

# Integrative Management of Metabolic Dysfunction (Agni Mandya) in Lean Patients: Ayurveda, Yoga and Public Health Perspectives

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**Abstract- Background:** In *ayurveda*, nearly 70–80% of diseases are attributed to *agni mandya*, as impaired digestion leads to *ama*, *dosha* imbalance, and *strotas rodha* (obstruction). modern data similarly shows that malnutrition and poor digestion contribute significantly to the global disease burden, including around 45% of child deaths and rising non-communicable diseases (NCDs). *Agni mandya* is a central pathological state in *ayurveda*, leading to *ama* formation, malnutrition, lifestyle diseases, and reduced immunity.

**Objective:** To explore the management of *agni mandya* in lean patients (*krisha purusha*) through *pathya–apathya ahara* and *yogic* practices, integrating classical references, modern physiology, and public health perspectives.

**Methods:** A narrative review of classical *Ayurvedic* texts including *Charaka Samhita*, *Sushruta Samhita*, *Vagbhata Samhita*, *Gherand Samhita*, *Hatha Yoga Pradipika* and *Patanjali Yoga Sutra* was undertaken, along with modern sources such as WHO fact sheets, NCCIH resources, PubMed, Scopus, and Web of Science. National health programmes like ICDS, RBSK, RKSK, and NPCDCS, as well as AYUSH initiatives such as the Ayush Mark and Digital AYUSH Portal, were also reviewed for relevance. **Results:** *Agni Mandya* in lean patients involves *vata* predominance, *pitta* hypofunction, *kapha–Ama* obstruction, *dhatu* depletion, and *strotas dushti*. management strategies include *pathya* diet, avoidance of *apathya ahara vihara*, lifestyle regulation, *yogic* practices, *chakra dhyana*, *color therapy*, and *rasayana herbs*. Integration with public health programmes highlights applicability in malnutrition, diabetes, and lifestyle disease prevention.

**Conclusion:** Management of *agni mandya* in lean patients requires a holistic integrative approach. By combining *pathya–apathya ahara*, *rasayana sevan*, lifestyle regulation, *yogic* practices, *chakra dhyana*, *color therapy*, digestive fire can be kindled, *ama* can be digested, *dhatu* and *strotas* function can be restored, and *ojas*

strengthened. This integrative strategy not only addresses malnutrition and weak digestion in lean patients but also prevents lifestyle disorders such as diabetes, obesity, and cardiovascular disease, thereby promoting holistic wellness and strengthening public health sustainability.

## I. INTRODUCTION

In *ayurveda*, *agni mandya* is considered the root cause of the majority of diseases. Classical texts state that up to 80% of disease burden is linked to impaired *agni* because *mandagni* leads to *Ama* formation, *dosha* imbalance, and *strotas* obstruction [1][2][3].

- *Ayurvedic* Perspective: *Charaka Samhita* emphasizes that *agni mandya* is the origin of almost all pathological states: “अग्निमन्द्ये तु यः रोगः स सर्वः सर्वदेहिनाम्...”. This means that when *agni* is weak, every disease can arise. Scholars interpret this as *agni* dysfunction contributing to the majority of disease burden in *ayurveda*.
- *Agni* is described as the root of health: “अग्निर्हि सर्वेषां देहानां मूलं...” by *Acharya Charaka Sutra* [4]. *agni* is the foundation of all bodily functions.
- Estimated Burden:
  - *Ayurvedic* scholars often cite that 70–80% of diseases are directly or indirectly due to *Mandagni* [2].
  - This includes disorders of digestion, metabolism, immunity, and psychosomatic conditions.
  - Modern parallels: malnutrition, gastrointestinal disorders, metabolic syndrome, and lifestyle diseases.
- Modern Correlation:

- WHO reports that malnutrition contributes to ~45% of deaths among children under 5 years globally [7].
- Digestive dysfunction and poor nutrition are major risk factors for non-communicable diseases (NCDs) such as diabetes, cardiovascular disease, and obesity [8].
- Thus, the *Ayurvedic* claim that most diseases originate from *Agni Mandya* aligns with modern evidence linking poor digestion and nutrition to global disease burden.

