonomics
7. Psychological imbalance [depression] - unemployment, poor social environment, unsafe life, working conditions, stress, etc.

#### Prevention and Management of Diabetes mellitus (II) and Lifestyle Diseases

*Ayurveda* has two objectives; one is “*Swasthasyaswasthya Rakshnam*” which is the conservation of health. In the prevention of lifestyle disorders, *Ayurveda* has an individual and holistic approach. To live a healthy and disease-free life, an individual needs to make good food choices, get enough sleep, do regular physical exercises, manage stress, quit or stop smoking, stay hydrated, get regular medical check-ups, always laugh, and live stress-free. An individual can add green vegetables to his diet; drink much water and not sugary beverages, and do regular physical exercise to stay healthy.

The treatment modalities followed with inclusive utilization have a great effect on managing lifestyle disorders. *Ayurveda* describes *Dincharya*, *Ritucharya*, *Aahara*, and *Vihara* for the maintenance of a healthy life. It greatly emphasizes three important values that have been considered important factors for a healthy life. These three are *Aahara*, *Nidra*, and *Bhramhcharya* (control of desires).

- **Prakruti** - the biotype (constitution) of an individual is analyzed and lifestyle is guided on its basis to maintain balance in biological energies *Vata*, *Pitta* and *Kapha*.
- **Agni** – the gastric fire is another important concept in *Ayurveda*. It is the metabolic energy that is a transformative force which converts one form to another form. “*Roga sarve api mandegno*”

means all diseases start from the weakness of Agni that is it starts from the gut, that's why right agni gives the right nourishment to all tissues.

- **Dincharya/ Ritucharya:** *Ayurveda* advocates daily and seasonal regimens to preserve normal health. *Dincharya* means a daily regimen of life and *Ritucharya* means a regimen of life in different seasons. If an individual follows a proper daily and seasonal regimen, he may overcome the stress of seasonal variation and may not suffer from any lifestyle disorders.

#### **Ahara Kala (according to Ritu)**

- ✓ In seasons during which the nights are very long (*Hemanta* and *Shishira* dewy and winter respectively). Persons should partake in food in the morning itself, such food being predominant in qualities opposite of the qualities of the season;
- ✓ In seasons in which the days are very long (*Grishma* and *Pravrut* - summer and early rainy seasons respectively), food suitable to the season should be taken in the afternoon;
- ✓ In seasons in which both day and night are equal (*Sharada* and *Varsha*-autumn and spring seasons respectively), food should be partaken in the middle, dividing the day and night equally.
- **Ahara:** Diet and dietary regimen: An inappropriate and unbalanced diet is the main reason behind lifestyle disorders in the body. The ample growth and maintenance of the body mostly depend on an optimum and balanced diet. The selection of the diet should be simple, easily digestible, and optimum in quantity. Overeating and consumption of unbalanced diets / *tamasa* and *rajas* diets should be avoided because these diets can cause excess overload on the digestion system and metabolic process of the body.
- Food should not be taken (for the second time) within one *Yama* (three hours after the earlier meal), and should not starve for (more than) two *Yama* (six hours) because, during the period of first three hours, *Ahararasa* of the previous meal gets produced. A second meal hinders this process and after a lapse of six hours, there will be a decrease in the strength of the body. So, both these should not be done. The ideal time for a meal
  - ✓ (A) Lunch - Ideal time for lunch is between the first and second *Yama* i.e., between 3-6 hrs after sunrise (beginning of the day)
  - ✓ (B) Dinner - The ideal time for dinner is after the end of the first *Prahara* i.e., *Sandhya Kaal* 3 hrs after the beginning of the night (after sunset)
- **Nidra- Proper rest:** Good sleep is an important factor for the preservation of health. Today, in a hasty lifestyle, it has been noted that sleep is not given proper attention and consideration which leads to anxiety, depression, stress, and many other lifestyle disorders. An individual needs to get an adequate amount of sleep to avoid lifestyle disorders.
- **Controlling our desires:** It is the third most important component of a healthy life. If an individual balances all its desires such as physical desires, desire to eat junk food, processed food, packed food and fatty foods, and desire to take alcohol, tobacco, and drugs, then an individual can maintain a healthy life. An individual should practice self-control to avoid being bugged by negative desires.
- **Vihara:** It includes different types of do's and don'ts in our lifestyle. It suggests abstaining from the factors that cause mental agony. It includes *Vyayama* (Exercise) as it is also an important part of a daily regimen. Moderate physical exercise provides steadiness, lightness, and fortitude in the body. To promote physical and biological strength, it is essential to do regular physical activity daily.

#### **Some Ayurvedic ekal dravya for diabetes**

<i>Drug name</i>	<i>Botanical name</i>	<i>Drug name</i>	<i>Botanical name</i>
<i>Nimb</i>	<i>Azadirachta indica</i>	<i>Palasa</i>	<i>Butea monosperma</i>
<i>Vijaysaar</i>	<i>Pterocarpus marsupium</i>	<i>Gudmar</i>	<i>Gymnema sylvestre</i>
<i>Methi</i>	<i>Trigonella foenum-graecum</i>	<i>Curry Patta</i>	<i>Murraya koenigii</i>
<i>Karvellak</i>	<i>Momordica charantia</i>	<i>Chirata</i>	<i>Swertia chirayita</i>
<i>Jambu</i>	<i>Syzygium cumini</i>	<i>Hirda</i>	<i>Terminalia chebula</i>
<i>Mamajjak</i>	<i>Enicostemma littorale</i>	<i>Sadabahar</i>	<i>Vinca rosea</i>
<i>Bhallatak</i>	<i>Semecarpus anacardium</i>	<i>Bhumi Amla</i>	<i>Phyllanthus niruri</i>
<i>Babool</i>	<i>Vachellia nilotica</i>	<i>Daruharidra</i>	<i>Berberis aristata</i>
<i>Amalaki</i>	<i>Embilica officinalis</i>	<i>Shilajit</i>	<i>Asphaltum Punjabianum</i>

### Some Ayurvedic formulations

<b>Medicine name</b>	<b>Important contents</b>
<i>Basant kusumakar ras</i>	<i>Swarn, rajat, vang, abhrak etc</i>
<i>Vrahad vangeswar ras</i>	<i>Parad, gandhak, vanga, abhrak etc</i>
<i>BGR-34</i>	<i>Daruharidra, giloy, vijaysar, gudmar, manjeesth and fenugreek</i>
<i>Swarn makshik bhasm</i>	<i>Sudh Swarnmakshik bhasm</i>
<i>Chandraprabha vati</i>	<i>Shilajatu, triphala, trikatu</i>
<i>Shilajatwadi vati</i>	<i>Shilajatu, abhrak, Swarna, guggul</i>

### Diet Chart for Diabetes (*Madhumeha*)

<b>Time</b>	<b>Aahara</b>
7 am	1 cup of Tea (without sugar) or 1 to 2 glass of luke warm water
8am (breakfast)	1 bowl of Daliya with 100ml of milk or 1bowl of Sabji with 2 chapati
11am	1 bowl of Fruits- Apple or Amla 1 glass (100 ml) of Juice- Karela juice etc
1pm (lunch)	2 Chapatti + 1 bowl of Puranan chawal+1 bowl of Sabji + 1 bowl of Daal + 1 plate of Salad
4pm	50 to 60 gm of Roasted channa or Murmura chatt
9pm (dinner)	1 bowl of Soup + 1 bowl of Sabji + 2 Chapatti + 1 bowl of Daal + 1 plate of Salad
10pm	Glass (100ml) of Milk (without milk cream)

### ➤ **Dos (Pathya's)**

- Follow the meal times.
- **Grain-** *Yava* (barley-for chapatti and daliya), *Shashtika and Shali* (brown rice), *Kodrava* (kodo-millet), *Bajra* (millet), *Chana* (gram).
- **Pulses-** *Chanaka* (Bengal gram), *Adhaki* (toor dal), *Mudga* (green gram), *Kulattha* (horse gram).
- **Vegetables-** *Methika* (fenugreek), *Patola* (pointed gourd), *Karvellak*(bitter gourd), *Cabbage*, *Pumpkin*, *Lauki* (bottle gourd), *Sponge gourd* (*turai*).
- **Oil** used for cooking- mustard oil or linseed oil
- **Fruits-** *Jambu* (jamun), *Amalaki* (gooseberry), *Dadima* (pomegranate).
- **Beverages-** Warm water or Triphala water (only when a patient feels thirsty), drinking excessive water, cucumber, watermelon,

- Morning walk, jogging, swimming, evening walk, cycling, aerobic dance.
- **Yogasanas:** *Paschimottanasan, Halasan, Kapalbhati*
- **Pranayam:** *Kapalbhati, Anulom vilom*

➤ **Don'ts (Apathya)**

- Alcohol, *Asava* (fermented liquid), sugarcane/ sugarcane juice,
- *Gud* (jaggery), sugar, curd, food sour in taste, sweets, pickles,
- milkshakes, fruit juices, custard, cold drinks,
- non-veg diet, *Navaann* (grains of the same season),
- ice cream, packed juices,
- fried foods, refined oil, dosa, puri kachori, samosas, tikki,
- pasta, burger, pastries, patties, pizza, macaroni, chocolates
- *Urad ki daal* and excessive use of milk, oil, ghee and salt

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## Role of Wellness Sector in Uttarakhand; Opportunities and Challenges

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### Abstract

The wellness economy is made up of industries that enable consumers to adopt healthy habits into their day-to-day lives. From exercise and training to food, nutrition, and aesthetics, wellness spans a wide range of activities and goods. The healthcare industry (also called the medical industry or health economy) is an aggregation and integration of sectors within the economic system that provides goods and services to treat patients with curative, preventive, rehabilitative, and palliative care. The scope of wellness is directed towards a positive and affirming life. Wellness takes into account multiple components, which involve lifestyle, spiritual well-being, mental well-being and the environment. Ayurveda has a growing influence on holistic wellness and medical tourism. The global Ayurvedic market has been growing at an average annual rate of 16.2% since 2015, reflecting the rising demand for alternative medicine and wellness experiences.

**Keywords:** Well-being, Mental, Spiritual, Activities, Wellness, Intellectual, Financial, Environment

### Wellness in Ayurveda

It translates literally as “the science of life” Ayur – life, Veda – knowledge. Ayurvedic wellness focuses on the delicate balance between mind, body and spirit. Our ability to maintain this balance is the key to Good Health. A healthy life necessitates a perfect complementary support of all these factors and thus the concept of health encompasses Physical, Mental, Sensory and Spiritual domains. Wellness is the act of practising healthy habits on a daily basis to better physical and mental health outcomes, to understand the significance of wellness, it’s important to understand how it’s linked to health. Taking care to eat right, engage in regular physical activity, and get enough sleep are important aspects of self-care. Maintaining a healthy diet can help reduce symptoms of depression and fatigue, improving a person’s overall mood.

### Concept of Wellness in Ayurveda

Ayurveda says the health and wellness of an individual is the sum of their physical and mental activities. It focuses on how an individual’s physical and mental perception reacts to their body. The principal objectives of Ayurveda include the maintenance and promotion of health, prevention of disease and cure of sickness.

Overall physical wellness encourages the balance of physical activity, nutrition and mental well-being to keep your body in top condition. Obtaining an optimal level of physical wellness allows you to take personal responsibility for your own health.

### Classification of Wellness

समदोषः समअग्निश्च समधातुमलक्रियः |  
प्रसन्नात्मेन्द्रियमनाः स्वथ्य इत्यभिधीयते ||

(SU. S. 15/48)

Wellness encompasses 8 mutually interdependent dimensions of wellness in our lives and builds a holistic sense of wellness and fulfillment. Physical, Emotional, Social, Spiritual, Intellectual, Financial, Environment and Vocational (occupational).

- **Physical wellness** encompasses a variety of healthy behaviors including adequate exercise, proper nutrition and abstaining from harmful habits such as drug use and alcohol abuse, as well as preventing illness and injury or managing chronic health conditions.
- **Emotional wellness** is the ability to successfully handle life's stresses and adapt to change and difficult times. Emotional health refers to how well people are able to accept and manage their emotions and cope with challenges throughout life.
- **Social wellness** refers to the relationships we have and how we interact with others. Our relationships can offer support during difficult times. Social wellness involves building healthy, nurturing, and supportive relationships as well as fostering a genuine connection with those around you.
- **Spiritual wellness** means having personal values and beliefs and acting compassionately in accordance with those values.
- **Intellectual wellness** recognizes creative abilities and encourages us to find ways to expand our knowledge and skills to help them grow their potential. Intellectual wellness can be developed through personal and professional development, community involvement and personal hobbies. Cultural wellness includes accepting, valuing, and even celebrating the different cultural ways people interact in the world.
- **Financial wellness** is a state of financial well-being in which you can manage your bills and expenses, pay your debts, and weather unexpected financial emergencies and plan for long-term financial goals such as building college funds and saving for retirement.
- **Environmental wellness** is having good health by occupying pleasant, stimulating environments that support well-being. It promotes interaction with nature and also creates an enjoyable personal environment (both in and out of your workspace). This involves establishing a sustainable lifestyle, protecting natural resources, and eliminating pollutants and excessive waste.
- **Occupational wellness** is the ability to achieve a balance between work and leisure in a way that promotes health, and a sense of personal satisfaction and is financially rewarding. Allows you to explore various career options and encourages you to pursue the opportunities you enjoy the most.
- **Economy wellness** means people have their most basic survival needs met and have sustainable income and assets so they can prosper. (examples of economic well-being)- present financial security includes the ability of individuals, families, and communities to consistently meet their basic needs (including food, housing, health care, transportation, education, child care, clothing, and taxes).

### **Wellness and AYUSH sector in Uttarakhand**

- The wellness sector includes segments such as public health, prevention & personalized medicine, nutrition, fitness, therapies, personal care & beauty, and medical tourism, among others. Of these, rejuvenation services such as spas, alternative therapies, (Ayurveda treatments, homoeopathy, Unani etc.) and beauty services are expected to grow at around 30%, while the fitness sector (including yoga center, gyms and slimming center) is expected to grow by more than 25%.
- The wellness business is projected to grow at a CAGR 30-35% over the next 5 years with the business of leisure (such as sports halls, swimming pools and different facilities) growing in popularity.
- Uttarakhand tourism sector, according to some estimates was worth 51% to the total gross state domestic product from 2004-05 to 2013-14. Is projected to grow to USD 7-8 bn by 2020.

### **Medicinal & Aromatics Scenario in Uttarakhand**

- Uttarakhand is blessed with a variety of soils and agro-climatic conditions, ranging from sub-tropical to alpine which is a mega biodiversity hotspot for a wide range of wild and cultivated medicinal & aromatic species.



- Uttarakhand being a Himalayan state enjoys a proven advantage and monopoly over the availability of some valuable medicinal & aromatic plants in the state.
- More than 200 unique plants with medicinal properties are found in the state. It has 3.66 lac cultivable wasteland which can be utilized for the cultivation of aromatic crops.
- More than 600 tones of pure and natural essential oil suitable for aroma therapy, spa, flavor & fragrance and cosmetic industry are being produced by 18000 trained farmers.
- Uttarakhand is the only state which promotes aromatic crops in an organized manner with the result of 109 clusters covering an area of more than 7600 ha under aromatic crops.

#### **Aromatic sector**

- Sourcing of authentic & 100% pure natural essential oil from the Himalayas.
- Promotion of aroma tourism; detoxification & relaxation of body.

#### **Medicinal plants sector**

- Sourcing of quality and naturally grown raw herbs
- Ample scope of value addition, processing & herbal product development from Himalayan medicinal plants. Development of hi-tech nursery, and production of quality planting material of rare and endangered species.

#### **Some of the key credentials of the state in this sector**

- Pilgrimage has traditionally been a major sector of tourism in Uttarakhand, like Haridwar, Rishikesh, Kedarnath, Badrinath, Gangotri, Yamnotri etc.
- There are many yoga centers and ashrams of world fame in the state, like Yoga Gram Patanjali Haridwar, Gurukul Kangri Vishwavidyalaya Haridwar, Dev Sanskrit University Shanti Kunj Haridwar, Yoga Study Centre Rishikesh, par Marth Niketan Rishikesh, Yoga Niketan Rishikesh etc. the state is focusing on developing few more centers at other tourism places in order to attract tourism from international and domestic markets.
- There is a wide range of herbal drugs produced in hilly areas.
- There are many tourist places in the state, which in turn generate scope for the development of enormous resources for culture, adventure, wildlife, nature(hill stations), and leisure, many new places have also emerged as popular tourist places, employment generation and income for the local youths in the state.
- Under the national AYUSH mission, a government homoeopathic medical college and a 50-bed Unani hospital will be established in the state.
- Financial assistance will be provided for setting up 100 AYUSH wellness centres in the state.
- With the help of the national medical plants, and board, herbal gardens will be established in 200 schools of the state and thirteen nurseries in thirteen districts.
- An assistance of Rs 15 lakh will be given to each forest panchayat for the establishment of medical plants etc.
- Apart from this, arrangements for Marma therapy would be made in Uttarakhand Ayurveda University and it would become a major centre of the country. Uttarakhand is being given assistance by the government of India for the development of the AYUSH sector.
- The mountainous state of Uttarakhand is endowed with a rich variety of medicinal plants, many of which are in great demand in the domestic and export markets (government of India 200).
- A large proportion of this demand is met by collection from the wild. This is particularly true for plants found in high-altitude areas, which are generally characterized by fragile ecosystems. As a result of intensive extraction many species of medicinal plants are now seriously depleted.

- The cultivation of medicinal plants is considered to be of great importance for the safeguarding of biodiversity and contribution to rural livelihood in Uttarakhand.
- It is hoped that cultivated medicinal plant material will provide an alternative source of supply to the market, thereby reducing the need for collection of these plants from the wild. Cultivation will also provide an additional source of income for the state's rural poor.
- This is especially important as 80% of Uttarakhand's working population depends on agriculture, but poor land quality and the small size of landholding lead to low rural income.
- Uttarakhand is a hub of Ayurveda medicines and products, with yoga guru Ramdev ji promoting Patanjali Ayurveda Ltd.'s headquarters and manufacturing units present in Haridwar.
- Availability of good infrastructure for Ayurvedic treatment and education in the state.
- The state houses 549 Ayurvedic and Unani clinics, and two Governments Medical Ayurvedic colleges Rishikul and Gurukul Kangi in Haridwar.
- Also, 206 allopathic hospitals are established in the AYUSH Wing, out of which 26 AYUSH Wing are from the district hospitals.
- 272 pharmacies have already obtained GMP (Good Manufacturing Practices) certificates with efforts being made to get GMP certificates for the remaining pharmacies.
- the state government's Uttarakhand Ayurveda university ensures effective and systematic instructions, teaching, training research and development in Ayurveda, yoga & naturopathy, Unani, siddha and homeopathy facilitated through the University.

#### **Uttarakhand has developed a vast infrastructure for AYUSH**

- 272 Ayurvedic and Unani pharmacies
- 549 state Ayurvedic and Unani clinics
- 3638 registered practitioners
- 2463 Ayurvedic pharmacists
- 983 panchakarma therapist & Nurses
- 206 AYUSH Wing established in the allopathic hospital
- 183 AYUSH Wing being operated in (29 CHC & 154 PHC) under the National Rural Health Mission
- 90 MOCH at PHC Medical Officer Community Health
- 10 Ayurvedic centers available for development & operation in PPP mode

#### **Investment opportunities across Uttarakhand**

Key investible projects/activities across the wellness & AYUSH sector for private investment are identified and categorized below; ( these include projects to be implemented via PPP mode)

#### **AYUSH Project**

- Development of AYUSH Township
- Development of Spiritual Economic Zone (SEZ)
- Development of operation of a global wellness city
- Development of center for wellness and AYUSH treatment (AYUSH Gram)
- Development of State-Of-Art Yoga and Meditation centers ( Yog Gram)
- Development of AYUSH, Panchakarma, Treatment & Yoga in existing Homestays

#### **Healthcare Projects**

- Upgradation, development and operation of AYUSH 50 bedded hospital

- Upgradation and transformation of the existing hospital into multi-speciality disease-based Ayush wellness centers.

