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A Single Case Study on Ayurvedic Detox Drinks for Weight Loss via Gut–Brain Axis Regulation

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Abstract

Background: The *gut–brain axis* is a bidirectional communication system linking gastrointestinal physiology with emotional and cognitive centers. Disturbances in this axis contribute to altered appetite regulation, emotional eating, and metabolic disorders. Ayurveda conceptualizes this relationship through *Agni (digestive fire), Ama (metabolic toxins)*, and Manasika Bhava (psychological factors), where impaired Agni leads to Ama accumulation and *Medodhatu vriddhi*, ultimately manifesting as *Sthoulya* (overweight/obesity).

Objective: To evaluate the efficacy of Ayurvedic *detox drinks* in promoting weight loss by modulating the *gut–brain axis* and restoring *Agni.*

Methods: A single-case clinical study was conducted on a 38-year-old female (BMI 28.1 kg/m²) presenting with Adhmana (bloating), Alasya (lethargy), impaired concentration, restlessness, and emotional eating behavior. A 30-day intervention protocol comprising seven Ayurvedic detox drinks—Jeera water, Ajwain water, Saunf water, Methi infusion, Triphala decoction, Lemon–Honey Ushnodaka, and Jeera–Ajwain–Saunf combination water—was administered alongside dietary regulation (Laghu Ahara) and lifestyle modifications including pranayama and mindful eating.

Results: After 30 days, the patient showed a reduction of 3.8 kg body weight, improvement in digestive function, normalization of bowel habits, reduced bloating, enhanced satiety, and significant decline in emotional eating episodes. Psychological parameters such as restlessness and lack of concentration also improved, indicating better *mind–gut* coordination.

Conclusion: Ayurvedic detox drinks effectively restored *Agni*, facilitated *Ama Pachana*, and contributed to regulation of the gut–brain axis, resulting in sustainable weight loss and improved psychological well-being. This integrative approach highlights the relevance of Ayurveda in managing metabolic disorders through holistic gut–mind modulation.

Keywords: *Gut–brain axis, Agni, Ama, Sthoulya, detox drinks, emotional eating, Ayurveda, Ushnodaka, Medodhatu, gut–mind modulation.*

Introduction :

Overweight and obesity are emerging as major public health concerns worldwide, associated with increased risk of metabolic disorders such as type 2 diabetes mellitus, cardiovascular diseases, and psychological disturbances. The Body Mass Index (BMI) remains a widely used parameter to classify overweight (25–29.9 kg/m²) and obesity (>30 kg/m²)[1]. However, recent scientific advances indicate that obesity is not merely a result of caloric imbalance but involves complex neuro-hormonal and microbial interactions.

The concept of the Gut–brain axis has gained significant attention in understanding appetite regulation, emotional eating, and metabolic homeostasis. This axis represents a bidirectional communication network between the central nervous system and gastrointestinal tract mediated through neural (vagus nerve), endocrine (hormones like ghrelin and leptin), and immune pathways[2]. Dysregulation of this axis leads to altered satiety signalling, increased cravings, and emotional eating behaviour, contributing to overweight and obesity[3].The role of gut microbiota in obesity has also been extensively studied. Alterations in microbial composition (dysbiosis) affect energy extraction, fat storage, and inflammatory pathways, further influencing brain function and behaviour[4]. Stress and emotional disturbances activate the hypothalamic–pituitary–adrenal (HPA) axis, increasing cortisol levels and promoting visceral fat accumulation[5]. Ayurveda provides a comprehensive explanation of overweight (Sthoulya) through the concepts of Agni, Ama, Dosha, and Dhatu metabolism. According to classical texts, Mandagni (low digestive fire) leads to improper digestion and formation of Ama, which obstructs bodily channels (Srotorodha) and results in Medodhatu vriddhi (excess fat accumulation) [6]. Sthoulya is described as a Santarpanajanya Vyadhi (disease due to over-nourishment), involving Kapha predominance and metabolic imbalance[7].

Furthermore, Ayurveda recognizes the influence of Manasika Bhava (psychological factors) such as Chinta (stress), Shoka (grief), and Rajas–Tamas dominance, which lead to Ati Ahara (overeating) and disturbed digestive function[8] . Thus, the Ayurvedic framework aligns closely with modern understanding of the gut–brain axis.

Among various therapeutic approaches, Ahara (diet), Vihara (lifestyle), and Aushadha (medication) play a central role. Ayurvedic detoxification strategies, particularly through simple herbal drinks, aim at Agni Deepana (enhancing digestion), Ama Pachana (toxin digestion), and Kapha–Medohara action (fat reduction). These interventions are economical, safe, and suitable for long-term use.