When *Agni* is weak (*Mandagni*), digestion and metabolism are impaired, leading to disease [5]. In lean patients, this manifests as malnutrition, poor immunity, and susceptibility to chronic disorders [6]. Modern parallels include malabsorption syndrome, anorexia nervosa, irritable bowel syndrome, and undernutrition [7].

The aim of this article is to provide a comprehensive review of *agni Mandya* in lean patients and its management through *pathya–apathya ahara* and *yogic* practices, integrating classical wisdom with modern science.

## II. METHODS

- Classical Sources: *charaka samhita, sushruta samhita, ashtanga hridaya, kashyapa Samhita.*

Table no. 1 - Types of *Agni*: Location, Functions, and Clinical Significance”

Type of <i>Agni</i>	Location	Function	Examples / Importance	Clinical Relevance
<i>Jatharagni</i> (Root of <i>Agni</i> )	all Stomach & duodenum	Digests <i>Ahara rasa</i> into absorbable form	Root of all <i>Agni</i>	Weak <i>Jatharagni</i> → <i>Mandagni</i> → <i>Ama</i> → Disease causation[9]
<i>Bhutagni</i> (Elemental <i>Agni</i> )	In each of the 5 <i>Mahabhutas</i> ( <i>Prithvi, Ap, Teja, Vayu, Akasha</i> )	Converts food into elemental essence compatible with body tissues	<i>Tejo bhutagni</i> → fiery component; <i>bhutagni</i> → watery component	Ensures compatibility of food with body’s elemental composition[9]
<i>Dhatvagni</i> (Tissue-level <i>Agni</i> )	In each <i>Dhatu (Rasa, Rakta, Mamsa, Meda, Asthi, Majja, Shukra)</i>	Metabolizes nutrients at tissue level → maintains <i>Dhatu</i> balance	<i>Rasa dhatu agni</i> → <i>Rakta; Rakta dhatu agni</i> → <i>Mamsa</i>	Dysfunction → <i>Dhatu dushti</i> (e.g. <i>Medo dhatu agni mandya</i> → obesity)[9]
<i>Mandagni</i> (Weak digestive — fire)	—	Incomplete digestion	Leads to <i>Ama</i> formation	<i>Rogapravr̥tti</i> (disease causation) [10]

This table highlights the types of *agni*, their locations, functions, and clinical significance. It shows that *Jatharagni* is the root of all *agni*, while disturbances in *bhutagni* or *dhatvagni* lead to tissue imbalance, and weak *agni* (*mandagni*) results in *ama* formation and disease.

- Modern Sources: WHO fact sheets on malnutrition and NCDs, NCCIH resources on *yoga* and meditation, PubMed studies on gut microbiome, hormones, and stress physiology.
- Approach: Narrative synthesis of *ayurvedic* concepts (*agni, dosha, dhatu, mala, strotas, ama, ojas*) with modern physiology.
- Tools: Tables and flowcharts were created to illustrate *pathya vs apathya ahara* (foods), *Dosha* imbalance, and *yoga’s* hormonal effects.