### **Aroma Projects**

- Aroma Tourism
- Value addition and fractionation of Japanese mint essential oil

### **Natural Fibre Projects**

- Silk Garment Manufacturing Unit

### **Tourism Projects**

- Upgradation, Operation and Maintenance of Eco huts, Koti
- Upgradation, Operation and Maintenance of floating huts and Eco Lodges, Sarai
- Wellness City, Rishikesh
- Development of wellness Resort at Marchula
- World Class Exclusive Luxury Destination Mountain Forest Resort in Mussoorie
- Development of Hill Resort at Ganjana, Tehri
- Development of Lake Side Resort at Goran, Tehri
- Tent city, Tehri
- Development of a wellness resort at Madan Negi

### **Challenges in Wellness Sectors**

- The healthcare system is faced with several challenges, including increased healthcare costs, the need for nursing and long-term care for senior citizens due to the rise of the nuclear family system, the high financial burden on the poor, the increasing burden of new diseases, and negligence of public health.
- Uttarakhand also witnesses landslides, flash-flooding and forest fires almost every year. Rain shadow areas are prone to droughts.
- Challenges facing tourism include taxation, travel promotions, safety, infrastructure, and cross border set of laws among others. The majority of tourism destinations are not ready for visitors. Facility in the destination. Traffic control, accommodation and other basic amenities need to be properly addressed. Tourism or travelers might at times implicate travel marketing as overstated.
- The health system in Uttarakhand is ailing and the worst affected are villagers living in the hills. Accessibility to quality health care, besides a shortage of doctors and paramedical staff, is the main problem the rural people confront in the state.

### **Conclusion**

Participation in wellness courses that incorporate a mind-body-spirit approach to health improves multiple domains of psychosocial well-being, which persist even after course participation. The wellness industry in India is rapidly growing, with increasing demand for natural and holistic health products and services. This presents many opportunities for businesses in the wellness sector to capitalize on this trend and grow their business.

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## **Wellness sector in Uttarakhand**

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### **Abstract**

India is the Second largest exporter of Ayurveda and Alternative Medicine in the World, with its biggest markets being Western Europe, Russia, USA, and Nepal. India has set up a National Medical and Wellness tourism board policy advice on the wellness sector. Uttarakhand has developed a vast infrastructure for Ayush as there are 272 Ayurvedic and Unani pharmacies, 549 State Ayurvedic and Unani Clinics, and 206 Ayush Wing established in the Allopathic Hospitals. 183 Ayush Wings being operated under the National Rural Health Mission, 90 MOCH at PHC Medical Officer Community Health, 10 Ayurvedic Centres available for development and operation on PPP mode. Uttarakhand is an ideal destination for Luxury Spa, YOG and Meditation Retreats, Home to 62 of the total 350 Hot Springs in India, the Hon'ble Prime Minister of India, has emphasized developing the state as a Yoga Centre. Uttarakhand has great potential to develop as a Model AYUSH state.

**Keywords:** Ayurvedic, Unani, Yoga Centre, Ayush Wings

### **Introduction**

Ayurveda, the Ancient Indian System of Medicine, has gained significant popularity in recent years. With its emphasis on Natural Healing and Holistic well-being, Ayurveda has become a popular choice for Individuals Seeking Wellness and balance in their lives. According to a recent report by CII, 77% of Indian households are using Ayurvedic products as against 69% in 2015. The major chunk of the domestic revenue (75%) comes from the sale of Ayurveda products whereas consulting/service Contribute only 25% to the total business.

Uttarakhand has immense potential area to cater to the demand to produce the best Ayurvedic products Nutraceuticals, Cosmoceuticals and Agro-chemical based industrial products. The opportunity of the wellness sector in Uttarakhand is vast because more than 20 million domestic and 0.1 % million foreign tourist visits every year in Uttarakhand. We all know that Uttarakhand is known as a land of gods, and has emerged as an ideal destination for individuals looking to experience the benefits of Ayurveda in a pristine and pollution-free environment. Development of 'oxygen hubs' for local natives and tourists. This is being done by developing biodiversity parks and regenerated environ.

Uttarakhand is surrounded by evergreen trees, exotic herbs, dense forests, enchanting rivers, and mesmerizing waterfalls. This conductive blend of Himalayan atmosphere, natural resources and spiritual vibrations itself promotes health and wellness. Hence state should focus on developing the concept of Yog Gram. Yog Gram is an unprecedented experiment of bringing together the age-old rural ambience and the ultra-modern lifestyle and the latest architecture. A unique health science is developing in Yog Gram with the co-ordination of science and spiritualism.

Wellness tourism in India is trending not only among foreign travellers, but Indian travellers are also taking much interest nowadays in wellness and rejuvenation. Wellness tourism would mean travelling to promote health and wellness through means of physical, psychological and spiritual activities. Activities like hiking, a relaxing ambience, a journey of finding oneself or a break from the busy lifestyle. Uttarakhand is one such destination that has become very popular globally for its holistic experiences.

As Uttarakhand is blessed with scenic beauty along with soothing weather conditions there is a huge scope to open the resort facilitating Ayurvedic remedies to pamper the guests with a divine experience. The services also include beauty and weight management, dietary plans for various kinds of

life style disorders as wellness packages. Different therapies provided the guest as supplementary services to restore their physical, psychological and spiritual harmony and well-being.

One of the key aspects that make Uttarakhand an ideal destination for Ayurvedic wellness is its abundance of Panchakarma centres. Panchakarma, a traditional Ayurvedic detoxification treatment, is highly sought after by individuals looking to cleanse their body and rejuvenate their minds. Uttarakhand offers a range of Panchakarma centres that provide authentic and effective treatment, ensuring that individuals can benefit from true essence of Ayurveda.

In addition to Panchakarma centres, Uttarakhand is also home to numerous yoga centres. Yoga, an integral part of Ayurveda, is a powerful way to achieve physical fitness, mental clarity, and emotional well-being. The scenery and natural surroundings of Uttarakhand make it an ideal destination for practicing yoga. From traditional ashrams to modern yoga retreats, Uttarakhand offers a wide range of options for individuals to immerse themselves in this ancient practice.

As we know Rishikesh is known as 'Yog Nagri' people come here to do certification courses to become yoga trainers. So, the state government should focus on developing more institutes for certification courses in yoga. Apart from this, arrangements to open 'Marma Therapy' centres in various Ayurvedic hospitals in Uttarakhand.

Uttarakhand is blessed with a pollution-free environment. The state is known for its pristine air and water, making it an ideal setting for individuals looking to detoxify and rejuvenate. Away from the hustle and bustle of city life, Uttarakhand provide a tranquil and peaceful atmosphere, allowing individuals to connect with nature and experience true healing

Furthermore, Uttarakhand's rich biodiversity enables the cultivation of a wide variety of medicinal plants. Ayurveda places great importance on the use of natural remedies derived from plants, and Uttarakhand offers an abundance of these healing herbs. More than 200 unique plants with medicinal properties are found in the state. The state's favourable climate and fertile soil create the perfect conditions for cultivating medicinal plants, ensuring a steady supply of high-quality herbs for Ayurvedic treatments. More than 600 tonnes of pure and natural essential oil suitable for the Aroma Therapy, Spa, Flavour and Fragrance and Cosmetic industry is being produced by farmers of Uttarakhand. There are 109 aroma clusters for the production of essential oils with 187 distillation units. About 3000 plant species are found in the state and is used by the Indian system of medicines like Ayurveda, Unani, and Siddha. So, there is a huge business opportunity for a pharma company in Uttarakhand.

Focusing on the promotion of aroma tourism; detoxification and relaxation of the body and development of a new aroma cluster as per requirement through land leasing with an Indian partner. Development of hi-tech nursery, and production of quality planting material of rare and endangered species.

Medicinal plant nurseries would be established in all AYUSH educational institutions and hospitals. Steps would be taken to grow herbal gardens and to cultivate sufficient medicinal plants on public premises.

The government shall intervene to enhance or develop AYUSH health programmes focusing on Public Health Care, Palliative Care, Maternity Care, Geriatric Care, Sports Care, Life Style Management.

Yoga practices and naturopathic life style would be introduced for prevention of cancer. AYUSH cancer treatment centre would be started and an integrated protocol for the management of cancer would be developed.

The state government would facilitate conducting an integrated programme on lifestyle disease management and prevention through public health activities. Various programmes like the 'Ayushmabhava' the state-level programme to treat lifestyle diseases shall be introduced to all AYUSH hospitals and the knowledge of the 'science of healthy living' shall be propagated to the public domain.

De-addiction speciality clinic would be introduced by leveraging the strengths of Ayurveda and Homoeopathy.

A joint AYUSH fertility centre and intervention programme would be launched to reduce the causes of high incidence of infertility.

The diploma and degree programme in pharmacy, panchakarma therapy, AYUSH nursing and other specialized courses in AYUSH should be strengthened.

### **Conclusion**

Ayurveda, the Indian system of medicine is deeply rooted in our nation. The total size of the Indian Ayurvedic market is Rs50 billion and it is growing substantially at the rate of 10-15 %. The wellness sector in Ayurveda has a wide range of products and services, like panchakarma therapy, herbal supplements, diet plan for life style disease management, yoga, meditation etc. Uttarakhand has emerged as a preferred destination for individuals seeking wellness through Ayurveda. With its range of Panchakarma centres, yoga retreats, pollution-free environment, and cultivation of medicinal plants, Uttarakhand provides an ideal setting for individuals to experience the true benefits of Ayurveda. Whether it is detoxification, physical fitness, or emotional well-being, Uttarakhand offers the perfect blend of natural beauty and ancient wisdom to promote holistic wellness.

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## **Uttarakhand to Be Model AYUSH State: Opportunities, Current Challenges & Way Forward**

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### **Abstracts**

Our Devbhoomi Uttarakhand is going to be a model AYUSH state as it is the mother hub for the development of Ayurveda & other natural herbs-based health science (AYUSH). Business opportunities in Uttarakhand for Herbal pharmaceuticals are enormous due to the diversified use of Herbs in pharmaceutical, Nutraceuticals, Cosmeceutical and Agro-chemical industries Herbal Pharmaceutical industry has great potential and opportunities for development in future. Mainly following Herbal Medicinal Plants & their Value-Added Products well accepted in Domestic and International Market as Ayurvedic Medicines, Unani Medicines, Siddha Medicines, Homoeopathic medicines, Herbal Nutraceuticals, Herbal Cosmeceuticals, Herbal Health drinks, Dietary Health Supplements, Medicinal Plants / Crude Drugs, Herbal Extracts / Concentrates, Veterinary Medicines, Health Foods, AYUSH Health Care Management, Ayurvedic Pancha-karma Centre, Health n wellness/Spas. Various issues & challenges of Herbal Pharmaceutical Industries in Uttarakhand need proper attention for us in favour of small industries & various stakes holder of AYUSH. If we can face these challenges & issues related to the development of the Herbal sector in Uttarakhand. Uttarakhand could capital of Herbs in India. Let us join hands together Medicinal plant farmers, Industry, & academia to develop our Uttarakhand with the newly launched Uttarakhand AYUSH policy-2023 as a model herbal state in India

**Keywords:** Uttarakhand, Herbal, Pharmaceutical, AYUSH

### **Introduction**

Our Uttarakhand is popularly known as ‘Devbhoomi’ or ‘Land of Gods’ It is a mother hub for the development of Ayurveda & other natural herbs-based health science (AYUSH). Business opportunities in Uttarakhand for Herbal pharmaceuticals are enormous due to the diversified use of Herbs in pharmaceutical, Nutraceuticals, Cosmeceutical and Agrochemical industries Herbal Pharmaceutical industry has great potential and opportunities for development in the future<sup>1</sup>. Mainly following Herbal Medicinal Plants & their Value Added Products well accepted in Domestic and international Market as Ayurvedic Medicines, Unani Medicines, Siddha Medicines, Homoeopathic medicines, Herbal Nutraceuticals, Herbal Cosmeceuticals, Herbal Health drinks, Dietary Health Supplements, Medicinal Plants / Crude Drugs, Herbal Extracts / Concentrates, Veterinary Medicines, Health Foods, AYUSH Health Care Management. Ayurvedic Panchakarma Centre, Health Wellness & Spas.

### **Uttarakhand to be a Model AYUSH State**

Uttarakhand has great potential to develop as a Model AYUSH State. The Government of Uttarakhand has undertaken several policy measures and incentives in order to encourage the inflow of investment into the various sectors of its economy. The AYUSH ecosystem can be broadly classified into five segments – cultivation of medicinal plants, AYUSH manufacturing (medicines, personal care, and consumables), healthcare, wellness, and education & research. Uttarakhand has multiple natural and cultural endowments which make it an ideal destination for AYUSH. Some key endowments include the presence of rare medicinal herbs, a well-established AYUSH manufacturing sector, a strong ancient community of practitioners and the presence of destinations conducive to AYUSH healing.

## **Uttarakhand AYUSH Policy-2023<sup>(16)</sup>**

Recently under the dynamic leadership of honourable Shri Pushkar Singh Dhami ji, Chief Minister of Uttarakhand; Govt of Uttarakhand Approved the New Uttarakhand AYUSH Policy 02023. That is to be implemented by Dept of AYUSH, Govt. of Uttarakhand under the visionary supervision of Dr. Pankaj Kumar Pandey, Secretary of AYUSH & Dr. Vijay Jogdande, Addl Secretary AYUSH. The Silent Feature & benefit of Newly Uttarakhand AYUSH Policy -2023 is as under-

### **Key Initiative & Action**

The State would provide incentives and set targets to boost growth across the five segments of the AYUSH ecosystem. –

### **Cultivation of Medicinal Plants**

- ✓ MAPs cultivation with GAP
- ✓ setting up cold storage or controlled atmosphere stores (CA stores) in PPP mode
- ✓ The State shall partner with Agri-tech players to build an aggregation platform in PPP mode that would bring sellers (cultivators, local suppliers) and buyers (manufacturers) of different medicinal plants together. 5.
- ✓ Contract farming of MAPs by ‘Assured Buy Back’ scheme for key medicinal
- ✓ AYUSH & Horticulture dept work with collaboration for all cultivation of MAPs
- ✓ Quality standards will be established for use raw in AYUSH Medicines and ensure a sustained supply of raw herbs.
- ✓ The State shall collaborate with a reputed marketing agency to create a brand around key medicinal plants grown in Uttarakhand in collaboration with leading manufacturers. Such herbs could be either unique to the State or widely known by consumers. For instance, Kutki / Pushkarmool / Tulsi is to be branded as ‘sourced from the Himalayas or Uttarakhand’.
- ✓ The State has introduced policies to encourage farmers to cultivate medicinal plant species and supplement their incomes. For instance, the ‘Chief Minister Medicinal Plant Development Program’ aims to identify clusters for cultivation and bring at least 50,000 farmers under the cultivation program

### **AYUSH Manufacturing Unit**

- ✓ Offering up to 10% extra capital subsidy for all AYUSH Industry Setup under MSME Policy.
- ✓ WHO GMP certification will be promoted
- ✓ Promote the export of products to acquire AYUSH Premium
- ✓ Set up an exclusive Homeopathic Drug Testing Laboratory to ensure quality
- ✓ There will be manufacturing hubs in clusters.
- ✓ Will Promote common testing labs at strategic
- ✓ Promote to utilization of skilled and trained AYUSH manpower to ensure quality and safety of AYUSH drugs sold through retail channels.
- ✓ Focus on collaborating with a marketing agency to brand Uttarakhand as the AYUSH manufacturing hub in India and run a series of campaigns, roadshows, and industry conclaves.

### **Healthcare**

- ✓ Incentive for NABH accreditation
- ✓ promote Yoga as an essential component of public health initiatives to promote preventive health and reduce NCD (Non-Communicable Disease) burden.



- ✓ The State shall launch an AYUSH teleconsultation app which would serve as a one-stop shop for digital AYUSH healthcare services such as online doctor consultation, e-booking for in-person check-ups etc.
- ✓ The State shall promote private sector participation to expand the healthcare infrastructure including physical infrastructure such as hospitals, clinics etc. and digital infrastructure such as e-pharmacies, teleconsultation apps etc.
- ✓ The State shall promote the launch of AYUSH grams through joint ventures or independent ownership by private players to engage local communities in efforts to scale up AYUSH. 8. The State shall collaborate with a marketing agency to create a brand around the top AYUSH hospitals of the State. 6.4

### **Wellness**

- ✓ Offering an additional top-up of 5% capital subsidy for wellness centres, hotels and resorts,
- ✓ Accreditation and Star Rating System to be started for wellness setup
- ✓ State shall support and promote wellness products such as resorts, wellness centre, AYUSH parks etc. in diverse locations such as Kasar Devi, Harsil etc. through PPP mode or private sector investment.
- ✓ The state shall promote the operationalization of Yoga and Meditation centres in hilly areas.
- ✓ The State shall promote private sector participation to expand the wellness infrastructure
- ✓ The Department of AYUSH shall collaborate with the Department of Tourism for all wellness-related actions

### **Education and Research**

- ✓ one-time fixed incentive for all AYUSH colleges which will get NAAC grading from 2.5 to 15 lac.
- ✓ ‘apprenticeship & research program’ for AYUSH colleges to enable students to receive academic & research experience through projects and institutional tie-ups with AIIA, NIA, NIH and leading AYUSH colleges in other states.
- ✓ “Internship program” at all state-run AYUSH colleges to enable students to gain industry
- ✓ Focus on conducting R&D on integration between modern and traditional medicines through UAU
- ✓ Yoga Curriculum will be promoted
- ✓ Focus on fostering collaboration with the most prestigious National as well international institutes, including IIT / AIIMS etc., to facilitate innovation and exposure to diverse perspectives.
- ✓ Focus on Training programs for skill development through CME, ROTP, training, Certificate courses, and workshops.

### **Central Govt Initiative for Development of AYUSH Sector in Uttarakhand**

- The Ministry of AYUSH has shown strong support to scale the sector in Uttarakhand. At the “AYUSH SANVAD” held in Haridwar in December 2021, the Ministry announced investments worth INR 1 lakh crore<sup>3</sup> across multiple initiatives to boost the AYUSH infrastructure in the State including ramp up of AYUSH healthcare capacity, set up of 300 AYUSH wellness center’s, 10 ten-bedded AYUSH hospitals, fifty-bedded upgraded AYUSH hospital in Kotdwar, and fifty-bedded Unani hospital in Pirankaliyar and Haridwar.