## III. RESULTS

Concept of *Agni*: There are three types of *Agni*



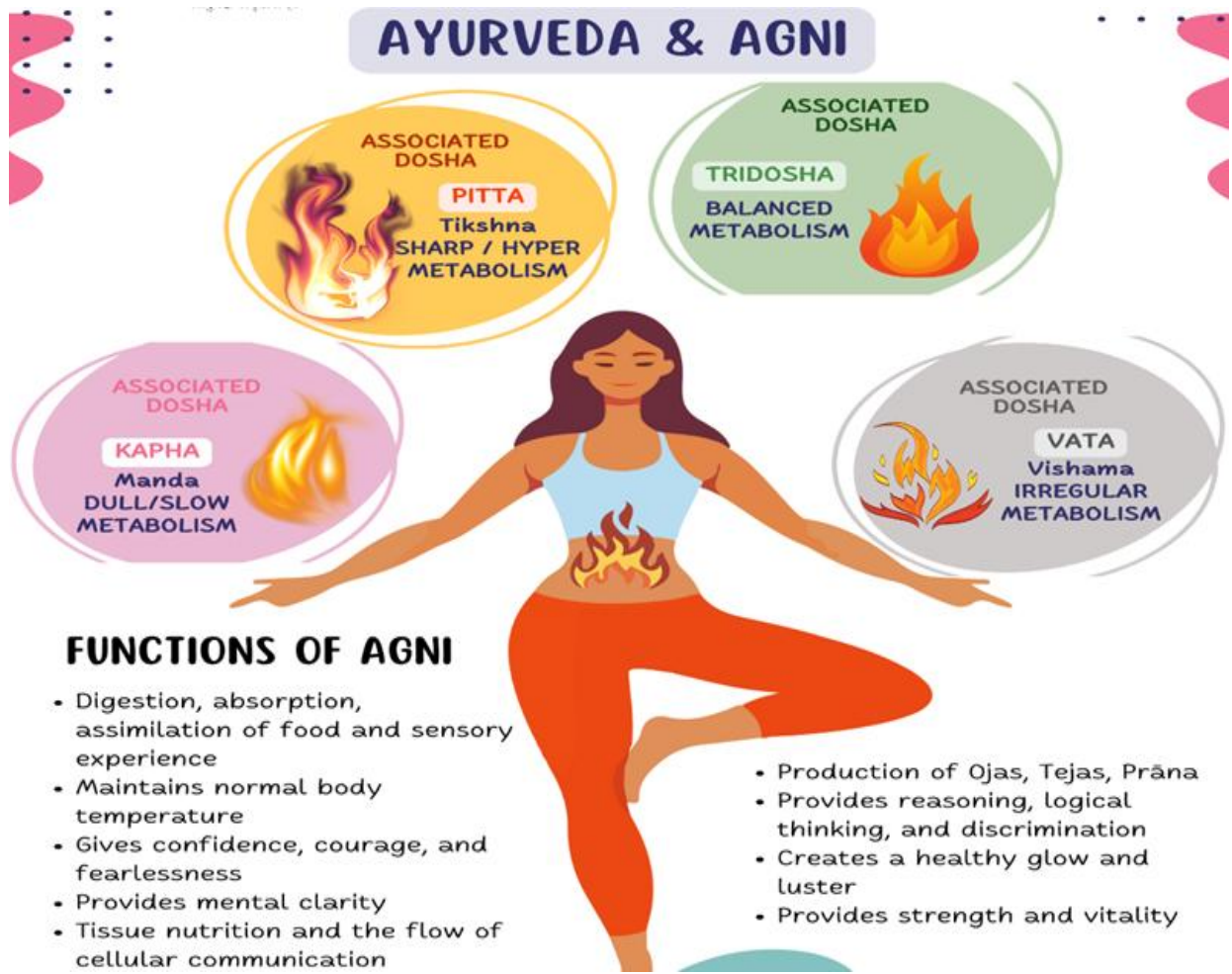


Fig no. 1 - Visual Overview of Agni: Metabolic Types and Physiological Roles

Table no. 2 - Pathophysiological Impact of Agni Dysfunction: Doshā, Dhātu, Srotas, and Ojas Involvement.

Category	Subcategory	Details / Description
Dosha Involvement	Vata ↑	Irregular appetite, dryness, constipation, emaciation [11]
Dosha Involvement	Pitta ↓	Weak enzyme activity, poor assimilation [12]
Dosha Involvement	Kapha + Ama	Sluggishness, heaviness, blocked Srotas [13]
Dhātu Involvement	Rasa, Rakta, Mamsa, Asthi	Depletion → fatigue, pallor, lean body, frailty [14–17]
Mala & Ama	—	Constipation, toxin accumulation, systemic inflammation [18–19]
Srotas Involvement	Annavaha, Rasavaha, Mamsavaha, Manovaha	Dushti → indigestion, emaciation, poor muscle mass, anxiety [20–23]
Ojas & Vyadhi Kshamatva	—	Reduced Ojas → poor immunity [24–25]

This table no. 2 - illustrates how impaired agni leads to multi-system disturbances—ranging from dosha imbalance and dhātu depletion to srotas dushti and reduced immunity. such dysfunction manifests as digestive issues, fatigue, toxin accumulation, and increased disease susceptibility.

Table no. 3 - *Pathya–Apathya* guidelines for *agni* restoration: Diet, Lifestyle, and *Yogic* Practices.

z	<i>Pathya</i> (Recommended)	<i>Apathya</i> (To Avoid)
<i>Ahara</i> (Diet)	Warm, fresh food; rice gruel ( <i>Peya, Vilepi</i> ); <i>Yusha</i> (Moong/Masoor dal soup); Milk & Ghee ( <i>Balya, Rasayana</i> , “घृतं पयं [सर्वेषाम्]”); Fresh seasonal fruits (Pomegranate, Papaya, Banana, Apple) [26–28]	<i>Viruddha Ahara</i> (milk + fish, ghee + honey equal qty, hot + cold foods together) [29]; Stale food (overnight, reheated, refrigerated fast food, bakery items) [30]; Junk food (pizza, burgers, chips, soft drinks) [31]; Fried items (pakoras, samosas, puris, bhajiyas) [32]; Suppression of hunger → weak <i>Jatharagni</i> , <i>Ama</i> accumulation [33–34]
<i>Deepana–Pachana Dravyas</i>	<i>Trikatu</i> ( <i>Sunthi, Maricha, Pippali</i> ) → enhances metabolism; <i>Hingu, Jeeraka, Ajwain</i> → relieves indigestion, bloating; <i>Panchakola</i> churna → classical formulation for <i>Agni Mandhya</i> [35]	—
<i>Panchakol Churna</i>	<i>Pippali</i> → <i>Deepana</i> , relieves <i>Kapha</i> ; <i>Pippalimoola</i> → improves digestion, reduces bloating; <i>Chavya</i> → carminative, relieves abdominal pain; <i>Chitraka</i> → strong —	—
Ingredients	<i>Deepana</i> , removes <i>Ama</i> ; <i>Shunthi</i> → digestive, antifatulent, reduces <i>Vata Kapha</i> [36]	—
<i>Vihara</i> (Lifestyle)	<i>Dinacharya: Brahmamuhurta</i> rising, <i>Dantadhavana, Jihvanirlekhana, Abhyanga, Vyayama</i> , timely meals [37]; <i>Ritucharya</i> : seasonal regimen ( <i>Grishma</i> → light cooling food; <i>Hemanta</i> → nutritious heavy food + exercise) [38]; Meditation ( <i>Dhyana</i> , Om chanting, mindfulness) → reduces stress [39]; Adequate sleep (7–8 hrs) → restores <i>Agni &amp; Dhatu</i> balance [40]; Avoidance of <i>Vegadharana</i> → respect natural urges [41]	Irregular routine, late waking, skipping meals, lack of exercise; Ignoring seasonal regimen; Stress, anxiety, no relaxation practices; Sleep deprivation, irregular sleep, night-long wakefulness; Suppression of urges → <i>Vata</i> aggravation, <i>Ama</i> accumulation
<i>Yogic Practices</i>	I) <i>Asana</i> : i) <i>Vajrasana</i> , ii) <i>Bhujangasana</i> , iii) <i>Dhanurasana</i> , iv) <i>Pawanmuktasana</i> [42]; II) <i>Pranayama</i> : <i>Kapalabhati, Bhastrika, Anulom Vilom</i> [43]; III) <i>Mudras</i> : i) <i>Agni Mudra</i> (stimulates metabolic fire), ii) <i>Apana Mudra</i> (supports elimination), iii) <i>Prana Mudra</i> (enhances assimilation, immunity) [44]	Sedentary lifestyle, no <i>yoga</i> , excessive strain, wrong postures

This table emphasizes that *pathya* (recommended diet, lifestyle, and *yoga*) strengthens *agni*, promotes digestion, and supports immunity, while *apathya* (to be avoided) weakens *Jatharagni*, causes *ama* formation, and predisposes to disease.

Thus, adopting wholesome food, mindful routines, and *yogic* practices is essential for sustainable health and balance.