### **Various Plus Points for AYUSH Industry setup**

Here author found the following plus point for setup Ayush Infrastructure or herbal industry as-

- Good policy environment
- Pro-active state government with newly launched Uttarakhand AYUSH Policy with Single windows system for Industries setup
- Various financial incentives, Benefits, Scheme, and Grants-in-aid, provided by state govt. through its various Departments eg. MSME, AYUSH, SMPB, CAP, SIDCUL, Etc
- Uttarakhand Having very ideal state for new industry setup as due to a Peaceful place with friendly Police with all laws & orders, an efficient administrative system, a Secure industrial environment, and Established industrial estates like Pantanagar, Dehradun, Haridwar, Selaqui and Sitarganj with all necessary infrastructural facilities.
- Uttarakhand has another plus point - Good Electric supply due to the huge potential for hydropower generation as a result of vast water resources, The Development of good transportation infrastructure is Continuously going on. Recently completed all-weather highway road on hills, Construction of bridges,
- In Uttarakhand, there are Attractive Govt. policy & govt. incentives for the Herbal Industry, Widespread opportunities in sectors like Herbal Pharmaceuticals Industries, Varied topographic and climatic conditions, High Medicinal and aromatic diversity, Presence of rare medicinal herbs, with over 175 species found in the state is an added advantage for the success of herbal-based industries., Presence of key Herbal industrial players like Patanjali, Himalaya, Multani, Arogya, Hans Herbals, Dabur, Emami, Baidyanath, IMPCL, Ban, Gurukul etc, Good private and public sector efforts.

### **Education & Research in Uttarakhand**

The State has emerged as a centre of AYUSH education & research since the British colonial period. Currently, the State's apex AYUSH university is Uttarakhand Ayurved University (UAU) in Dehradun, which has 22 affiliated colleges. Century-old, eminent Gurukul and Rishikul Ayurveda colleges are two other campuses of this University. 5 Ayurveda colleges offer postgraduate programs in clinical and non-clinical streams. Bhartiya Chikitsa Parishad operates 24 AYUSH paramedical colleges while Homeopathic Medicine Board operates 7 paramedical colleges. The State also has central government research bodies such as the Regional Ayurved Research Institute (RARI) under the Central Council for Research in Ayurvedic Sciences (CCRAS) to advocate research and innovation in AYUSH. Currently 1,300-1,500 students are graduating every year in courses related to AYUSH at graduate and post graduate levels in Uttarakhand.

### **SWOT Analysis**

I have endeavoured a SWOT analysis of our Uttarakhand as to be a model AYUSH State based on available information from various possible sources.

#### **Strength**

Uttarakhand<sup>1</sup> was formed on the 9th of November 2000 as the 27th State of India, when it was carved out of northern Uttar Pradesh. Located at the foothills of the Himalayan Mountain ranges, it is largely a hilly State, having international boundaries with China (Tibet) in the north and Nepal in the east. On its north-west lies Himachal Pradesh, while on the south is Uttar Pradesh. It is rich in natural resources especially water and forests with many glaciers, rivers, dense forests and snow-clad mountain peaks. Char-Dham's, the four most sacred and revered Hindu temples of Badrinath, Kedarnath, Gangotri and Yamunotri are nestled in the mighty mountains. It's truly God's Land (Dev Bhoomi). Dehradun is the Capital of Uttarakhand. It is one of the most beautiful resort in the submountain tracts of India, known for its scenic

surroundings. The town lies in the Dun Valley, on the watershed of the Ganga and Yamuna rivers. In addition, its picturesque landscapes - Himalayas, alpine lakes, and dense forest cover - make it an attractive destination for leisure, adventure, and wellness tourism.

It is blessed with a rare bio-diversity, inter-alia, 175 rare species of aromatic & medicinal plants are found in the State. It has almost all major climatic zones, making it amenable to a variety of commercial opportunities in horticulture, floriculture and agriculture. It has a vast tourism potential in adventure, leisure, and eco-tourism.

The State is rich in mineral deposits like limestone, marble, rock phosphate, dolomite, magnesite, copper, gypsum, etc. The number of small-scale industries is 25,294 providing employment to 63,599 persons. As many as 1802 heavy and medium industries with an investment of Rs 20,000 crore employ 5 lakh persons. Most of the industries are forest-based. There is a total of 54,047 handicraft units in the state. Uttarakhand has emerged as a significant destination for investments in manufacturing industry, tourism and infrastructure. Emphasis is on stimulating all three sectors of its economy (agriculture, industry and services), to their fullest potential in tandem with the geographic profile of the state. Uttarakhand<sup>2</sup> has great infrastructure & opportunity for development Herbal Pharmaceutical Industry. It is a mountainous state in north India having 13 districts. It has Area 55483 km<sup>2</sup>. Out of which about 63 % is the forest (Forest area 34650 km<sup>2</sup>) and about 12.50 % is cultivated land. Uttarakhand having Population –more than 10.1 million, State Growth rate is approx. 11.3. Uttarakhand state is endowed with an enormously rich flora including medicinal and aromatic plants (MAPs) and more than 175 Common plants used in AYUSH Industry. More than 1,000 species of rare medicinal plants such as Jatamansi, Ativisha, Kuth, Pushkarmool, Jeevak, Rishabhak, Vatsnabh, Salampanja are present in the State. Uttarkashi<sup>5</sup> is one of the few districts where all ‘Ashtavarga herbs’ or ‘group of eight herbs’ - Kakoli, Kshirkakoli, Jeevak, Meda, Mahameda, Rishabhak, Ridhhi and Vridhii - are found. Jatamansi, a rare herb mainly used in anti-hairfall and anti-anxiety products, is found in the Kumaon region<sup>6</sup> of Uttarakhand besides the eastern and central Himalayas. ‘Vana Tulsi’ from Uttarakhand which boosts immunity and cures colds is used in products like honey and tea. The state has 232 GMP-certified Ayurveda, 8 Homeopathy and 2 Unani manufacturing units. This includes public sector manufacturers such as Indian Medical Pharmaceutical Corporation Ltd (IMPCL) and Rishikul State Ayurvedic Pharmacy. No. of species used by Pharmacies (approx.)- >300. The Herbal Research and Development Institute (HRDI) in Gopeshwar and the Centre for Aromatic Plants (CAP) in Dehradun are key nodal bodies responsible for end-to-end management and promotion of medicinal and aromatic plant cultivation respectively. Annual demand up to 2020 (approx.)- 2500 MT over an area spanning 900 hectares of the state land. Ayurvedic Hospitals/dispensaries -542. Unani Hospitals/dispensaries-5. Homoeopathic Hospitals/ dispensaries-107. Khadi ddhyog/Gram Udhdyog Units-8592. SSIs- 400493. Factories- 27392

### **Weakness**

- Geographical condition
- Challenging climatic conditions, Natural calamities, disasters,
- Land/hill fall
- Transportation infrastructure
- Author finds following weakness after details survey of various stakeholder of Ayush stream as Almost small players have very limited open market share due to lack of strong marketing team which cost very high,
- Up to date Infrastructure/state of the art machinery,
- Automation in process,
- Lack of Technical manpower which is well experienced in natural drug manufacturing Process and Product standardization and validation,
- R & D Setup & expenses to high
- Initiatives for process & product development,
- Limitation in standards of raw material and finished product,

- Service-oriented motto rather than business-oriented approach which makes product adulterated/spurious, Implementation of GMP, Ayush mark, QCI, GLP, GPP, GAP, GCP, Organic certification etc. on ground levels

### **Opportunities**

The author finds the following opportunities after a details survey of various stakeholders of Ayush stream as the Herbal Pharmaceutical industry has great potential and opportunities for development in future. Mainly following Herbal Medicinal Plants & their Value-Added Products well accepted in Domestic and International Market as Medicinal Plants / Crude Drugs, Herbal Extracts / Concentrates, Herbal Medicines, Ayurvedic Medicines, Nutraceuticals / Cosmeceutical, Dietary Supplements, Health / Functional Foods

### **Tentative Estimation of Herbal Market <sup>(15)</sup>**

Global market size of the herbal sector (RIS) -2020	US\$ 657.5 billion (INR 54,28,977 Crore)
Indian market size of Ayush industry- {Forum on Indian Traditional Medicine (FITM) under Research and Information System for Developing Countries (RIS)-2020}	US\$ 18.1 billion (INR 1,49,451 Crore)
Total Ayush export of India (2020)	US\$ 1.54 billion (INR 12,715 Crore)
Annual Growth rate	Approx. 10-15 %
Assumption # - By 2050 herbal market is expected to reach	US \$ 5 trillion.
Ayurvedic Medico tourism market- as Assocham.	>25000 crores
AYUSH In Uttarakhand	The GDP contribution of AYUSH manufacturing in Uttarakhand is estimated to be in the range of INR 4,000-5,000 crores currently. The sector employs around 20,000-25,000 people in the state. GDP from wellness sector in Uttarakhand is estimated to be in the range of INR 1,500-2,000 crores currently.
MAPs revenue from cultivation in UK	estimated to be around INR 30 crores. The production of these plants is around 2,500 MT over an area spanning 900 hectares in the state.

### **AYUSH Ministry, G/o Bharat Initiatives to promote Export**

- The Ministry has developed a Central Sector Scheme for the Promotion of International Co-operation in Ayush (IC Scheme) under which the Ministry of Ayush provides support to Indian Ayush Manufacturers/ Ayush Service providers to give a boost to the export of Ayush products & services; facilitate International promotion, development and recognition of Ayush system of medicine; foster interaction of stakeholders and market development of Ayush at international level; promote academics and research through establishment of Ayush Academic Chairs in foreign countries and holding training workshop/symposiums for promoting and strengthening awareness and interest about Ayush Systems of Medicine at international level.

- The Ministry of Ayush in cooperation with the Ministry of Commerce and Industry has set up an Ayush Export Promotion Council for medicines and products of Ayurveda, Homoeopathy, Siddha, Sowa Rigpa and Unani systems and services of the Ayush systems.
- The Ministry also hosted the first Global AYUSH Investment & Innovation Summit in 2022 in Gujarat which led to the signing of 70 MoUs with global industry players and Letters of Interest on potential investments of INR 9,000 crore.

### **HPI : Possible Bussiness Opportunities in Uttrakhand**

Author find the following possible business opportunities from various herbal sector after details survey of various stakeholder of Ayush stream as under

<b>Sector</b>	<b>Possible Business</b>
Industrial/ Pharmaceuticals	Herbal drug /health care industries using natural materials/medicinal plants (AYUSH Product)
Herbal Cosmoceuticals	Herbal product for personal care & cosmetic purpose
Health Food & Nutraceuticals	Dietary health supplements & Nutraceuticals with curative properties
Herbal Health Drinks	Natural plants-based juice, herbal tea, Squace.
Aromaceuticals & Aroma therapy	Essential oil, distillation of Aromatic plants
Intermediate Drugs	Bulk semi processed material for drug manufactures
Veterinary Products	Plants derived herbal medicines for veterinary uses
Crude drug	Cultivation & marketing of crude drug which is commonly used in Herbal Industries
Others	Honey processing, Gomutra, Shilajit, etc.
Export Business	Export of Medicinal plant
Medico-tourism	Ayurveda, Yoga & naturopathy Education & Rejuvenating Center/ Spa
Traditional Healthcare	Traditional healthcare practices (Ayush)

### **Global Demand Trend...**

Scenario of global demand of herbal product is as under

<b>Indication</b>	<b>Preferred Dosage form</b>
Lifestyle diseases e.g. DM, Obesity, dyslipidemia etc	Cap /Tab
Rasayan	Cap/Granule/Syrup
Aphrodisiac	Cap/tab/Gel/Oil
Anti-tumor drug	Cap/Tab
Allergy disorder	Cap/Tab
Anti addiction drug	Cap/Tab
Nutraceuticals	Granule/Powder/Paste/Cap
Immuno-modulator	Cap/Tab
Sports Medicines	Cap/Tab
Anti Arthritis & Joint Pain Management	Cap
Herbal Cosmeceuticals, Spa & Personal care product range	Cream, Lotion, Gel, Liquid...
Natural Health drink/Juice	Liquid oral

## HPI : Threats

Author finds following opportunities after details survey of various stakeholder of Ayush stream as Influence of pharma majors in policy making, Raw drug availability, Endangered medicinal plant, Commercialization (High cost of product), Drug Adulteration, Statutory regulation, Poor R & D activates these possible threats may create hardship for herbal industries

## Selected species of medicinal plants for cultivation in Uttarakhand

38 Medicinal and Aromatic Plants (MAPs) selected by State medicinal plant board of Uttarakhand for cultivation in Uttarakhand. As 1. Atis (*Aconitum heterophyllum*), 2. Kutki (*Picrorhiza kurrooa*). 3. Kuth (*Saussurea costus*). 4. Jatamansi (*Nardostachys jatamansi*). 5. Chirayata (*Swertia chirayita*). 6. Van kakari (*Podophyllum hexandrum*). 7. Pharan (*Allium stracheyi*). 8. Kala jira (*Carum carvi/ Bunium persicum*). 9. Payerethrum (*Chrysanthemum cinerariaefolium*). 10. Tagar (*Valeriana jatamansi*). 11. Manjistha (*Rubia cordifolia*). 12. Badi Elaichi (*Amomum subulatum*). 13. Patthar chur (*Coleus barbatus*). 14. Rosemary (*Rosmarinus officinalis*). 15. Jirenum (*Pelargonium graveolens*). 16. Sarpagandha (*Rauvolfia serpentina*). 17. Kalihari (*Gloriosa superba*). 18. Satavari (*Asparagus racemosus*). 19. Lemon grass (*Cymbopogon flaxuosus*). 20. Chamomyle (*Matricharia chamomilla*). 21. Silybum (*Silybum marianum*). 22. Stevia (*Stevia rebaudiana*). 23. Pippali (*Piper longum*). 24. Brahmi (*Centella asiatica / Bacopa monnieri*). 25. Ammimajas (*Ammi majus*). 26. Tilapushpi (*Digitalis lanata*). 27. Tejapatta (*Cinnamomum tamala*). 28. Chura (*Madhuca butyracea*). 29. Harar (*Terminalia chebula*). 30. Bahera (*Terminalia bellerica*). 31. Amalaki (*Embllica officinalis*). 32. Chhipi (*Pleurospermum angelicoides*). 33. Videshi indrayan (*Angelica officinalis*). 34. Reetha (*Sapindus mukurossii*). 35. Gulab (*Rosa sp.*). 36. Mint (*Mentha arvensis*). 37. Jangli ajwayan (*Thymus serpyllum*). 38. Lavender (*Lavendula officinalis*).

However some other plants also may be proposed to be grown & cultivated in Uttarakhand, which have been large demand in ayurvedic drug manufacturing industry as. 1. Patala (*Sterospermum Suaveolence*). 2. Syonak (*Oroxylum indica*). 3. Kanchanar (*Bauhiviva variegata*). 4. Bilva (*Aegle marmelos*). 5. Gambhari (*Gmelina arborea*). 6. Daruharidra (*Berberis aristata*). 7. Arjun (*Terminalia arjuna*). 8. Ashok (*Saraca indica*). 9. Padhmakashta (*Prunus cerasoides*). 10. Varun (*Crataeva nurvala*). 11. Neem (*Azadirachta indica*). 12. Amaltas (*Cassia fistula*). 13. Nimbu (*Citrus medica*). 14. Sunthi (*Zingiber officinale*). 15. Akarkara (*Anacyclus pyrethrum*). 16. Talisha patra (*Abies webbiana*). 17. Tulsi (*Ocimum Sanctum*). 18. Gokshura (*Tribulus terrestris*). 19. Lahshun (*Allium sativum*). 20. Bala (*Sida cordifolia*). 21. Pippali (*Piper longum*). 22. Brihati (*Solanum indicum*). 23. Kantakari (*Solanum zanthocarpum*). 24. Shalparni (*Desmodium gangeticum*). 25. Prishanaparni (*Uraria picta*). 26. Vasa (*Adhatoda vasaca*). 27. Chitrak (*Plumago zeylanica*). 28. Nirgundi. 29. Vitex negundo. 30. Haldi (*Curcuma longa*). 31. Kalmegh (*Andrographis paniculata*). 32. Vacha (*Acorus calamus*). 33. Mansaparni (*Phaseolus labialis*). 34. Mudgaparni (*Phaseolus trilobus*). 35. Safed Musali (*Asparagus adscendens*). 36. Kali Musali (*Curculigo orchoides*). 37. Kapoor Kachari (*Hedychium spicatum*). 38. Ghritkumari (*Aloe Vera*).

## Various Working & Coordinating Dept/ Institute/Agencies for the Development of HPI in Uttarakhand

1. Uttarakhand Ayurved University with its 20+ affiliated Ayush medical colleges & hospitals. 2 Dept. AYUSH, Govt. of Uttarakhand. Dept. of Ayurveda & Unani Services. 3. Dept. of Homoeopathy. 4. NMPB, Govt. of India, UMPB, Govt. of Uttarakhand. 5. CCDCO. 6. Central ASU drug control cell, Govt. of India. 7. Ayurvedic, Unani, Siddha, Unani, Homoeopathy Pharmacopeia commission of India. 8. CCRAS, CCRUM, CCH, CCYN, CSIR, ICMR, DST, IIM- Govt. of India. 9. PCIM, PLIM, HPL- Govt. of India. 10. Indian Medicines Pharmaceuticals Corporation Limited (IMPCL) - Under Dept of AYUSH, Govt. of India. 11. Herbal Research and Development Institute (HRDI) . 12. Centre for Aromatic Plants (Cap). 13. Dept. of Industry, Govt. of Uttarakhand. 14. Bhasaj Vikas Ikai/ District Bhasaj Sangh, Govt. of Uttarakhand. 15. Department of Forest /Forest Development Corporation, Govt. of Uttarakhand. 16. KMVN/ GMVN, Govt. of Uttarakhand. 17. Uttaranchal Environment protection & Pollution control

Board. 17. Dept of fire Control. 18. Dept. of Excise. 20. Dept. of Income Tax. 21. AYUSH Promoting NGO's. 22. Ministry of AYUSH, Govt of Bharat. 23. UCOST, 24. IIT Roorkee 25. PRI, Haridwar

### Conclusion

Author had a critical review on development of herbal sector in Uttarakhand after details survey of various stakeholders of Ayush stream and find out these issues & challenges of Herbal Pharmaceutical Industries in Uttarakhand need attention for all of us in favour of small industries. 1. Suitable Infrastructure for Herbal Industry eg. Road Transport, Electricity etc. may be provided on priority basis. 2. Geographical condition can be considered at the time of any policy making in favour of Small manufacturers of Uttarakhand 3. Availability of Authentic Raw Material is now the real challenge for future of Herbal industry 4. Effective implementation of GAP & Programme for Promotion, Conservation and Cultivation of Medicinal plant in Uttarakhand. 5. Availability of quality Raw material, which is extinct for instance Guggulu, etc. 6. Provision for cold storage facilities by Govt. for Herbal material on subsidised basis eg. Amla etc 7. Provision of substitute drug for rare or non available ingredient, as mostly ASU drugs are polyherbal. 8. Govt. Collection centre or Mandi may be organized with by-back facilities. 9. Quality certification/Testing of Herbs should be on subsidized basis. 10. Drug Standardization, Process validation. 11. Effective Implementation of GMP, GHK, GSP, GPP, GLP, GCP. 12. Improvement of Dosage form & formulation along with packing development as customer choice & easy acceptability. 13. Easy Act & drug regulation & enforcement for Herbal sector as this system found effective & time tested without any side effect. 15. Promotion of AYUSH sector in Govt. Health programme. 16. More advertisement in print & electronic media by Govt. for public awareness. 17. "Jan Aushadhi" Type shop for Herbal Product for easy availability of product on low cost. 18. Some preference to be given to Uttarakhand based herbal Pharma Units in drug purchase on Govt. level. 19. More Subsidy & other facilities, exemption for Herbal Industry setup in Uttarakhand. 20. Industrial Loan on low interest for Setting up of Herbal Industries in Uttarakhand. 21. digital marketing platform to be setup for marketing for herbal products if we can face these challenges & issues related to development of Herbal sector in Uttarakhand. Uttarakhand could be capital of Herbs in India. let us joint hand together to develop our Uttarakhand as a model herbal state in India.