Physiology of *Yogic* Practices in *Agni Mandhya* (Lean Patients)

I] *Asanas*:

abdominal compression + vagal stimulation → better motility, enzyme secretion [47].

i) *Vajrasana* (Thunderbolt Pose) - Enhances parasympathetic tone, stabilizes pelvic circulation, and supports gastric secretion regulation.[42]

ii) *Bhujangasana* (Cobra Pose) - Strengthens spinal extensors, expands thoracic cavity, improves lung ventilation, and stimulates adrenal activity. [59][62]

iii) *Dhanurasana* (Bow Pose)- Stretches abdominal viscera, enhances peristalsis, improves pancreatic and hepatic function, and increases sympathetic tone. [50][53]

iv) *Pawanmuktasana* (Wind-Relieving Pose) - Relieves flatulence, massages colon and abdominal organs, improves venous return, and regulates bowel movements. [61][75]

II] *Pranayama*

Enhances oxygen supply, autonomic balance, vagal stimulation → improves gut motility, enzyme secretion, and nutrient assimilation [45].

*Pranayama* → oxygenation + autonomic balance → stronger metabolism, reduced stress [48].

i) *Kapalabhati* - Rapid forceful exhalations with passive inhalations → increases alveolar ventilation, stimulates abdominal organs, clears *Kapha* from respiratory tract, and enhances metabolic activity. [43]

ii) *Bhastrika* -Bellows-like vigorous inhalation and exhalation → improves oxygenation, strengthens respiratory muscles, activates sympathetic tone, and boosts *Agni*. [43]

iii) *Anulom Vilom* - Alternate nostril breathing → balances autonomic nervous system, reduces stress, harmonizes *Ida-Pingala nadis*, and supports digestive and mental clarity. [43]

*Mudras - Mudras* → pranic activation → ignite *Agni*, improve assimilation [49].



i) *Agni Mudra*

- Thumb (*Agni tattva*) pressed → stimulates metabolic fire.
- Increases digestive enzyme activity [46].

iii) *Prana Mudra*

- Activates vital energy channels.
- Enhances nutrient assimilation, immunity, and cellular metabolism [46].

ii) *Apana Mudra*

- Regulates downward energy → supports elimination.
- Improves colon motility, relieves constipation [46].

In short, *Mudras* act via neuromuscular + pranic pathways, stimulating digestive fire, elimination, and assimilation [46].

Role of *Manipura Chakra Dhyāna* and Color Therapy in Restoring *Agni*



- Energetic: Activates *Manipura Chakra* → strengthens digestive fire [53].
- *Ayurvedic*: Reduces *Ama*, balances *Doshas*, restores *Agni* [54-56].
- *Manipura Chakra* meditation with *mantra* “*Ram*” [57].
- Wearing yellow/orange for *Agni* stimulation; green for stress relief [58].  
“मणिपूरं तु नाभिस्थं तत्र वह्निर्विराजते...” [59].

#### Physiology & Mechanism

- *Ayurvedic*: Weak *Jatharagni* → *Ama* → disease [60].
- Modern physiology: ↓ enzymes, ↓ gastric acid, ↓ ghrelin, ↑ cortisol, gut dysbiosis [61].
- *Yoga & Diet*: *Asana*, *Pranayama*, *Mudra* + *Pathya Ahara* restore gut–brain axis, balance hormones, strengthen *Agni* [62–63].

#### Rasayana

*Amalaki*, *Guduchi*, and *Ashwagandha* are all explicitly mentioned as *Rasayana dravyas* in the classical *Ayurvedic Samhitas*, especially in the *Rasayana Adhyaya* of *Charaka Samhita* and *Sushruta Samhita*. These texts highlight their role in *Dhatu-poshana* (tissue nourishment), *Agni-deepana* (digestive fire stimulation), and *Ojas-varadhana* (enhancement of vitality). [64–66].

*Amalaki* – Rich in antioxidants and Vitamin C, supports *Rasa* and *Rakta Dhatu* nourishment, enhances digestion, and promotes *Ojas* formation [64].  
*Guduchi* – Known as *Amrita*, has *Deepana–Pachana* (digestive stimulant and metabolic enhancer) properties, strengthens immunity, and balances *Tridosha* [65].

*Ashwagandha* – A *Rasayana* herb that rejuvenates *Mamsa* and *Shukra Dhatus*, reduces stress, and promotes vitality and *Ojas* [66].