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## Lifestyle Disorders and their Preventions

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### Abstract

With the rapid economic development and increasing westernization of lifestyle in the past few decades, prevalence of the lifestyle diseases has reached alarming proportions among Indians in recent years. Ayurveda provides a well-organized traditional health care system, both to maintain health and prevent diseases by following proper lifestyle regimens rather than treatment and cure of the diseases. The main factor is a particular lifestyle including bad food habits, physical inactivity and a disturbed biological clock. The holistic approach of Ayurveda, treating the patient as a whole, meaning intervention targeted towards complete physical, psychological and spiritual wellbeing makes this science a wonderful option in lifestyle diseases. Ayurveda provides a better solution in the form of proper dietary management, lifestyle advises, and *Panchkarma* like detoxification and rejuvenation therapies.

**Keywords:** Ayurveda, Lifestyle Diseases, *Panchkarma*, rejuvenation.

### Introduction

Basically, a particular lifestyle of a person is a cumulative product. of his/her physical capacity coordinate with psychological functioning, displayed in the form of habits, behaviour, dietary and living patterns based on his own training sought from childhood, and mimics he gained from his immediate companions including parents, siblings, peers, etc. Thus, it involves purely psychological and innate control over the physical and sensory activities. When this initiation, control, pro and co-ordination are disturbed, it leads to the derangement of lifestyle and results in any lifestyle disorder. Ayurveda narrated this phenomenon as '*Prajnaparadha*' (intellectual blasphemy) which is one of the three basic causes of any disease. There are ample improper actions as an impact of *Prajnaparadha* which are root causes of various diseases, e.g., the habit of suppression of any natural urge is a result of *Prajnaparadha* and enlisted as a cause of nearly 50% of the diseases.<sup>1</sup> Lifestyle diseases are those diseases that occur on the basis of daily habits of people and are a result of an inappropriate relationship of people with their environment.<sup>2</sup>

### Global Impact

According to the WHO data, every year 38 million deaths occur worldwide due to cardiovascular disease, diabetes, hypertension, dyslipidemia, cancer etc.; which puts great pressure on with the health care system as well as an economic burden. By the year 2005, India experienced the "highest loss in potentially productive years of life" globally and the leading cause was cardiovascular disease; mostly affecting people aged between 35-64 years. Sixteen million NCD deaths occur before the age of 70. Cardiovascular diseases account for most NCD deaths every year, (17.5 million) followed by cancers (8.2 million), respiratory diseases (4 million), and diabetes (1.5 million). Altogether these 4 groups of diseases account for 82% of all NCD deaths. If all forms of cancer can be eliminated, then the life expectancy of the population can be raised by an average of 3 years and in case of major cardiovascular disease, it can be up to 10 years. India is one of the nations with maximum number of lifestyle disorders in the near future as per the WHO data. As per the joint report of the World Health Organization and the World Economic Forum, India suffered an economic loss of 236.6 billion US dollars by the year 2015 due to lifestyle disorders and by 2030; this productivity loss is expected to be 17.9 million years' loss. This economy loss is about 1,000% greater than the corresponding loss in the United States.<sup>3</sup>



### Causes (*Nidaan*)

The most common causes of lifestyle disorders are consuming unhealthy foods, over eating, over-dependence on processed foods, energy drinks, artificial sweeteners and fast foods. Sedentary living, stress, smoking, drinking alcohol, poor sleeping habits which are all attributed mainly to the so-called modern living habits and urbanization added with the altered eating habits makes the situation worse. There is one another significant problem of the today's world. That is poor exposure to sun light and fresh air. Diet and lifestyle are chief factors thought to influence susceptibility to lifestyle diseases. The nature and duration of work, the amount of time everyone spare for exercise and recreation, the time everyone spend with their loved ones, the stress factors, your physical activity etc decide on how soon you are likely to land up in any one of the lifestyle disorders. More work and no play, makes a lot of us prone to a host of diseases. Along with that there are many factors such as heredity, age and gender which cannot be avoided or controlled. But the other factors that can be avoided or controlled are drug abuse, alcohol intake, tobacco and smoking.<sup>4</sup>

### Prevention (*Rakshanam*)

In the management of lifestyle diseases, Ayurveda offers various regimens including Ahara and *vihar* (dietary habits and daily routine). *Dinracharya* (daily regimen), *Ritucharya* (seasonal regimen), *Panchakarma* (five detoxification and bio-purification therapies), and *Rasayana* (rejuvenation) therapies. The *Sadvritta* (ideal routines) and *AacharaRasayana* (code of conduct) are of utmost importance to maintain a healthy and happy psychological perspective.<sup>5</sup>

*Ahara-Ahara* and *Vihara* play a central role in life according to Ayurvedic understanding. Ayurveda places special emphasis on *Ahara* and *Vihara* as measures for better living, health and wellness. Ayurveda emphasizes more on *Ahara* in comparison to other systems of medicine and also explored its emotional and spiritual significance, in addition to its material and biological attributes. *Ahara* is considered as Prana (basis of life) in Ayurveda.<sup>6</sup> *Aharahas* described as one of the *Trayopastambha* (three subsidiary pillars) of life which are *Ahara*, *Nidra* (sleep) and *Brahmacharaya* (celibacy).<sup>7</sup> Diet is considered as vital for a human body as it provides the basic nutrients and promotes longevity. Ayurveda always emphasizes on consuming a healthy and nutritious diet to maintain good health. As per the view point of Ayurveda, both the living human body and the diseases afflicting it are the products of *Ahara*. The use of *hita-ahara* (wholesome diet) promotes health and longevity and *ahita-ahara* (unwholesome diet) promotes manifestation of different disorders. Unfortunately in the modern era the concept of *hita-ahara* is continuously being ignored leading to the emergence of lifestyle disorders.<sup>8</sup> Ayurveda also described eighteen types of dietary incompatibilities (*ViruddhaAhara*)<sup>9</sup>, which should be avoided to maintain health and longevity. The motto of Ayurveda is "swasthasya swasthya rakshanam, aaturasya vikaara prashamanam"<sup>10</sup> i.e., Ayurveda aims to maintain the health of a healthy person and to restore the health of diseased. Rather than pacifying the symptoms, Ayurveda aims to achieve harmony in one's body functions. Health is mentioned as Swasthya- a balance in one's system biology. It is the state of equilibrium of the three principles of the body, namely Vata, Pitta and Kapha, along with a contented state of senses mind and soul.<sup>11</sup>

The existence and sustenance of human life are based on diet. Dietary consideration is an important component of every prescription in Ayurveda. Often dietary management itself is the treatment. A wholesome diet maintains the equilibrium of dhatu (-tissue), helps in the promotion of health and prevention of diseases<sup>12</sup>. Ayurveda has dietary guidelines for choosing appropriate food, mode of preparation, storage, manner of intake, eating atmosphere, hygiene, seasonal considerations and other etiquettes. Adequate emphasis has been given in the classics of Ayurveda regarding the right way of taking food.<sup>13</sup> It is advised to take food containing all tastes, according to one's Prakriti, in a hygienic atmosphere, with optimum speed, when there is appetite, after offering prayer, with concentration and at the right time. One must consume according to digestive capacity (*Agnibala*), only after digestion of previous feed. The way food is served plays role in adding to the nutritional value. Food consumed in the

right manner serves as nectar. The sequence is said as first madhura rasa (sweet taste) then amla- lavana (sour- salty) then katu (pungent), tikta (bitter) and last kashaya rasa (astringent taste) must be taken<sup>14</sup>.

Ayurveda enlist certain food combinations which must be avoided at any coast, otherwise they will act like poison under the domain 'virudha'<sup>15</sup> (-dietary incompatibility). For example, fish and milk together is considered as veerya virudha (incompatible in potency). Ayurveda even considers food as "mahabhaishajya", the superior medicine. It is told that, for those people practicing 'pathya ahara' (wholesome diet), there is no need to take any other medicine.

Every individual needs health care based on their Prakriti (phenotype) or Vikruti (disease) in the line of his genomic profile. Even though food is derived by individual from the environment, it's processing and use intimately depends on the integrity of internal bio-mechanism. Unless the bio-fire system (Agni) and inner bio-transport (Srotas) are in order, the process of nutrition may not be accomplished. It is seen that Vata Prakriti will have Vishamagni<sup>16</sup> (varied digestive fire) and are prone to Vata vikara (disease due to vitiated Vata). Similarly, Pitta Prakriti will have Tiksnagni (increased digestive fire) and Pitta vikara (disease due to vitiated Pitta) tendencies. Kapha Prakriti will have Mandagni (decreased digestive fire) and are prone to Kapha vikara (disease due to vitiated Kapha). Sama Prakriti (constitution with balance of Vata, Pitta and Kapha) will have Samagni (balanced digestive fire) and they will have good resistance to diseases. By considering the "Prakriti" of the individual, the physician can distinguish the diet that maintains the health.

Ayurveda proposes about medicinal dietary supplements in the context of Rasayana<sup>17</sup>. Most Rasayanas produce their nourishing and rejuvenating effect by acting as direct nutrients, by promoting the Agni Bala (digestive power), or by way of Sroto-prasadana (clearing the channels), resulting in an improved nutritional status, further leading to an improved quality of *Dhatu*.

## Discussion and Conclusion

Lifestyle diseases" known internationally as 'non-communicable diseases (NCD's) or 'chronic diseases of lifestyle' (CDL) emerge from inappropriate relationships of people with their environment. These are a group of diseases that share similar risk factors, which may be due to exposure over many decades, unhealthy diets, smoking, lack of exercise, and stress. The major risk factors are high blood pressure, high blood cholesterol, diabetes and obesity. These result in various long-term diseases. Processes, culminating in high mortality rates attributable to stroke, heart attack, cancers, chronic bronchitis, emphysema, renal failure, and many others. From the history of treatment and preventive measures given to the persons suffering from life style diseases.

Ayurveda has proven its role and importance in this area. The other systems do not have any other answers than the supply of nutritional food and physical activities in this respect. Also as nutritional food and physical activity are well defined in the Ayurvedic system, it can be upon its various types. Most *Rasayanas* produce their nourishing and rejuvenating effect by promoting the *Agni Bala*, acting as direct nutrients and by way of Sroto-prasadan (purification of body channels), resulting in an improved nutritional status which further leads to an improved quality of *Dhatu*s or body tissues. Ayurveda offers some code of good conduct under the heading of *Sadvratta* and *Achara Rasayana*. The conducts under *Sadvratta* and *Achara Rasayana* can be categorised into personal (early sleeping and awakening, avoid excess exertion, avoid suppression of natural urges, regime of bathing, keeping skin clean), social (keep mercy on others, telling truth, avoid alcoholism, be soft-hearted, always use cleaned and washed cloths), psychological and emotional (try to be in a steady mental state i.e. avoid height of emotions, try to avoid to memorize if being insulted by anyone, keep patience, etc). Such type of lifestyle adaptation is always helpful in the prevention and management of a wide range of lifestyle disorders. Furthermore, community participation and civic engagement are associated with better self-reported mental health. Hence, Ayurveda has an upper edge in treating the disease with emphasis on its root cause. The Ayurvedic physician concentrates on achieving the objective of Ayurveda for the promotion of health, prevention and management of disease for a healthy and happy life in the ailing society.

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## The Role of Ayurveda in Wellness Tourism: Ancient Wisdom for Modern Well-being

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### Abstract

Ayurveda, the ancient system of medicine and life philosophy, has emerged as a significant driver of medical and wellness tourism in India. With its holistic approach to health and well-being, Ayurveda has captivated the attention of both domestic and international tourists seeking natural and alternative healthcare practices. In this article, we will explore the essence of Ayurveda, its appeal to wellness tourists, the emerging wellness tourism market in India, and the government initiatives that have propelled India into a world-class wellness destination.

**Keywords:** Ayurveda, Health, Wellness, Rejuvenation, Wellness Tourism, Holistic approach, MDA scheme, NABH, Health care

### Understanding Ayurveda: Ancient Wisdom for Balanced Living

Derived from the Sanskrit words "Ayur" meaning life and "Veda" meaning knowledge, Ayurveda is a collection of principles and practices that promote healthy living and balance. With a history dating back 5000 years, Ayurveda is one of the world's oldest healing systems. At its core, Ayurveda emphasizes the harmony of mind, body, and spirit as the foundation of well-being. Ayurveda encompasses various elements that contribute to a balanced and healthy life. These elements include:

**Equilibrium of Tridoshas:** According to Ayurveda, the three doshas (Vata, Pitta, and Kapha) govern the physiological and psychological functions of the body. Maintaining a balance between these doshas is essential for optimal health [1].

**Proper functioning of Agni:** Ayurveda recognizes 13 types of Agni, the digestive fire responsible for processing food and eliminating waste. A healthy Agni is crucial for efficient metabolism and overall well-being [2,3].

**Balanced state of Dhatus:** Ayurveda identifies seven body tissues known as Dhatus, which contribute to the formation and nourishment of the body. Ensuring the balance of these Dhatus is fundamental for optimal health [4].

**Proper evacuation of Trimalas:** Ayurveda emphasizes the importance of regular elimination of waste products through urine, feces, and sweat. Efficient elimination supports detoxification and overall wellness [5].

**Balanced state of Mind:** Ayurveda recognizes the interconnectedness of the mind and body. Maintaining a balanced state of mind, including the senses and soul, is vital for holistic well-being [6].

### The Allure of Ayurveda for Wellness Tourists

Ayurveda's holistic and natural approach to healing has made it highly appealing to wellness tourists seeking alternative healthcare practices. The following attributes of Ayurveda medicine contribute to its popularity among wellness tourists:

**Completely Natural Treatments:** Ayurveda utilizes natural herbs, oils, and therapies to promote healing and well-being. The use of natural ingredients resonates with wellness tourists seeking organic and sustainable practices.

**Non-invasive and Non-toxic:** Ayurvedic treatments are typically non-invasive and non-toxic, making them a safe and gentle alternative to conventional medical procedures.

**Promotes Body's Capacity for Balance:** Ayurveda focuses on restoring and maintaining the body's natural balance. By enhancing the body's innate healing capacity, Ayurveda empowers individuals to take charge of their well-being [7].

**Preventive and Curative Focus:** Ayurveda encompasses both preventive and curative healthcare practices. Wellness tourists can benefit from Ayurveda's preventive approach to maintain optimal health or seek curative treatments for specific ailments.

**Rejuvenating and Relaxing:** Ayurvedic therapies, such as massages and rejuvenation treatments, are known for their ability to relax the body and mind, promoting a sense of rejuvenation and overall well-being [8].

**Physical, Mental, and Spiritual Well-being:** Ayurveda recognizes the interconnectedness of physical, mental, and spiritual aspects of well-being. By addressing the holistic aspects of health, Ayurveda offers a comprehensive approach to wellness [9].

**Integration with Western Medical Treatments:** Ayurveda can be easily incorporated into western medical treatments and lifestyles. This compatibility appeals to wellness tourists seeking a complementary approach to their existing healthcare practices.

**Recognized by Leading Bodies:** Ayurveda is recognized by leading bodies as a traditional system of medicine, further enhancing its credibility and appeal to wellness tourists [10].

**Wide Range of Applications:** Ayurveda is used for a wide range of conditions, including chronic, stress-related, and metabolic conditions. The versatility of Ayurveda makes it relevant for various wellness needs.

### **India as an Emerging Wellness Tourism Market**

India has established itself as a prominent destination for both medical and wellness tourism. With its rich heritage of ancient healing practices, yoga, naturopathy, and Ayurvedic treatments, India offers a unique and attractive experience for wellness tourists. The country's wellness tourism market has experienced significant growth, driven by several factors:

**Rising Awareness about Health and Wellness:** Increasing awareness about health and wellness among individuals has fueled the demand for alternative medicine and wellness experiences. Ayurveda, with its holistic approach, aligns with the growing interest in preventive healthcare practices.

**Acceptance by Mainstream Western Medicine:** Ayurveda's recognition and acceptance by mainstream western medicine have contributed to its appeal among wellness tourists seeking evidence-based treatments.

**Demand for Natural Products:** The global shift towards natural and organic products extends to the wellness tourism market. Ayurveda's use of natural ingredients and therapies aligns with the demand for natural products and experiences.

**Preventive Practices in Medicine:** The global healthcare landscape has witnessed a shift towards preventive practices, focusing on maintaining health rather than treating diseases. Ayurveda's emphasis on preventive healthcare aligns with this trend, making it a sought-after wellness practice.

**Demand for Ayurvedic Cosmetics Products:** Ayurveda's holistic approach extends to beauty and skincare. The popularity of Ayurvedic cosmetics products, including anti-aging and anti-wrinkle creams, has contributed to the growth of the wellness tourism market.

**International Certifications of Quality Practice:** The establishment of Ayurveda Centers with international certifications of quality practice has played a crucial role in fostering the growth of medical and wellness tourism in India.

**Highly Qualified Ayurvedic Doctors:** India's Ayurveda schools, established in the late 1940s, have trained a large pool of highly qualified doctors. The presence of skilled professionals enhances the credibility and quality of Ayurvedic treatments in the country.

**Value for Money:** Ayurveda treatment and massage packages in India offer great value for money for wellness tourists. The affordability and quality of services attract tourists from Western and Gulf regions.

**Celebrity Endorsements:** Prominent personalities, including celebrities like Naomi Campbell and Madonna, have endorsed Ayurvedic treatments in India. Such endorsements contribute to the visibility and reputation of India as a wellness destination. India's emergence as a wellness tourism market is further reinforced by the expected rise in demand for wellness retreats after the pandemic. The country's cultural heritage, coupled with its ancient healing practices, makes it well-positioned to cater to the growing wellness tourism market.

### **Medical Tourism: India's Advantage in Global Healthcare**

In addition to wellness tourism, India has also gained recognition as a top destination for medical tourism. Medical tourism refers to the practice of travelling across borders to seek healthcare services, including elective procedures and complex surgeries. India holds several advantages that make it an attractive choice for medical tourists:

**Internationally Trained Doctors and Surgeons:** Many doctors and surgeons practicing in Indian hospitals have received training or worked in renowned medical institutions in the US, Europe, and other developed nations. Their expertise and international exposure contribute to the quality of healthcare services in India.

**Fluency in English:** Most doctors and nurses in Indian hospitals are fluent in English, ensuring effective communication and a seamless experience for international patients.

**State-of-the-art Medical and Diagnostic Equipment:** Indian hospitals are equipped with top-of-the-line medical and diagnostic equipment from global international conglomerates. This ensures the availability of advanced technologies for accurate diagnoses and effective treatments.

**Highly Skilled Indian Nurses:** Indian nurses are recognized as some of the best in the world. With nearly 1000 recognized nurses-training centers in India, producing approximately 10,000 nurses annually, the country boasts a highly skilled nursing workforce.

**Affordability without Compromising Quality:** India offers first-rate medical services and luxury amenities at a fraction of the cost compared to developed nations. Even budget-conscious travellers can afford high-quality healthcare services in India. The combination of skilled healthcare professionals, advanced medical facilities, affordability, and English proficiency positions India as a competitive player in the global medical tourism industry.

### **Government Initiatives Driving Medical and Wellness Tourism**

The Indian government has taken proactive measures to promote medical and wellness tourism in the country. These initiatives aim to provide a conducive environment for tourists seeking healthcare services and promote India as a preferred destination. Key government initiatives include:

**National Medical and Wellness Tourism Board:** The Ministry of Tourism has established a National Medical and Wellness Tourism Board to provide dedicated institutional support for the promotion of medical and wellness tourism in India. The board focuses on the integration of Ayurveda, Yoga, Unani, Siddha, and Homeopathy (AYUSH) practices into the tourism sector.

**Guidelines for Wellness Tourism:** The Ministry of Tourism has drafted guidelines for wellness tourism, addressing issues such as quality publicity material, training and capacity building for service providers, and participation in international and domestic wellness events. These guidelines ensure the standardization and promotion of quality wellness experiences in India.

**Accreditation of Wellness Centers:** To address concerns about the quality of wellness services, the National Board for Accreditation of Hospitals & Healthcare Services (NABH) has developed guidelines for the accreditation of wellness centers. These guidelines ensure that wellness centers meet specific quality standards and provide authentic and reliable services.

**Market Development Assistance (MDA) Scheme:** The Ministry of Tourism extends its Market Development Assistance (MDA) scheme to wellness tourism service providers, including accredited wellness centers. The MDA scheme provides financial assistance to promote tourism-related activities and enhance the competitiveness of Indian wellness centers in the global market.

**Collaboration with Stakeholders:** The government actively engages with stakeholders, including wellness tourism service providers, state governments, and industry experts, to drive the growth of medical and wellness tourism in India. These collaborations ensure a comprehensive and inclusive approach to the development of the sector.

The government's initiatives, along with partnerships and collaborations, have positioned India as a leading destination for medical and wellness tourism. India's medical tourism industry is projected to reach a value of \$9 billion by 2020, making it the fastest-growing medical tourism destination in Asia [11].

### **Streamlining the Wellness Tourism Experience**

As the demand for wellness travel continues to rise, it becomes imperative to provide an easy, transparent, and organized experience for wellness tourists. Efforts to streamline the wellness tourism experience in India include:

**Effective Rating and Classification System:** To ensure transparency and informed decision-making, a more effective rating and classification system for wellness centers is crucial. This system would enable tourists to choose accredited and high-quality wellness centers that meet their specific needs.

**National Accreditation Board for Hospitals & Health Care Providers (NABH):** The NABH, a board of the Quality Council of India, plays a vital role in establishing and providing accreditation for Ayurvedic hospitals, wellness centers, and yoga centers. Accreditation assures tourists of the quality and reliability of the services offered.

**Health Insurance Coverage:** Accreditation of wellness centers by NABH has led to an important benefit for wellness tourists. Health insurance companies now provide up to 25% coverage for various treatments received at NABH-accredited hospitals or healing centers. This development has significantly enhanced the accessibility and affordability of wellness treatments for tourists. The streamlined process, including effective rating systems, accreditation, and insurance coverage, enhances the credibility and trustworthiness of wellness centers in India. These measures contribute to the growth of the wellness tourism industry and reinforce India's position as a world-class wellness destination [12].

### **Conclusion: Ayurveda's Timeless Wisdom for Modern Well-being**

The role of Ayurveda in wellness tourism is a testament to the timeless wisdom of this ancient healing system. With its holistic approach to health and well-being, Ayurveda offers a comprehensive and natural alternative to conventional medical practices. India, with its rich heritage and commitment to quality healthcare, has emerged as a global destination for medical and wellness tourism. The government's initiatives, coupled with the popularity of Ayurveda and India's advantages in healthcare services, have positioned the country as a leader in the wellness tourism market. As the demand for holistic wellness experiences continues to grow, Ayurveda shines as a beacon of ancient wisdom, guiding individuals towards a balanced and fulfilling life.

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## A potential Role of Millets in Managing Type 2 Diabetes Through Modulating Gut Microbiota

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### Abstract

Diet is one of the important modifiable factors in the prevention and management of type 2 diabetes mellitus (T2DM), making it important to understand geographical variations of food consumption patterns, and their similarities and differences across various regions. Indian diet patterns are mostly carbohydrate-based and with vast regional diversity. Staple food, food groups consumed, meat consumption pattern, type of fermented foods, food preparations, type of cooking oil used and food ingredients vary in different regions of India. There has been a transition from consumption of coarse grains to refined grains owing to socio-economic, cultural and other factors. Consumption of fruits and vegetables, fats, ready-to-eat foods and sugar is higher among the urban population whereas consumption of carbohydrates in the form of cereals and millets is higher among the rural population. However, the prevalence of diabetes increased in both rural and urban India from 2.4% and 3.3% in 1972 to 15.0% and 19.0% respectively in the year 2015-2019. Overall, there is a tendency towards consumption of calorie-dense foods at the cost of food diversity, which may also result in micronutrient deficiencies as well as the development of T2D and related metabolic diseases. Now, the time has come to make public health strategies and policy-level decisions involving stakeholders with diet modification including millets as focal points are absolute priorities to prevent and manage the burden of T2D in India and the world at large. Therefore, one diet should be decided by including millets as per their body constitution, time, season, right combination and processing.

### Type 2 diabetes mellitus (T2DM)

Diabetes is a rapidly growing health challenge and a potential epidemic across middle-income countries like India [11]. It is projected that by 2025 the number of cases of diabetes in India will be 69.9 million with a vast majority still undiagnosed [18]. Therefore, India is considered the diabetic capital of the world [14]. T2DM is primarily driven by dietary transitions and insufficient or lack of physical activity altering the physiological milieu leading to overweight or obesity and diabetes. T2DM or non-insulin-dependent DM is caused either due to insulin resistance or  $\beta$ -cell dysfunction. Exhaustion of glucose transporters in the intestine and kidney is also a line of cause for diabetes [6].

### Role of gut microbiota in the development of T2DM

The human gut microbiota comprises diverse communities which provide remarkable enzymatic capability and hence play a fundamental role in manipulating host physiology. The relationships between these microorganisms and host cells were long considered only from a pathogenic point of view because toxins invade the gut mucosa and translocate, disseminate, and cause systemic infections and inflammation, hence T2DM. However, no attention was paid to the majority of gut microorganisms and their relationship with host health.

Recently the relationship between health and the composition of the gut microbiota has raised interest in the modulation of the gut microbiota by administration of probiotic species for the prevention of some diseases in humans and animals [10]. Among the commonly reported findings, the genera of *Bifidobacterium*, *Bacteroides*, *Faecalibacterium*, *Akkermansia* and *Roseburia* were negatively associated

with T2DM, while the genera of *Ruminococcus*, *Fusobacterium*, and *Blautia* were positively associated with T2DM, therefore, considered as beneficial and pathogenic bacteria respectively [8]. These gut microbiotas are vital for carbohydrate fermentation and nutrient absorption, protection from pathogenic bacteria and regulation of metabolic disorders such as T2DM [4]. So far, consumption of probiotics, use of antibiotics, undergoing bariatric surgery, gut microbiota transfer and nutrition in the management of glycaemia-related dysbiosis are the approaches to manage T2DM.

However, recently Ma-Pi 2 diet has been found to reduce the gut microbiota-dependent pro-inflammatory stimuli in the gut that, increasing chronic inflammation, can lead to insulin resistance in T2DM [3]. Similarly, a diet regimen which incorporates a significant amount of finger millet seed coat has been shown to confer various health benefits. These include reducing inflammation, maintaining a healthy plasma lipid profile, alleviating oxidative stress, modulating the expression level of several obesity-related genes, and increasing the beneficial bacteria population of the gastrointestinal tracts such as lactic acids and *bifidobacterial* in a mice-based study [12]. Whereas various millets bio-actives effectively controlled pathogenic gut microbiota, such as *Shigella* and *Clostridium histolyticum*, to lower gut inflammation and, thus, the risk of diabetes in the host.

### Anti-diabetic effects of millets

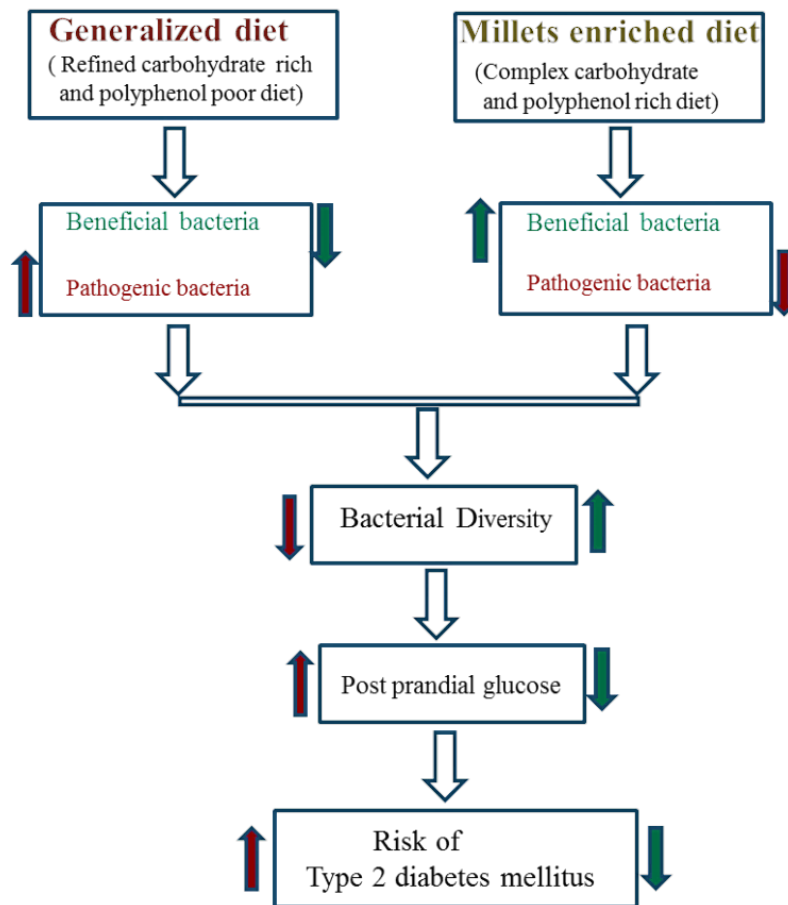
Millets have been used as food as well as a therapeutic diet in Ayurveda since *Samhita Kala*. In healthy people, millet can be used as a preventive and therapeutic diet. Millets are best utilized in the *Santarpanajanya Vikaras* (diseases due to overnourishment) and *Kapha-Pittaja Vikara* caused because of the outbreak of non-communicable diseases brought on by the sophisticated sedentary lifestyle. These millets are Barnyard (Jhangora), Little (Kutki), Sorghum (Jowar), Pearl (Bajra), Finger (Mandua) Foxtail (Kangri), Koda (Kodra) and Proso (Barri). Though staple food crops, such as wheat and rice, which people have been eating for years, millet remains highly nutritious and beneficial, but it is an underutilized crop that has a multitude of benefits for health; the most beneficial are low glycemic index (GI), high fiber content, polyunsaturated fatty acids (PUFA), non-acid-forming potential, and being gluten-free. Millets are nutrients rich in vitamins, minerals, proteins, essential fatty acids, energy, carbohydrates, plant chemicals, and non-glycemic polysaccharides [1]. According to most leading health associations recommended dietary intake for a diabetic person is carbohydrate 45-60% of total calories, protein 10-20% of total calories, fats 20-35% of total calories, fiber 25-50 g per day and sodium <2400 mg per day. Millets stand by as the ideal food crop for people with diabetes according to the criteria set by leading associations by containing 60–70% of dietary carbohydrates, 6–19% protein, 1.5–5% fat, 12–20% dietary fiber, 2–4% minerals, and several phytochemicals.

Amongst the millets, foxtail millet is particularly rich in resistant starch, which can delay gastric emptying and decrease post-consumption blood glucose levels [15]. The high fiber content and phenolic content of the diet make millet, especially very fruitful for DM [9]. Sorghum is enriched with prolamin (kefirin), a protein that, when cooked, becomes comparatively less digestible compared to proteins present in other cereals [5]. Pearl millet is rich in zinc, iron, dietary fibers, and omega-3 fatty acids, which provide antioxidant properties when consumed [16]. Pearl millet increases insulin sensitivity and reduces triglyceride levels in the body.

Similarly, a large amount of phytic acid present in millets, especially finger millets, reduces carbohydrate digestibility and mitigates postprandial blood glucose levels. Finger millet also contains twice the amount of calcium in milk and 10 times more calcium than brown rice, wheat, and corn [7]. The prebiotic components inherent in finger millets are metabolized by indigenous bacteria in the human gut to produce beneficial short-chain fatty acids and probiotics from the colon, which have been shown to possess antidiabetic properties [17]. Diabetics show a major sign of polyphagia and frequent food cravings. Finger millets reduce the duration of gastric emptying to maintain constant postprandial body glucose homeostasis [2]. Polyphenolic ligands have an inhibitory effect on alpha-glucosidase and pancreatic amylases to reduce postprandial hyperglycemia by inhibiting the enzyme hydrolysis of complex carbohydrates [13]. In addition, finger millet contains several bioactive molecules that directly

affect the beneficial microbial communities in the gut (*Faecalibacterium*, *Lactobacillus*, *Eubacterium*, *Roseburia*, and *Akkermansia*) and thus alleviate systemic inflammation and insulin resistance. However, these bioactive molecules also inhibit various opportunistic pathogens, which limit inflammation and toxin levels in the gut, and further reduce the risk of diabetes in the host. This accumulated evidence suggests that the gut microbiota plays a crucial role in the anti-diabetic effect of finger millet consumption in the host [17].

Millets also contain slowly digested starch that extends the digestion and absorption of carbohydrates in the intestine. Compared to widely consumed rice, millet releases less glucose into the blood for a longer period of time, which is attributable to diabetes prevention. Millets help in the management of body weight, which is of utmost importance in diabetic patients. It was found that the glycemic index of finger millet was lower than that of rice and wheat. The reason for the lower glycemic response may be due to the presence of polyphenols in whole-finger millet flour. These are known to reduce the starch digestibility and absorption. However, one of the disadvantages of millets is a higher concentration of anti-nutritional factors compared to wheat and rice.



**Figure:** schematic diagram showing the effect of generalized diet and millets enriched diet on the risk of type 2 diabetes mellitus. Upward arrows (↑) showing increase and downward arrows (↓) showing a decrease

### Hypothesis

A generalized diet, dominated by refined foods like rice, wheat, refined flours, processed meats, refined oils, packed and ready-to-eat foods, and milk has high GI, low fiber content, low polyphenol and is full of

gluten. Whereas, millet has low GI, high fiber content, PUFA, non-acid-forming potential, and gluten-free. Therefore, when millets enriched diet is consumed it allows to flourish a diverse type of microbiota and most of them will be the beneficial microbiota in the gut. Hence, beneficial bacteria proliferate and reduce the glucose level in the blood which reduces the risk of T2DM and associated complications. Ayurveda has a distinguished explanation of *Kshudra Danya* (millets) with their specific qualities and effects, based on which their indications and contraindications can be elicited. Therefore, millets enriched diet, if consumed based on an individual's body constitution, time, season and processing shall help to manage T2DM through proliferating beneficial gut microbiota.

## Conclusion

Millet helps to proliferate beneficial microbial communities in the gut, reduce the duration of gastric emptying, increases insulin sensitivity, reduces triglyceride levels in the body, reduces starch digestibility and absorption and helps in the management of body weight, which is of utmost importance in diabetic patients. Today, this carousel has changed from Allen's starvation diet to a diet rich in complex carbohydrates, fats, and dietary fibers, and a high intake of millet-based dietary fiber controls glycemia, hyperinsulinemia, and lowers plasma lipids in patients with type 2 DM. Now, once diet plan should be decided by including millets as per their body constitution, season, right combination and processing to modulate gut microbiota to prevent and manage T2DM. Physicians, nutritionists, and patients themselves should try to incorporate millet into their diet and follow a strict, balanced, and planned diet in combination with regular exercise or walking.

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## Life-style Disorders: Preventive Approach through Ayurveda

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### Abstract

Life-style disorders also known as non-communicable diseases (NCDs) are the main concern of health in industrialized and developing nations this time. In the global loss of lives, the major cause is contributed by the NCDs. In India, 63% of total annual fatalities are attributed to NCDs. Major NCDs of concern are Cardiovascular Diseases, Cancer, Chronic Respiratory diseases and Diabetes. In our lifestyle, four behavioural risk factors contribute to a substantial number of these diseases are Smoking, Bad dietary patterns, Physical inactivity and excessive alcohol consumption. Ayurveda is a time-honoured discipline of health and medicine which encompasses an understanding of life and the pursuit of longevity. Ayurveda describes its principles of Dincharya, Ritucharya, Aahar, Nindra, Sadvritta, and Panchkarma in detail which are the major tools to combat NCDs along with the Practice of Yoga. In this review article emphasis is given to reviewing these principles in concern to the NCDs with recent knowledge also.

**Keywords:** Lifestyle disorders, NCDs, Ayurveda

### Introduction

Lifestyle disorders, often known as non-communicable diseases (NCDs), are gaining prominence throughout the adult population in both industrialized and developing nations. In the year 2016, the global population witnessed a cumulative loss of 57 million lives. Out of the total 41 million cases were attributed to non-communicable diseases (NCDs) with cardiovascular illnesses, cancer, chronic respiratory diseases and diabetes being the primary contributors [1]. India is currently undergoing a swift health transition characterized by an increasing burden of non-communicable diseases (NCDs), which is leading to substantial levels of illness and death among both urban and rural populations. When examining the proportional mortality in India, it is shown that 63% of fatalities are attributed to non-communicable diseases (NCDs). Furthermore, India accounts for over two-thirds of the total deaths caused by NCDs in the Southeast Asia Region (SEAR) as defined by the World Health Organisation (WHO). The most significant contributors to the morbidity and mortality resulting from non-communicable diseases (NCDs) are four specific types: cardiovascular disease, cancer, chronic respiratory disorders, and diabetes. Four behavioural risk factors contribute to a substantial number of these diseases, namely smoking, bad dietary patterns, physical inactivity, and excessive alcohol consumption. The primary metabolic risk factors encompass obesity, elevated blood pressure, increased blood glucose, and elevated total cholesterol levels [2]. Ayurveda is a time-honoured discipline that encompasses the understanding of life and the pursuit of longevity.

While encompassing discussions on disease prevention and management, the primary objective of this system is to uphold an individual's state of well-being, known as Swasthasya swasthya rakshanam [3], with the aim of averting diseases. In order to preserve a state of good health, it is essential to maintain a harmonious equilibrium of the Tridosha (three humours) - *Vata*, *Pitta*, and *Kapha*, as well as the *Sapta Dhatu* (seven tissues)- *Rasa* (plasma), *Rakta* (blood), *Mamsa* (muscle), *Meda* (fat), *Asthi* (bone), *Majja* (marrow), and *Shukra* (reproductive tissue). Additionally, the normal functioning of Agni (digestive fire) and excretory processes (Malkriya) must be upheld, alongside the wellbeing of the *atma* (soul), *indriya*

(senses), and *mana* (mind) [4]. The Agni, also known as the digestive fire, plays a crucial role in the metabolic process of converting ingested food into a usable form for tissue nourishment, known as Dhatu Poshan. In Ayurveda, the disruption of Agni is widely regarded as the underlying factor contributing to the development of various diseases. Prameha and its variant *madhumeha*, sthoulya and vatarakta are the most prominent lifestyle ailments documented in Ayurvedic literature. The present article aims to elucidate the risk factors associated with lifestyle diseases and explore the potential of Ayurveda in preventing such conditions.