#### Public Health Angle

- Malnutrition programmes: ICDS, RBSK, RKSK [67].
- Lifestyle disease programme: NPCDCS [68].
- WHO perspective: Integrative medicine highlights *Yoga + Ayurveda* [69].
- AYUSH Ministry initiatives: Ayush Mark, Digital AYUSH Portal [70].

#### Malnutrition & Lean Adolescents

- National programmes like ICDS, RBSK, RKSK target nutritional deficiencies and adolescent health [67].
- Lean adolescents with weak *Agni* often overlap with malnutrition cases.
- *Ayurveda* + *Yoga* can complement these programmes by improving digestion, assimilation, and appetite [71].

#### Lifestyle disease programme: NPCDCS

- Rising burden of early onset diabetes, obesity, hypertension, dyslipidemia among adolescents and young adults due to poor diet, junk food, stress, and sedentary lifestyle [72].
- *Ayurveda* explains this as *Agni Mandya* → *Ama* → *Prameha* & other lifestyle disorders [73].
- Modern physiology: insulin resistance, dysbiosis, cortisol excess, metabolic syndrome [74].
- *Yoga (Asana, Pranayama, Mudra)* + *Pathya Ahara* restore gut–brain axis, autonomic balance, glucose metabolism, and stress reduction [75].
- Public health programmes like NPCDCS directly address lifestyle diseases, and integration with *Ayurveda & Yoga* can strengthen prevention strategies [76].

#### WHO Perspective

- WHO emphasizes integrative medicine for lifestyle disorders, highlighting *Yoga + Ayurveda* as cost-effective, culturally acceptable interventions [77].
- Focus on holistic prevention, not just treatment.

#### AYUSH Ministry Initiatives

- *Ayush Mark* ensures quality *Ayurvedic* formulations for metabolic and lifestyle disorders [78].
- Digital AYUSH Portal spreads awareness, supports integration with national programmes [79].
- AYUSH + NPCDCS collaboration can strengthen adolescent health, malnutrition management, and lifestyle disease prevention [80].

#### IV. DISCUSSION

- *Agni Mandya* in lean patients (*Krishna Purusha*) is a multidimensional pathology involving weak digestive fire, *Dosha* imbalance, *Dhatu* depletion, *Srotas dushti*, and reduced *Ojas* [81].
- *Ayurvedic* perspective: *Mandagni* leads to *Ama* formation, which obstructs *Srotas*, aggravates *Doshas*, and weakens immunity [82].
- Modern perspective: Malnutrition, enzyme deficiency, reduced gastric acid, gut dysbiosis, and stress-related cortisol excess parallel the *Ayurvedic* concept of *Mandagni* [83].
- Integrative approach: *Pathya Ahara* (warm, fresh, *Deepana–Pachana* diet), avoidance of *Apathya*, *Yogic* practices (*Asana*, *Pranayama*, *Mudra*), *Chakra* meditation, Color therapy, and *Rasayana* herbs collectively improve digestion, metabolism, and immunity [84].
- Public health relevance:
  - Malnutrition programmes: ICDS, RBSK, RKSK [85].
  - Lifestyle disease programme: NPCDCS [86].
  - WHO perspective: Integrative medicine highlights *Yoga* and *Ayurveda* [87].
  - AYUSH Ministry initiatives: Ayush Mark and Digital AYUSH Portal [88–89].

Thus, management of *Agni Mandya* in lean patients is not only a clinical necessity but also a public health priority, bridging malnutrition, adolescent health, diabetes, and lifestyle disease prevention. Future directions include clinical trials and integration of *Ayurveda–Yoga* modules into national programmes [90].

## V. CONCLUSION

Management of *Agni Mandya* in lean patients requires a holistic and integrative approach. Combining *Pathya–Apathya Ahara - Vihara*, *Yogic* practices, *Chakra Dhyana*, Color therapy, and *Rasayana* strengthens digestive fire, digests *Ama*, restores *Dhatu* and *Srotas* function, and enhances *Ojas* [91–93].

By linking *Ayurveda* and *Yoga* with national programmes (ICDS, RKSK, NPCDCS) and WHO's vision, adolescent malnutrition, diabetes, and lifestyle diseases can be effectively addressed. This integrative strategy not only prevents disease but also promotes holistic wellness and public health sustainability [85–87].

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