### Risk Factors of Life Style disorders [5]

- 1- **Insufficient physical activity**- Physical inactivity is responsible for an estimated annual mortality rate of approximately 1.6 million individuals. Physical inactivity has been found to diminish the mean calorie expenditure and contribute to weight gain and fat accumulation over an extended period of time. Consequently, this increased propensity for weight gain and fat accumulation increases the susceptibility to developing cardiovascular disease, diabetes, and dyslipidaemia.
- 2- **Unhealthy diet**- Adequate consumption of fruit and vegetables reduces the risk of cardiovascular diseases, stomach cancer and colorectal cancer most populations consume much higher levels of salt than recommended by WHO; high salt intake is an important determinant of high blood pressure and cardiovascular risk. High consumption of saturated fats and trans fatty acids is linked to heart disease.
- 3- **Overweight and obesity**- the risk of heart disease, stroke and diabetes increase steadily with increasing body mass index(BMI). Raised BMI is also linked to certain cancers. Our adipocytes secrete a hormone called – adiponectin which is also known as ‘guardian angel against obesity’ and it’s a fat-burning molecule. It is more abundant in lean individuals than obese individuals. It directs fatty acids to muscle for their oxidation and decreases the influx of fatty acid to the liver and total hepatocyte triglyceride content. Adiponectin also decreases glucose production in the liver, increases insulin sensitivity and thus protects against metabolic syndrome [6].

Inflammatory action of adipose tissue- Adipose tissue also produces cytokines such as TNF, IL-6, IL-1 and IL-18 and chemokines. Increased production of cytokines and chemokines by adipose tissue creates a sub-clinical inflammatory state that includes increased C-reactive protein.

Obesity is the main driver of a cluster of alterations known as metabolic syndrome characterized by visceral/intra-abdominal adiposity, insulin resistance, hyperinsulinemia, glucose intolerance, hypertension, hypertriglyceridemia and low HDL levels.

Obesity is also linked to many cancers. It has been found that men with a BMI >25kg/M<sup>2</sup> are at greater risk of developing adenocarcinoma of the esophagus, and cancer of the thyroid, colon and kidney. In women, BMI>25kg/M<sup>2</sup> is strongly correlated with adenocarcinoma of esophagus and endometrial, gall bladder and kidney. This increased cancer risk in obese individuals is a consequence of hyperinsulinemia and insulin resistance. Hyperinsulinemia causes an increase in insulin-like growth factor-1 concentrations which is a mitogenic and anti-apoptotic agent [7].

Discussing the risk factors associated with lifestyle problems in *Ayurveda*, the following factors are the top contributors to the development of non – non-communicable diseases.

1. Inappropriate *Dincharya* (daily routine)
2. The individual exhibits a lack of adherence to *ritucharya*, which refers to the prescribed seasonal regimen.
3. The concept of "*Mithya ahara vihara*" refers to the consumption of an inappropriate diet.
4. The concept of *Vega dharan*, often known as the suppression of natural urges, is a topic of interest in academic discourse.
5. *Avyayam*, which refers to a sedentary lifestyle.

6. The absence of prompt biourification, specifically the *Panchkarma* treatment.
7. *Asamyaka Nidra* Poor Sleep Patterns
8. The concept of "*Virrudhahara*," which refers to an incompatible diet
9. Excessive consumption of recently harvested cereals, alcoholic beverages, dairy products, aquatic animal meat, refined white flour, and sugar.
10. Excessive consumption of foods that are oily, sweet, heavy, and unctuous.

### Role of Ahara and Nidra in Lifestyle disorders

*Trayo-upstambh* (Three sub-pillars of life)- *Ahara* (food), *nidra* (sleep), and *brahmacharya* (celibacy) are three sub-pillars of life. When these pillars are observed diligently, the body remains gifted with strength, complexion, and development. Among these three *Ahara* and *Nidra* play very important roles in the occurrence or prevention of lifestyle diseases.

**Ahara**- One of the three sub-pillars of life pertains to substances ingested for the purpose of nourishment and energy, which can manifest in numerous forms such as edible, drinkable, and lickable items. Ahara is called the '*Prana*' of human being - praninam punarmulamaharo.

Regarding the consumption of *ahara*, or food Ayurveda established certain specific aspects that should be taken into account when consuming food in order to derive its health benefits. These elements are referred to as "*Ashta Ahara Vidhi Vishesh Aytan*" [8].

They are;

1. *Prakriti*- Natural quality of food
2. *Karan*- Processing of food
3. *Samyog*- combination of food
4. *Rashi* - quantity of food
5. *Desh* - place of cultivation of a food item
6. *Kala*- Time of food intake
7. *Upyog sanstha*- Rules of food intake
8. *Upyokta*- A person who consumes food

Out of these eight elements we are mainly focusing on *Ahara rashi* and its role in lifestyle disorders

**Rashi (quantity of food)**-The term "Rashi" refers to the characteristic or attribute associated with the quantity of food. Ayurveda provides an explanation of the significance of *aharmatra* and its impact on the process of digestion. There exists a specific amount of food that must be ingested. Individuals, regardless of their physical condition, are required to take food in restricted quantities. The limit of quantity is contingent upon the individual's Agni, which refers to their digestive capacity. The consumption of an optimal diet necessitates the appropriate portion size.

There exist two distinct categories of *rashi*.

- 1) In the *sarvagraha* approach, the consumption of food involves considering the complete of its quantity, encompassing all substances, ingredients, and components to be supplied.
- 2) *Parigraha* refers to one of the individual components found within food.

Regarding *Ahara Matra* there is a unique concept in Ayurveda which is postulated by *Acharya charak* in *Trividhukukshiya adhyaya* of *Vimansthan*. It states that a person should imaginarily divide his stomach intake capacity into three parts. One part should be filled with solid food items, one part with liquids and the remaining third part should be left for *Tridosh* for their normal functioning [9]. This



simple rule can prevent a person from many metabolic and lifestyle diseases, especially Obesity. This theory looks similar to the concept of calorie restriction in today's era. Studies in model organisms, from yeast to mammals, have shown that the most effective way of prolonging life is calorie restriction. The effect of calorie restriction on longevity is mediated by a family of proteins called *sirtuins*. *Sirtuins* are thought to promote the expression of several genes whose products increase longevity. These products include proteins that increase metabolic activity, reduce apoptosis, stimulate protein folding and inhibit the harmful effects of oxygen free radicals. *Sirtuins* also increase insulin sensitivity and glucose metabolism and may be the target for the treatment of diabetes. In research, it has been found that calorie-restricted animals have modest age-related decline in immunological functions, less oxidative damage, and greater resistance to cancer as well [10].

There are six distinct tastes known as *Shadrasa* in *Ayurveda*, including *Madhura* (sweet), *amla* (sour), *lavana* (salty), *katu* (pungent), *tikta* (bitter), and *kashaya* (astringent). Each food item has the potential to possess one or more of the six *rasa*, or flavours. When an individual consumes a diet that is rich in *Shadrasa* (six tastes), it can potentially boost their overall strength and vitality. Conversely, an uneven intake of one or more tastes in the diet can lead to the development of diseases or a decrease in the individual's strength and vitality. For instance, the excessive use of *madhur*, *amla*, and *lavana* rasa can potentially lead to the development of *Prameha* or *Madhumeha*. Likewise, the consumption of a single rasa in one's diet may lead to a decrease in the presence of essential protective elements within the dietary intake. According to contemporary medical research, there exist various variables that contribute to the development of cancer, namely exogenous carcinogens, endogenous carcinogens, and a deficiency of protective dietary elements such as vitamin C, E, beta-carotenes, and selenium, which possess anticarcinogenic activities due to their antioxidant properties [11]. Consuming a diet that includes *Shadrasayukta Ahara* may have the potential to mitigate the risk of developing severe ailments such as cancer.

### Concept of *Ama* and Inflammation

Ayurveda says that every individual should eat according to his/her *Agni* (Digestive capacity). If a person takes excessive food it turns into *Ama*. The term is used as a technical word for anything that exists in a state of incomplete transformation. It is mentioned in various contexts like a) In particular, it can refer to a toxic by-product generated due to improper or incomplete digestion. b) Toxins that are produced at any stage of metabolism and that are circulating through the channels are also sometimes. c) The first stage of any disease is also frequently. d) Any substance which is present in its abnormal state and is unwanted in the body. It represents in a gross sense, mere indigestion which begins in the stomach and in a finer sense, even a faulty enzymatic pathway that prevents or hampers a metabolic cycle or chain. It is a very important factor playing a pivotal role in the genesis of any disease. In modern medicine, it is now known that the inflammatory milieu is mediated by pro-inflammatory cytokines that are secreted in response to excessive nutrients such as free fatty acids and glucose that result in both insulin resistance and beta-cell dysfunctions. So to prevent this inflammatory cascade one has to prevent the formation of *ama* and that can be achieved by eating according to *Agnibala* (strength of digestive fire).

**Nidra-** One of the three sub-pillars of life pertains to the essential upkeep of one's health and involves the withdrawal of the mind (*mana*) and sense organs (*indriyas*) from external objects due to exhaustion. Proper sleep results in *Dhatu samya* (homeostasis) and improper sleep may cause many diseases like obesity and diabetes. Metabolic syndrome and disturbed sleep exhibit numerous overlapping phenotypical traits and risk factors, such as a higher occurrence in middle-aged and elderly individuals, central adiposity-associated obesity, hypertension, dyslipidemia, and hyperglycemia. The misalignment of sleep patterns and nocturnal eating has a detrimental impact on cardiometabolic variables, including obesity, glucose levels, and cholesterol levels [12].

The presence of insomnia has been identified as a potential risk factor in the development of metabolic syndrome. The metabolic syndrome and its components have been found to be connected with

specific symptoms of insomnia, including challenges in both beginning and maintaining sleep. Circadian misalignment is induced when individuals engage in sleep and eating patterns that deviate from the conventional light-dark cycle and are out of sync with the central circadian clock. The occurrence of circadian misalignment has been found to be linked with compromised regulation of glucose and heightened levels of inflammatory markers. Individuals who have prolonged circadian misalignment are more susceptible to an elevated body mass index, diabetes, cardiovascular disease (CVD), and stroke. *Ayurveda* has demonstrated *Diwaswapna* or Daytime sleep as a causative factor of diseases like obesity and Diabetes. Excess daytime sleep can disrupt an individual's night sleep routine that may result in many above-mentioned diseases. For the prevention of Insomnia or *nidranash* one should maintain proper sleep hygiene as well there are certain procedures and medications that prevents insomnia. Among the procedures, *Murdhni Tail* is mentioned by *Acharya Charak* in *Dincharya*. *Murdhni tail* is a method of applying oil on the scalp and it promotes sound sleep and thus prevents insomnia and its future complications. They are some herbs mentioned in *Ayurveda* like *Ashwagandha*, *brahmi*, *tagara*, *Jatamansi* that can be used to treat insomnia.

*Desh* is the place where food items are grown or cultivated. *Habitat* is a geographic region. It indicates variation in the quantities of substances, due to differences in the soil, *Habitat* is a geographic region. It indicates variation in the quantities of substances, due to differences in the soil, use and climate. It is postulated in *Ayurveda* that an individual should consume food items cultivated in his/her *desh/habitat*.

### **Role of *Dincharya* (Daily Regimen)**

The term "*Dinacharya*" originates from Sanskrit and is composed of two components: "*Dina*" which signifies day, and "*charya*" which refers to activity or action. The purpose of this design is to uphold and establish a connection between individuals and their circadian rhythm, also known as their internal body clocks. The significance of maintaining a consistent daily schedule in *Ayurveda* should not be overlooked. The morning routine establishes the overall ambience for the entirety of our day, instilling a feeling of tranquillity and a positive mental state. Engaging in this activity provides an opportunity for the body, mind, and spirit to establish a sense of stability and undergo purification. *Dinacharya* provides insights into the optimal timing for various daily activities, including waking, exercising, bathing, meditating, engaging in prayers, consuming meals, studying, working, relaxing, and achieving restful sleep. The concept of *Ayurveda's* focus on establishing a connection between individuals and the natural world has been present for thousands of years. However, researchers in the Western scientific community are now starting to recognise the significance of maintaining a harmonious relationship between our bodies and the natural rhythms of the environment. The phenomenon of being disconnected from the natural circadian rhythm is commonly referred to as *chronodisruption*. This condition has been associated with several health issues, such as impaired cognitive function, emotional disturbances, sleep disorders, excessive daytime sleepiness, and decreased academic and occupational performance. The health conditions associated with the excessive use of substances include substance misuse, cardiovascular disease, diabetes, obesity, and certain types of cancer. Various factors, such as dietary choices and activities, can significantly disrupt the circadian regulation of physiology, metabolism, and behaviour. These factors include stress, excessive exposure to technology, and other related influences. Consequently, these disruptions can further impact metabolic processes, potentially initiating a detrimental cycle of negative effects.

1. Waking up - The optimal time to awaken is approximately three hours prior to sunrise, or between half an hour to one hour prior to sunrise. In *Ayurveda*, the term utilised to refer to this particular time period is known as *Brahma Muhurta*. During the early morning hours, the prevalence of *Sattva Guna* renders it the optimal time for engaging in meditation practices. After a night of sleep, the body is adequately refreshed, while the mind is in a state of heightened alertness, concentration, and tranquillity.

2. *Vyayam* - regular exercise is a very important factor in preventing lifestyle disease. It not only keeps one physically fit but also works as an antidepressant and mood elevator technique.
3. *Abhyang and Murdhni tail*- Ayurvedic *Dincharya* includes *Abhyanga* (body massage) and *Murdhni Tail* (oil application to the scalp). Both procedures promote sound sleep and thus prevent NCDs indirectly.

### **Role of *Ritucharya* (Seasonal Regimen)**

The classification of *Ritucharya*, or seasonal regimen, based on many criteria, demonstrates distinct impacts on both the human body and the surrounding environment. Ayurveda has provided a comprehensive set of guidelines and practices pertaining to diet and lifestyle, aimed at facilitating the seamless adaptation to seasonal changes while maintaining the body's equilibrium. The concept of seasonal regimes, known as *ritucharya*, involves the implementation of various therapies according to each season. For instance, therapeutic emesis (*vamana*) is recommended during the spring season (*vasanta*), therapeutic purgation (*virechana*) is advised in autumn (*sharad*), and therapeutic enema (*basti*) is recommended during the monsoon season (*varsha*) [13]. It is recommended to make appropriate adjustments to one's food and lifestyle in accordance with seasonal variations. The primary focus of the Ayurvedic system of medicine is the preventive aspect, which can be attained through the adjustment of diet and lifestyle in accordance with variations in climatic conditions. *Ritucharya* is a significant component of preventive measures for a range of ailments, including lifestyle disorders, as documented in *Ayurvedic* scriptures (Ayurveda being a traditional system of medicine originating from India). *Ayurveda* is a unique medical system globally that advocates for the regular cleaning of the human biological system, spanning from the gross level to the molecular level, in order to make it conducive to self-recovery and therapeutic efficacy. The human biological system endures ongoing physiological degradation and necessitates regular cleansing and rejuvenation. Hence, *Ayurveda* recommends the implementation of seasonal *Panchakarma* as a proactive approach to uphold and enhance both physical and mental well-being.

In Ayurveda, the idea of *Rasayana*, which pertains to rejuvenating methods, includes the utilisation of medicinal dietary supplements in addition to food and nutrition. *Rasayanas* possess the potential to serve as both nutritional supplements and medicinal agents, contingent upon their diverse classifications. The nourishing and rejuvenating effects of most *Rasayanas* are achieved through the promotion of *Agni* and *Bala*, as well as their direct nutrient properties. Additionally, they facilitate *Srotoprasadan*, which purifies the body channels and consequently enhances the nutritional status. This ultimately contributes to an enhanced quality of *Dhatus* or bodily tissues. The *Rasayanas* are a broad category of supplements that are known for their restorative and rejuvenating properties. It is worth noting that certain *Rasayanas* can be specifically targeted towards particular tissues and organs. For instance, *Medhya Rasayana* is designed to benefit the brain, *Hridya Rasayana* is intended for the heart, and *Twachya Rasayana* is formulated for the skin, among others.

### ***Sadvritta* and *Achara Rasayan***

Ayurveda encompasses a set of guidelines for ethical behaviour known as *Sadvritta* and *Achara Rasayana*. The practices encompassed by *Sadvritta* and *Achara Rasayana* can be classified into various categories, including personal, social, psychological, and emotional. Personal practices involve adhering to routines such as maintaining a regular sleep schedule, avoiding excessive physical exertion, refraining from suppressing natural bodily urges, following a bathing regimen, and maintaining the cleanliness of the skin. Social practices encompass displaying compassion towards others, speaking truthfully, abstaining from alcohol consumption, cultivating a gentle disposition, and consistently wearing clean and laundered clothing. Psychological and emotional practices involve striving for a stable mental state by avoiding extreme emotional fluctuations, refraining from dwelling on insults received from others, and

cultivating patience, among other strategies. The adoption of such a lifestyle adaptation is consistently beneficial in various aspects.

### **Utility of Panchkarma in preventing lifestyle disorders [14]**

*Panchakarma* is a distinctive therapeutic approach within the field of *Ayurveda*, encompassing five primary processes aimed at internally purifying the body, along with supplementary techniques. The use of purification protocols in *panchakarma* facilitates the restoration of the biological system to a state of homeostasis, hence enabling a swift process of rejuvenation.

Benefits of bio cleansing (*shodhana*)

- Increases metabolic fire (*agni*): Proper bio cleansing (*shodhana*) followed by proper diet plan (*samsarjana*) improves the digestive and metabolic processes (*agni*) or correct the metabolism. When metabolism is intact, the natural immunity will be at its optimum.
- Improves intelligence and strengthens sense organs
- Attain stability of body tissues: Biocleansing clears the accumulated dosha and thus prevents further aggravation of disease.
- Increases longevity: By acquiring the above said benefits the life expectancy will also increase. Purification therapies followed by rejuvenating therapy contribute antioxidant action and free radical scavenging activity. This minimizes free radical induced damage which is a key cause of aging

### **Disease Specific Preventive Measures**

#### **Preventive measures for Diabetes (*madhumeha*) [15]**

##### ***Pathya* (Dos)**

- Regular exercise especially walking.
- Timely intake of diet.
- Intake of old harvested cereals, barley (*Yava*), Sorghum (*Jowar*), whole wheat atta, bitter gourd (*Karela*), green leafy vegetables, garlic (*Lasuna*), turmeric (*Haridra*), aloe (*Kumari*) in vegetables and fruits like Guava, Oranges, Indian Blackberry (Jamun) etc. may be useful.
- Reduce intake of rice, food rich in carbohydrates and fried or processed food.
- Regular practice of Yoga, Meditation etc. under the supervision of Yoga specialist is suggested.

##### ***Apathya* (Don'ts)**

- Sugarcane juice, jaggery, sugar, milk products.
- Sedentary lifestyle.
- Sleeping in the day time and excessive sleeping
- Alcohol
- Staying too long on empty stomach. Cold drinks, ice cream, burger- pizza and other fast foods etc.

The role of *ahara* (dietary regimen) & *vihara* (lifestyle) are equally or even more important in diabetes to control blood sugar level as well as to prevent complications of this disease.

### **Yogic management**

The Yogic practices are found to be useful in the management of Diabetes mellitus through various research studies. The aim of the Yogic treatment in the management of diabetes is twofold: a. To

stimulate the pancreatic cells to produce adequate amount of Insulin b. To reduce Insulin resistance In general, the practices prescribed for Diabetic patients are as under:

*Kriyas: Kunjal, Kapalabhati, Agnisara.*

Selected Asanas: *Suryanamaskara, Tadasana, Katichakrasana, Sarvangasana, Halasana, Matsyasana, Ushtrasana, Gomukhasana, Ardhamatsyendrasana, Mandukasana, Paschimottanasana, Pawanmuktasana, Bhujangasana, Shalabhasana, Dhanurasana, Vajrasana, Shavasana.*

*Pranayama: Nadishodhana, Suryabhedhi, Bhastrika*

*Bandhas: Uddiyana Bandha*

### **Preventive measures for Hypertension**

#### **Pathya (Dos)**

- Regular blood pressure check-up.
- Lifestyle modifications like timely intake of balanced diet, more use of fruits and green vegetables.
- Regular physical exercise.
- Daily brisk walking for half an hour
- Reduce intake of oily, salty, sour and spicy food items.
- Weight reduction.
- Barley (*Yava*), sorghum (*Jowar*), wheat, green gram (*Mudga/Moong dal*), horse gram (*Kulatha*), moringa (*Shigru*), Bitter gourd (*karela*), bottle gourd (*Ghia/ Lauki*), turnip (*Shalgam*), carrot (Gajar), radish (*Muli*), Indian gooseberry (*Amla*), cucumber (*Kira*), black grapes (*Draksha*), pomegranate (*Anar*), apple, pineapple, cold milk etc.
- Timely sleeping and awakening.
- Regular practice of Yoga, Meditation etc. under the supervision of Yoga expert.

#### **Apathya**

- Excessive intake of salt (sprinkling over salad, curd etc.)
- Excessive use of butter, ghee, chillies (red-green), pickles, Sesame Oil (*Til taila*), Bengal gram (*Chana Dal*), mustard oil (*Sarson ka Taila*), sour fruits, curd, tea, coffee etc.
- Intake of animal fat, processed/oily food items.
- Alcohol consumption and smoking.
- Practice of day sleeping and awakening at night

### **Yogic practices for Hypertension**

The role of Yoga in the management of Hypertension is well documented. This is to be done under the supervision of Yoga Instructor (in consultant with an Ayurvedic Physician). In general, the practices prescribed for the Hypertension cases are:

*Kriyas: Jalneti.*

Selected Asanas: *Tadasana, Katichakrasana, Konasana, Uttanapadasana, Pawanmuktasana, Vajrasana, Ushtrasana, Shashankasana, Bhujangasana, Gomukhasana, Makarasana, Vakrasana, Shavasana.*

*Pranayama: Nadishodhana, Ujjayi, Shitali, Sitkari and Bhramari.*

Meditation: Breath awareness.

Contraindications: The head stand (*Shirshasana/Topsy-turvy*) postures and hyperventilation breathing practices should be avoided. Concentrate more on pranayama and meditation than the other practices.

### **Preventive measures for Obesity (*Sthoulya*) and Dyslipidemia (*Medoroga*)**

Obesity, known as *Atisthaulya* in Ayurveda, is classified and characterised as one of the eight undesirable conditions according to Charaka.

An individual with excessive buildup of Meda (adipose tissue) and *Mamsa* (muscle tissue), resulting in a flabby appearance in the hips, belly area and breasts, is classified as *Atisthula*. In Ayurveda, it is classified as one of the *Santarpanotha Vikaras*, which are diseases caused by excessive calorie intake. Disorders of fat metabolism, known as *medodushti*, have been identified as potential risk factors for Ischemic Heart Disease (IHD). Lipids can be readily associated with Medo Dhatu. The presence of an atypical composition of Medo Dhatu is regarded as Medo Dosh, which ultimately leads to the manifestation of *Medoroga*. *Medoroga* is a pathological condition characterised by the disturbance of Agni, particularly *Medodhatvagni*, leading to the excessive formation of Medo Dhatu. This excess Medo Dhatu subsequently accumulates in the *Srotas*, causing obstruction to the flow of Vata. As a result, the Vata dosha becomes aggravated and moves back into the *Pakvashaya*, further stimulating Agni and necessitating frequent meals. This perpetuates a vicious cycle, ultimately resulting in the manifestation of *Medoroga*.

#### ***Pathya* (Dos)**

- Intake of regular and balanced diet.
- Use of lukewarm water (*Ushnodaka*) for drinking.
- Use of Barley (*Yava*), Sorghum (*Jowar*), Indian gooseberry (*Amla*), Honey (*Madhu*) and Butter milk (*Takra*)
- Use of Green gram (*Moong*), Horse gram (*Kulathi*), Bengal gram (*Chana*) and Spilt Red Gram (*Arhar*)
- Plenty of green leafy vegetables and fruits
- Fibrous food items
- Brisk walking and jogging in fresh air every day in early morning
- Regular exercise
- Practice of Yoga & Naturopathy in consultation with the specialist

#### ***Apathya* (Don'ts)**

- Frequent and excessive intake of oily / heavy food items
- Sleeping in day time (*Diva-swapna*)
- Sleeping immediately after taking meals
- Canned food products
- Sedentary lifestyle.
- Junk food like burger, pizza, cold drinks and fried food items

#### **Yogic management**

*Kriyas: Kunjal, Kapalbhati.*

Selected Asanas: *Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavanmuktasana, Ardha Padmasana, Padmasana, Pascimottanasana, Halasana, Bhujangasana, Shalabhasana, Dhanurasana, Naukasana, Navasana, Parvatasana, Vakrasana, Padahasthasna, Vajrasana, Shashankasana, Sarvangasana, Ardhamatsyendrasana, Shavasana*

*Pranayama: Nadishodhana, Suryabhedhi, Bhastrika*

#### **Conclusion**

Ayurveda advocates healthy balanced food and lifestyle with an individualistic approach with a unique Philosophy of mind-body constitution and set of life circumstances. With appropriate use of Ayurvedic preventive measures such as *Dincharya*, *Ritucharya*, *Ahar vidhi* and therapeutic measures most of the NCDs can be prevented at all levels and longevity can be achieved which is the target of Ayurveda i.e. *Jivet Shardah Shatam....*

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## Causes, Characteristics, Consequences and Control (4C) of Lifestyle Diseases

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### Introduction

Lifestyle disease is a broader term for those non-communicable diseases (NCDs) whose occurrence is primarily based on the daily habits of people and which are the results of an inappropriate relationship of people with their environment. Lifestyle diseases are also often referred to as chronic diseases because the diseases require long-term treatment. Lifestyle diseases are found to be increasing in frequency as countries become more industrialized and people live longer. It used to be a disease of the industrialized countries and so-called "Western diseases" or "diseases of affluence",<sup>1</sup> however, it is spreading fast in the developing countries also. There are numerous lifestyle diseases that are increasing with changing times and with development in all fields of life. Some of the lifestyle diseases are Alzheimer's disease, Arthritis, atherosclerosis, Asthma, Cancer, Chronic liver disease or Cirrhosis, Chronic obstructive pulmonary disease (COPD), type 2 diabetes (NIDDM), Heart disease, Metabolic syndrome, Chronic renal failure, Osteoporosis, Stroke, Depression and Obesity. This is commonly caused by alcohol, drug and smoking abuse, occupation as well as lack of physical activity and unhealthy eating pattern. Globally 14.2 million people between the ages of 30-69 years die prematurely each year from lifestyle diseases. Lifestyle diseases have emerged as bigger killers than infectious or hereditary ones. The WHO has recognized India as one of the nations with the maximum number of lifestyle-related disorders in the future. India is already been considered as the diabetes capital of the world.<sup>2</sup>

### 1) Causes of Lifestyle Diseases

Diet and lifestyle are chief factors thought to influence susceptibility to lifestyle diseases. The commonest causes of lifestyle disorders are eating unhealthy foods, overeating, and over-dependence on processed foods, energy drinks, artificial sweeteners, and fast foods. Sedentary living, stress, smoking, drinking alcohol, and poor sleeping habits are all attributed mainly to the so-called modern living habits and urbanization added to altered eating habits making the situation worse.<sup>3-4</sup> The causes of lifestyle diseases can be divided into three broad categories<sup>5</sup>:

<b>Modifiable behavioural risk factors</b>	Behavioural risk factors such as excessive use of alcohol, bad food habits, eating and smoking tobacco, physical inactivity, wrong body posture and disturbed biological clock, desk jobs and the stress related to work etc.
<b>Non-modifiable risk factors</b>	Non-modifiable risk factors are age, race, gender genetics etc.
<b>Metabolic risk factors.</b>	Main Metabolic risk factors are increased blood pressure, obesity, increased blood glucose levels or hyperglycemia and increased levels of fat in the blood or hyperlipidemia. Increased blood pressure is the most leading metabolic risk factor globally (19%).

### 2) Characteristics of Lifestyle Diseases

The main characteristics of lifestyle diseases are:

- ❖ Complex etiology
- ❖ Multiple risk factors
- ❖ Long latency period
- ❖ Non-contagious origin non-communicable)



- ❖ A prolonged course of illness
- ❖ Functional impairment of the disability

Lifestyle diseases are not communicated from one person to another, so it is a given that these diseases develop in a person from non-contagious origins. These are chronic in nature and thus the course of illness is often prolonged and takes years before a patient may be forced to opt for medical care or intervention. Apparent causes such as raised blood pressure, increased blood glucose, elevated blood lipids and obesity may be representations of deep-lying lifestyle disease.

### 3) Consequences of Lifestyle Diseases:

The Main consequences of lifestyle diseases are:

- ❖ **Heart Disease:** Heart diseases are the main consequences of lifestyle diseases and refer to conditions involving the heart, its valves, muscles, vessels, or internal electric pathways responsible for muscular contraction. Some of the commonly occurring conditions of heart diseases are heart failure, arrhythmias, cardiomyopathy, coronary artery disease etc.
- ❖ **Obesity:** Individuals become obese because of unhygienic and unhealthy eating habits, reduced physical activity, stressful lifestyles, and other factors. Obese individuals have a body mass index (BMI) greater than 25, and they suffer from cardiovascular diseases, breathing problems, blood pressure, and diabetes. This is a primary disorder that can result in several other chronic diseases in an individual.
- ❖ **Type 2 Diabetes:** Type 2 diabetes refers to a condition where cells cannot utilize glucose or blood sugar efficiently for energy. This occurs when the cells become insensitive to insulin, and the blood sugar levels gradually become too high. A combination of several factors like broken beta cells, extra weight, metabolic syndrome, etc., are responsible for the cause of this lifestyle disease.
- ❖ **Stroke:** A stroke occurs when a portion of the brain loses blood supply and stops working. This results in the part of the body being controlled by the injured brain to stop working. A stroke is also known as a "brain attack", cerebrovascular accident, or CVA. A stroke is mainly caused because of two reasons – bursting or leaking of a blood vessel (Haemorrhagic stroke) or a blocked artery (ischemic stroke).
- ❖ **Hypertension:** Hypertension or high blood pressure refers to the tension or high pressure in the arteries - the vessels responsible for carrying blood from the heart to the rest of the body. The various complications of hypertension are kidney (renal) disease, heart disease, eye damage, stroke (brain damage), and hardening of the arteries (arteriosclerosis or atherosclerosis).
- ❖ **Chronic Obstructive Pulmonary Diseases (COPD):** Chronic obstructive pulmonary disease (COPD) refers to a chronic lung disease that leads to obstructed and inflamed airflow from the lungs. The various symptoms of COPD include chronic cough with mucus, wheezing, long-term breathing issues, etc. The common causes of this lifestyle disease are genetics, smoking, and environmental factors like gas leaks and pollution.
- ❖ **Asthma:** Asthma is a long-term inflammatory lifestyle disease caused because of the narrowing and swelling of the airways. This common chronic disorder leads to shortness of breath, wheezing, prolonged coughing, and chest tightness.
- ❖ **Osteoporosis:** Osteoporosis is a lifestyle disorder caused because of a lack of androgen hormones in men and estrogen hormones in women. This bone-weakening disease is an example of a commonly occurring lifestyle disease in India, and there are over 10 million cases recorded per year.

### 4) Control of Lifestyle Diseases

As Ayurveda is recognized as the foremost life science and describes ways to prevent and manage lifestyle disorders, the world is being attracted towards its potential. Ayurveda provides better solutions in

the forms of proper dietary management, lifestyle advice, Panchakarma like detoxification and bio-purification procedures, medicaments, and rejuvenation therapies. The holistic approach of Ayurveda, treating the patient, meaning intervention targeted toward complete physical, psychological, and spiritual well-being makes this science a wonderful option in lifestyle disorders. In the management of lifestyle diseases, Ayurveda offers various regimens including *Dinacharya* (daily regimen), *Ritucharya* (seasonal regimen), *Panchakarma* (five detoxification and bio-purification therapies), and *Rasayana* (rejuvenation) therapies. The *Sadvritta* (ideal routines) and *Aachara Rasayana* (code of conduct) are of utmost importance to maintain a healthy and happy psychological perspective.<sup>6</sup> The inclusive utilization of all these treatment modalities has a great effect on lifestyle disorders. Moreover, the application of organ-specific Rasayana herbs also provides enough scope not only for the prevention of disease but also for the promotion of health and cure of disease. *Yogasanas*, *Pranayama* and *Meditation* are very helpful in the management of lifestyle disorders.

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## **Ensuring the Qualitative Care Standards of AYUSH Services in Health Centres**

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### **Introduction**

As need for holistic AYUSH services is increasingly in demand globally and from rural to urban places day by day. The task of providing standardised cost cost-effective AYUSH services and facilities is most needed requirement amongst the sufferers. Understanding the present need for the upgradation of AYUSH services in terms of qualitative care with a prioritised focusing patient safety is the main requirement and objective, which will be going to enhance the services for curative, preventive, and promotive aspects. Addressing the required qualitative health care of the society many initiations have been taken by health care providers at the state and as well as national level to drive a mission to accomplish and setup the standardised care standards, in this present article the vision, objectives and benefits of outcomes of such qualitative standards established are summarised.

### **National AYUSH Mission**

The NAM contemplates the establishment of a National Mission as well as corresponding Missions at the State level. NAM is likely to improve significantly the Department's outreach in terms of planning, supervision and monitoring of the schemes

### **Objectives**

- a. To provide cost-effective AYUSH Services, with universal access through upgrading AYUSH Hospitals and Dispensaries, and co-location of AYUSH facilities at Primary Health Centres (PHCs), Community Health Centres (CHCs) and District Hospitals (DHs).
- b. To strengthen institutional capacity at the state level through upgrading AYUSH educational institutions, State Govt. ASU&H Pharmacies, Drug Testing Laboratories and ASU & H enforcement mechanism.
- c. Support the cultivation of medicinal plants by adopting Good Agricultural Practices (GAPs) so as to provide a sustained supply of quality raw materials and support certification mechanisms for quality standards and good Agricultural/Collection/Storage Practices.
- d. Support setting up of clusters through convergence of cultivation, warehousing, value addition and marketing and development of infrastructure for entrepreneurs.

### **Vision**

- a. To provide cost-effective and equitable AYUSH health care throughout the country by improving access to the services.
- b. To revitalise and strengthen the AYUSH systems making them as prominent medical streams in addressing the health care of the society.
- c. To improve educational institutions capable of imparting quality AYUSH AYUSH education.
- d. To promote the adoption of Quality standards of AYUSH drugs and making available the sustained supply of AYUSH raw materials.

### **Expected Outcome**

- a. Improvement in AYUSH education through an enhanced number of AYUSH Educational Institutions upgraded

- b. Better access to AYUSH services through an increased number of AYUSH Hospitals and Dispensaries coverage, availability of drugs and manpower
- c. Sustained availability of quality raw materials for AYUSH Systems of Medicine.
- d. Improved availability of quality ASU &H drugs through an increase in the number of quality Pharmacies and Drug Laboratories and enforcement mechanism of ASU&H drugs.

### **Accreditation Programmes**

Implementation of Accreditation programmes will lead to ensure the best healthcare practices being practiced by healthcare providers. With the accreditation, the healthcare provider stakeholders can ensure a display of reliable and certified information of facilities, infrastructure and level of care which are the scopes of their services being offered to patients. National Accreditation Board for Hospitals and Healthcare Providers (NABH) is a constituent board of the Quality Council of India (QCI), provide accreditation to Healthcare organizations, for AYUSH sector Hospitals and centres the accreditation Programs have been initiated from the year 2009 onwards, which is running in association with Ministry of Ayush, Govt. of India, the main objective of NABH standards is to improve healthcare quality and patient safety.

### **NABH AYUSH Hospitals Accreditation Programme**

It encompasses relevant & comprehensive quality assurance standards for each system i.e. Ayurveda, Yoga and Naturopathy, Unani, Siddha, Homoeopathy Hospitals and Panchakarma clinics and has separate accreditation standards as per their individual system of medicine and requirements. These are in natural alignment with the Hospital Standards, with a community focus.

### **Outline of NABH AYUSH Hospital Standards**

#### **Patient Centred Standards**

- a) Access, Assessment and Continuity of Care (AAC)
- b) Care of Patient (COP)
- c) Hospital Infection Control (HIC)
- d) Management of Medication (MOM)
- e) Patient Rights and Education (PRE)

#### **Organization Centred Standards**

- a) Continuous Quality Improvement (CQI)
- b) Responsibilities of Management (ROM)
- c) Facility Management and Safety (FMS)
- d) Human Resource Management (HRM)
- e) Information Management System (IMS)

#### **Benefits of Accreditation**

- Patients are the biggest beneficiary among all the stakeholders.
- Accreditation results in high-quality of care and patient safety.
- The patients are serviced by credential medical staff.
- The rights of patients are respected and protected. Patient's satisfaction is regularly evaluated.
- Accreditation to an Ayurveda Hospital stimulates continuous improvement.
- It enables the organization to demonstrate a commitment to quality care and patient safety thereby ensures the best clinical outcomes.
- It raises community confidence in the services provided by the Ayurveda Hospital as services provided by credentialed medical staff.
- It also provides an opportunity for the healthcare unit to benchmark with the best.
- Accreditation status also provides a marketing advantage in competitive health care.
- Finally, accreditation provides an objective system of empanelment by insurance and other third parties.

- The staff in an accredited Ayurveda Hospital is satisfied a lot as it provides for continuous learning, a good working environment and leadership.
- Efficiencies and competencies of staff also get improved in an accredited Ayurveda Hospital.
- It improves overall professional development, knowledge and competencies in systematic ways with defined ownership and accountability of all the staff including Medical and Para Medical Staff.
- Finally, accreditation provides an objective system of empanelment by insurance and other third parties. Accreditation provides access to reliable and certified information on facilities, infrastructure and level of care.

### **Conclusion**

The healthcare care System presently going through an environment of rapid social, economic and technical changes with great concern for the quality of health care being a challenge to meet required healthcare amongst healthcare stakeholder providers to create an environment to ensure qualitative care measures. Ayurveda being a life science is the most required and demanded health care service amongst the needy because of its principles of keeping the health of an individual by its preventive and curative principles. Ayurveda/AYUSH Hospitals and centres are an integral part of delivering AYUSH health care services accreditation system would be the most important approach for improving the quality of health care services of hospitals. Accreditation is an incentive to improve the capacity of national Ayurveda hospitals to provide quality care. The national accreditation system for Ayurveda hospitals ensures that hospitals, whether public or private, national or expatriate, play their expected roles in the national health system leading to an improved level of community confidence and trust, keeping safety and quality into focus, with patient-centred culture, systematic oriented approaches. Thus following the standards and SOPs of NAM and NABH will lead health care services to ensure qualitative outcomes in terms of improved patient satisfaction levels, improved health outcomes, external recognition, enhanced reputation, insurance coverage etc.

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## **Lifestyle Disorders & Their Prevention W.S.R. to Cancer Care**

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### **Abstract**

Ayurveda, an ancient Indian system of medicine, recognizes the importance of psychological well-being in overall health, including Cancer care. Individuals affected with cancer as well as those ongoing treatment for cancer faces a lot of psychological issues, not addressed in a satisfactory manner through any system of medicine. Cancer patients frequently present with anxiety, depression, post-traumatic stress disorder etc. Ayurvedic psychological interventions for cancer patients aim to support their mental and emotional well-being, reduce stress and anxiety, improve coping strategies, and enhance overall quality of life. These interventions may include counselling and psychotherapy, stress management techniques, lifestyle and dietary recommendations, herbal remedies, and lifestyle modifications. Counselling and psychotherapy may involve providing emotional support and facilitating healthy coping strategies. Stress management techniques such as meditation, mindful journaling, and relaxation techniques may help patients manage stress and anxiety. Lifestyle and dietary recommendations may focus on maintaining a healthy daily routine, adequate sleep and a nourishing diet. Herbal remedies & herbs may be used to reduce stress and anxiety. Lifestyle modifications may involve regular exercise, spending time in nature, and engaging in enjoyable activities. Thousands of herbal and traditional compounds are being screened worldwide to validate their use as anti-cancerous drugs. The science of Ayurveda is supposed to add a step on to the curative aspects of cancers that have a resemblance with the clinical entities of Arbuda and Granthi mentioned in Sushruta Samhita.

However, Ayurvedic psychological interventions should be used as complementary or supportive therapies in conjunction with conventional cancer care. Further research and clinical studies are needed to establish the safety and efficacy of Ayurvedic psychological interventions in cancer care and to better understand their mechanisms of action.

**Keywords:** Lifestyle disorders, Ayurveda, Cancer care, Psychological interventions and stress management techniques.

### **Introduction**

The prevalence of Cancer is so high in the Indian population and almost 70-90 per lakh individuals. It is a miserable condition for the individual as far as his physical, mental as well as social health is concerned, but the extent varies as per the individual, as well as the type of cancer. The diagnosis itself affects all the enthusiasm, hope as well as happiness in life. Psycho-oncology is an extensive approach which tends to manage the emotional, social, and spiritual distress which often accompanies cancer. All aspects of health are moreover affected at the very onset of diagnosis itself, than in any other disease.

Traditional systems of medicine always played a vital role in meeting global healthcare needs in past, continuing at present and shall also play a key role in future. India is well known for its rich, centuries-old heritage of traditional medicinal systems i.e. Ayurveda. Ancient Vedas and other scriptures point out the practice of traditional medicines in India.

### **Psycho-Oncology**

Cancer is an illness, which is associated with severe emotional disturbances and distress. Psycho-Oncology deals with the impact of cancer on psychological functioning and also the role that

psychological and behavioural variables play in cancer risk and survival. Sadness and grief are key reactions to a cancer diagnosis. Such a person faces many stressful issues such as changes in body image and self-esteem alterations in day-to-day living, mindset of denial or despair, trouble in sleeping, loss of appetite, anxiety or worry about the future and also the ultimate fear of death apart from the economical and legal concerns.

### **Body-Mind Relation – Ayurvedic view:**

Both mind and body are explained as the substratum of the disease and they are inseparably related. Ayurveda has explained the mind and its affection in many of the diseases affecting the mind as well as the body. The management of these conditions opens wide scope for handling stress and associative problems and efficacy has been reported at the clinical level. The body is being explained as a psychosomatic entity and many curative as well as preventive measures are mentioned for a sound mind. Apart from saareerika (somatic) and maanasika (psychic) diseases, there is another classification- saareera maanasika vyaadhi ie. those presenting with physical problems associated with psychological factors such as soka, krodha etc.

Mental agonies come under the context of “Mano-vikaara” as per Ayurveda. The derangement of doshas of the mind - the rajas and tamas, leads to different types of conditions affecting mind such as chittodvega, vishada etc. The derangement of doshas of the body - Vata, Pitta and Kapha has to be rectified before the management of doshas of the mind, which signifies the importance of Panchakarma or Sodhana in Psychiatry.

### **Ayurvedic Approach to Psychological Conditions**

The mental strength (satva bala) of an individual is the primary factor that determines the health as well as the vulnerability to mental disorders. Sadvritta, Aachaara rasayana (ethical code of conduct), Dinacharya (Daily routine) etc. are explained to be followed so as to lead a peaceful life. Similarly the Vegas (impulses) in relation to the mind have to be controlled or regulated, for the promotion of mental health and avoidance of mental infirmity. These are all the steps mentioned as a part of preventive psychiatry and seem noteworthy.

The mental strength was enhanced or modified and the various diseases of the mind were managed by adopting the non-pharmacological techniques (adravya chikitsa) and psychotherapy (Satvavajaya). Medicines were not given prime priority in the management in Ayurvedic-Psychiatry. Yukti vyapaasraya i.e. conditional use of sodhana as well as appropriate internal medicines for preventive as well as curative aspects are done as well.

### **Non pharmacological approach in Psycho-Oncology**

Satvavajaya techniques are designed to achieve equilibrium of the human mind in dealing with environmental stressors as well as emotional stressors. Charaka has advised to manage the psychological illness with the five-fold methodology - jnaana, vijnaana, dhairya smriti and samaadhi.

Satvavajaya acts on modifying the areas of mental processes such as regulation of the thought process, reframing of ideas, channelization of presumptions, correction of objectives and ideas, proper guidance and advice for making the prompt decision. Such techniques can be adopted in cancer patients as per the condition. Such methods including psychotherapies and relaxation techniques are of real importance in the management of psychological aspects of cancer. Along with the same, rasayana therapy is also adopted for the enhancement of immune status. Such drugs have adaptogenic, immune enhancers, as well as antioxidant properties. The herbs such as Amalaki, Guduchi, Pippali, Ashvagandha, and combinations such as Brahma-rasayana, Chyavanaprasha are advised to be used.

## **Cancer treatment by Ayurveda**

Cancer is the second leading cause of death worldwide and chemotherapy is the commonly used treatment method. The dose-limiting toxicity and development of drug resistance hamper the treatment with chemotherapeutics in the clinic. Cancer patients, who are crippled with this disease and suffering from harmful side effects from chemotherapeutic drugs are turning back to natural remedies hoping for a better cure. Natural therapies such as Ayurveda, make use of plant-derived products in cancer treatment, which may reduce adverse side-effects. This traditional Indian medicine of plant drugs has been successfully used in cancer treatment from ancient times. Cancer treatment with Ayurveda goes back to 7th century BC, where Atreya and Dhanwanthari used herbal medicines to treat the early stages of cancer. Ayurveda describes cancer as inflammatory or non-inflammatory swelling and mentions them as either Granthi (minor neoplasm) or Arbuda (major neoplasm). Herbal decoctions consisting of various herbs with anticancer properties are commonly used in Ayurveda. Many of the herbs used in Ayurveda have been scientifically proven for their anticancer properties, e.g., *Andrographis paniculata*, *Annona muricata*, *Phyllanthus niruri*, *Piper longum*, *Podophyllum hexandrum*, *Tinospora cordifolia*, *Semecarpus anacardium* etc.

To control the harmful side effects of chemo and radiotherapy, Ayurvedic anticancer medicines can be used as adjuvant to improve the quality of life. The Ayurvedic semi-solid pharmaceutical preparation Rasayana avaleha improves the quality of life, if taken as adjuvant along with chemo or radiotherapy. Ayurvedic drugs such as Ashwagandha Rasayana, Brahma Rasayana, Chyavanprasha, Narasimha Rasayana, and Triphala Churna were found to be radio-protective in cancer treatment.

## **Pharmacological Management of Psycho-Oncological Issues**

There are lots of Ayurvedic formulations as well as single drugs which are found to be effective in managing the emotional or psychological problems associated with any condition, including cancer. The dosha status of the clinical presentations is to be assessed prior to fixing the medicines. Anxiety and associated problems are either Vata dominant or of Vata-Pitta while depression-associated conditions are of Kapha dominant or of Vata kaphaja. Also, relaxation techniques such as yogasana and pranayama are found to be effective in enhancing the psychological status and also improving the quality of life in cancer patients as per published studies.

In severe psychological presentations, an inpatient treatment is planned, after considering the bala or general health status of the affected individuals, as they may be ongoing several medicines or therapies for cancer. The protocol is designed as per the clinical presentation. e.g. In the presentation of depression, one has to adopt the Vata kaphahara chikitsa, which includes snehapana followed by Vamana or sodhana nasya. In anxiety or phobia, the protocol to be framed for Vata and Pitta which includes snehapana followed by virechana, ksheeravasthi and samana nasya.

Add on therapies are advised usually without disturbing the main therapy. Treatments such as abyanga, selected swedas, panchakarma procedures such as virechana, vasthi, nasya etc. can be planned as per the condition. The treatments for the head such as siropichu, sirodhara and even sirovasthi work in a very effective manner in all psychological conditions, even in the case of cancer. Selected rasayanas such as pippali, chitraka, kanmada, sankupushpi are administered after the sodhana therapies, after prior assessment of the clinical status. Dietary management with a satwika diet and also cognitive enhancer food such as ghee, gooseberry, raisins, ash gourd etc. are advised. The combined approach of pharmacological as well as non-pharmacological management with dietary regulation seems highly beneficial in clinical practice.

## **Conclusion**

Ayurveda stands for a holistic mode of healthy living and also an absolute management of the disease. Its basement is on a psychosomatic axis for health. This science strictly recommends good mental



health in the maintenance of good physical health and vice versa. Today modern science in the field of psycho-neuro-immunology is proving the relation between one's mental health and immunity; while Ayurvedic science has already established this relationship a bit earlier. Ayurvedic science is also participating in improving the quality of cancer patients nowadays. Ayurveda can help distressed patients in a safe and friendly manner through medicines and a healthy way of life. Mental health issues should be included in the training of healthcare professionals in all areas of medicine, psychology and social work to meet the demands of cancer patients. Further research is needed to determine the effectiveness of different psychological and psychopharmacological interventions in psycho-oncology. Such studies are the need of the hour from the Ayurvedic point of view with appropriate methodologies of research and the whole medical world is expecting much from the Ayurveda in psycho-oncology. The collaboration between traditional medicinal systems such as Ayurveda and contemporary Western biomedicine would be more advantageous for treating complex diseases such as Cancer (Psychological interventions in Cancer Care) more efficiently.

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## **Acceptance of Ayurveda in the World - Problem & its Solution**

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World Health Organization (WHO)<sup>1</sup> defines traditional medicine as "the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness." In some Asian and African countries, up to 80% of the population relies on traditional medicine for their primary health care needs. Ayurveda has made an impact in almost every part of earth. People are not only accepting it but are craving for more specially in America & Europe.

### **Ayurveda in America**

According to Ayurvedic Credentialling, there are more than 30 institutions in the US offering professional training in Ayurvedic medicine<sup>2</sup>. The earliest successful promoters of Ayurveda in America included individuals like Maharishi Mahesh Yogi, Deepak Chopra, Vasant Lad, Robert Svoboda, David Frawley, etc.; who sought to popularize their particular varieties of Ayurvedic practices to a larger audience.

- NAMA- The National Ayurvedic Medical Association (NAMA)<sup>3</sup> is a national organization representing the Ayurvedic profession in The United States of America. As of August 2015, it has total 1089 registered Members<sup>4</sup>.
- Colleges/ Institutes- Ayurveda training programs in the United States fall into four major categories: (1) correspondence programs; (2) full-time training programs; (3) weekend training programs; (4) short-term seminar courses. There is also a division within practitioner training programs, with some of these programs offering internship and others not.
- California College of Ayurveda- founded By Dr. Marc Halpern, on the West Coast of the United States & New England Institute of Ayurvedic Medicine- founded by Dr. AbbasQuatab, on the East Coast of the United States<sup>5</sup>.
- Mount Madonna Institute<sup>6</sup>- It is a non-profit college specializing in the field of Yoga, Ayurvedic medicine, massage and community studies. The Institute is hosted by the Mount Madonna Center in Watsonville, Santa Cruz County, California. It is inspired by Baba HariDass. Kripalu School of Ayurveda<sup>7</sup> @ Interlaken Road Stockbridge, Massachusetts (MA) 01262, USA.

### **AyurvedaIn Europe**

Ayurveda medicine is increasingly popular especially in German-speaking areas of Europe. In the beginning, Ayurveda played a leading role within a trend of deeply relaxing wellness therapies. Today, even in medical circles, Ayurveda is widely recognized as a complementary system of medicine and has reached the threshold of entering into the realm of evidence-based science. In several European countries, such as Italy, the UK, and Germany, doctors can now study Ayurvedic medicine within the framework of postgraduate medical education recognized by medical councils and universities.

- THE ROSENBERG EUROPEAN ACADEMY OF AYURVEDA- The Rosenberg European Academy of Ayurveda<sup>8</sup>(REAA) was founded by Kerstin and Mark Rosenberg in 1993. Over the last few years, REAA has played the role of a spearhead in pioneer work for the recognition and establishment of Ayurveda in German-speaking countries. In addition to its Ayurveda Health and Treatment Center in Birstein, Germany, REAA runs training centers in Austria and Switzerland, as well as in other locations in Germany. For the past 20 years, it has conducted courses on Ayurveda massage, nutrition, and Ayurvedic medicine, training over 4000 adult students in long-term programs,

with 300 doctors among them. In addition, more than 10,000 adult students have attended its further educational programs on various aspects of Ayurveda and Yoga<sup>9</sup>.

- EURAMA (European Ayurveda Medical Association)<sup>10</sup>
- European Ayurveda Association (EUAA)- The EUAA now represents institutions and organizations from 12 of the 32 countries in the European Economic Area (EEA)<sup>11</sup>.
- In the EUAA, organizations, institutions and individuals have joined forces from the following countries: Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Latvia, Netherlands, Portugal, Slovenia, Switzerland and Turkey.

### **European World Ayurveda Congress 2016-**

The 2nd European World Ayurveda Congress (EWAC#2) will take place at 15 & 16 October 2016 in Koblenz / Germany. Health expo & scientific congress are organized by the European Ayurveda Association e.V. (EUAA).

- Moksha Ayurveda- South east of Europe<sup>12</sup>.
- Maharishi Ayurveda in Holland<sup>13</sup>
- Germany<sup>14</sup>

### **Ayurveda in Australia**

- Australasian Association of Ayurveda Inc- (AAA)<sup>15</sup>
- Australian Natural Therapists Association (ANTA) <sup>16</sup>
- **Queensland-** Health Institute Australia-
- TAFE Queensland East Coast
- **South Australia-** Equals International Institute
- **Western Australia-** Australian Institute of Holistic Medicine (Australian Institute of Higher & Further Education)<sup>17</sup>
- Ayurveda Awareness Centre (Perth)
- **New Zealand-** Wellpark College of Natural Therapies

### **Ayurveda In Russia<sup>18</sup>**

**Ayurveda in Asia** – in almost all countries- especially Nepal, Sri Lanka & India of course

### **Scenario in India**

AYUSH system of is gaining popularity within India as well & it's evident by the fact that a separate Ministry was formed on 9<sup>th</sup> September 2014. Since 1993 AYUSH Colleges, Dispensaries, Hospital, etc are growing year by year. Ayurveda remain on top position w.r.t UG/PG seats, colleges, people choice of traditional medicine, etc (AYUSH Data<sup>20</sup> upto 2015). Despite all efforts by Government/NGO/Practitioners the latest report of NSSO is not encouraging.

As per National Sample Survey Office (NSSO) report published on 30-June-2015, Inclination towards allopathy treatment was prevalent (around 90% in both the sectors). Only 5 to 7 percent usage of 'other' including AYUSH (Ayurveda, Yoga or Naturopathy Unani, Siddha and homoeopathy) was reported both in rural and urban area<sup>19</sup>. We need to rethink on Policy & its mode of implementation.

### **Problem & Solution**

1. EVIDENCE BASED MEDICINE- Evidence-based medicine (EBM) is an approach to medical practice intended to optimize decision-making by emphasizing the use of evidence from well

- designed and conducted research<sup>21</sup>.
2. STANDARDIZATION- EDUCATION, RESEARCH & FORMULATION- Uniform approach across all segments. One syllabus & one policy pan India for education, research & manufacturing units.
  3. TOXICITY- This is always a matter of concern especially for metallic preparation (*Rasaushadhi*). Proper *in-vitro* & *in-vivo* trials before being prescribed for mankind should be mandatory.
  4. DOCEUMENTATION- This is perhaps one of the biggest lacuna of the ancient Science. People are being benefited, treated successfully & in many cases there are marvelous achievements but neither they are documented properly (scientifically) nor they are stored/ preserved properly.
  5. HERB & MINERALS- IDENTIFICATION & AUTHENTICATION- Another major issue is identification of Herbs/Minerals & this tool/method is vanishing off rapidly. We need to focus this area ASAP. Herbs & Minerals are the basis of Ayurveda Management. There should be more CME & ROTP on identification & usefulness of Herbs/Minerals. We have left this job to Pharma Companies & are getting completely depended on them, which is not good for Clinical Practice as well as for Ayurveda.
  6. FOLLOW-UP STUDY- Follow up study of at least 3 to 5yr is necessary to establish safety, efficacy & adverse reaction.
  7. DEVELOPMENT OF OWN R&D SYSTEM- Ayurveda has been in existence for around 5000 yr because of its strong Principles which does not change with time. Ayurveda has its own R&D system written in classical text, we just need to revive it using different methodologies & ICT (Information & Communication Technologies) so that Medical fraternity & scientific community of present era can understand. Like concept of *Shat put* & *Sahatra put* bhasma which are quite close to NANOMEDICINE.
  8. ACCEPTANCE & PROMOTION OF SANSKRIT- Sanskrit is mother tongue of Ayurveda & of all language for that matter. It's not only most computer friendly language but also has prosperous vocabulary. Sanskrit is being taught in many part of world especially in European countries like Germany & they are translating our classical text in their language.
  9. HARMONY BETWEEN INSTITUTE, RESEARCH UNIT & PHARAMA COMPANY- Till now there has been lack of coordination between these three pillars. UG, PG & PhD Scholars should have an exposure of how Ayurveda Research units are working with Biomedical Scientist, Biophysicist & Biotechnologists. They will get to know how Ayurveda Principle are being applied (if so) in research & final product in a company. Seed to shelf (identification, cultivation, collection, storage, etc) knowledge of herb will give insight view. This will enhance confidence of Clinical practice.
  10. 4P- PRESENTATION, PROJECTION, PROMOTION & PROTECTION- Finally Presentation & Promotion of Ayurveda across Globe is always required. Though a lot has been done in this context in last 5 yr, still aggressive policy is needed to further enhance Ayurveda Promotion. Besides CME, ROTP, National- International Seminars, Symposiums & workshops, AROGYA fair, etc; Promotion in all media sectors (audio, video, print & electronic), Case presentation, Publication in peer viewed journals, Setting-up of Satellite AYUSH clinics, etc are some of the way of Projecting & Promoting Ayurveda. Protection of Ayurveda principles, texts, manuscripts and documents is always mandatory in all sphere of Ayurveda activity.

## Conclusion

There is no doubt that Ayurveda is being accepted all over world with much pace than ever. People across country are showing interest in Traditional Medicine especially for chronic diseases & Ayurveda remains most preferred Choice but there are apprehensions regarding its safety & efficacy. We need to cater those core issues scientifically & delicately keeping the sanctity of Ayurveda. Knowledge & Self-belief are the driving force of clinical practice, which is the most significant & long lasting way of establishing & promoting Ayurveda.

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# Ayurgyan

## Conference



Content Editor: Dr. D.K. Semwal  
Printed by: Om Jai Shri Printers, Dehradun

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