This study explores the role of Ayurvedic detox drinks in regulating the gut–brain axis and promoting sustainable weight loss in an overweight individual.

Review of Literature :

Overweight and obesity are multifactorial conditions influenced not only by excessive caloric intake but also by neuroendocrine, microbial, and psychological mechanisms. The Body Mass Index (BMI) remains a standard tool for classifying overweight, yet it does not fully explain the underlying metabolic complexity[9]. Recent

advances highlight the role of the Gut–brain axis, a dynamic communication network linking the central nervous system with gastrointestinal function through neural, hormonal, and immune pathways. This axis plays a crucial role in regulating appetite, satiety, and emotional behavior. Dysregulation of gut–brain signaling is associated with altered secretion of hormones such as ghrelin and leptin, leading to increased hunger, reduced satiety, and emotional eating patterns that contribute to weight gain[10,11].

The gut microbiota has emerged as a key component in obesity pathophysiology. Alterations in microbial diversity, known as dysbiosis, influence energy extraction, fat storage, and inflammatory responses. Studies have shown that microbial metabolites such as short-chain fatty acids affect neurotransmitter production, particularly serotonin, which is largely synthesized in the gut and plays a significant role in mood regulation and eating behavior[12,13]. Furthermore, chronic stress activates the hypothalamic–pituitary–adrenal (HPA) axis, increasing cortisol levels that promote visceral fat accumulation and disrupt metabolic homeostasis[14]. These findings establish a strong link between psychological stress, gut function, and obesity.

Ayurveda describes overweight under the condition of Sthoulya, which is primarily a result of Kapha dosha predominance and Medodhatu vriddhi. The fundamental cause is Mandagni (diminished digestive fire), leading to improper digestion and formation of Ama (metabolic toxins). Ama obstructs bodily channels (Srotorodha), impairing nutrient transport and metabolism, ultimately resulting in fat accumulation and lethargy[15,16]. Classical texts such as Charaka Samhita and Sushruta Samhita emphasize that Sthoulya is a Santarpanajanya Vyadhi, caused by excessive nourishment and sedentary habits. Additionally, Ayurveda recognizes the role of Manasika factors, where psychological disturbances such as Chinta (stress), Shoka (grief), and Rajas–Tamas imbalance lead to Ati Ahara (overeating) and disturbed digestion, closely paralleling the modern concept of emotional eating[17].

The concept of Agni is central to Ayurvedic physiology and metabolism. Proper functioning of Agni ensures efficient digestion, absorption, and assimilation of nutrients, while impaired Agni leads to Ama formation and metabolic disorders. Therefore, therapeutic strategies in Ayurveda focus on Agni Deepana (enhancing digestive fire) and Ama Pachana (detoxification) as primary approaches to manage overweight and related conditions[18]. This aligns with modern approaches that aim to improve gut health and metabolic regulation.

Ayurvedic detox drinks have been traditionally used as simple yet effective interventions to restore digestive balance and metabolic function. Jeera (Cuminum cyminum) has been shown to enhance digestive enzyme activity and improve metabolism, thereby aiding in weight management[19]. Ajwain (Trachyspermum ammi) exhibits carminative and digestive properties, reducing bloating and supporting gut function[20]. Saunf (Foeniculum vulgare) acts as a mild digestive and coolant, improving gastrointestinal motility and reducing acidity[21]. Methi (Trigonella foenum-graecum) has

demonstrated hypoglycemic and hypolipidemic effects, enhancing satiety and reducing caloric intake[22]. Triphala, a classical polyherbal formulation, is widely recognized for its detoxifying, antioxidant, and gut microbiota-modulating effects, making it beneficial in metabolic disorders[23].

Additionally, Lemon–Honey Ushnodaka, a classical Ayurvedic preparation, is described as an effective Ama Pachaka and Medohara (fat-reducing) remedy, stimulating metabolism and facilitating weight loss[24] . The combination of Jeera–Ajwain–Saunf provides synergistic effects in enhancing digestion, reducing gas formation, and controlling cravings, thereby supporting both physical and psychological aspects of weight management[25].

Overall, both modern scientific evidence and Ayurvedic principles converge on the importance of gut health and its interaction with the brain in regulating body weight. Ayurvedic detox drinks, by improving Agni, eliminating Ama, and balancing Doshas, offer a holistic and sustainable approach to modulating the gut–brain axis and managing overweight conditions effectively.

Case Presentation :

Patient Details:

- Age: 38 years
- Gender: Female

Chief Complaints:

- Bloating (Adhmana)
- Weight gain
- Lethargy (Alasya)
- Loss of concentration
- Restlessness (Chanchalata)
- Emotional eating (regardless of mood)
- Body image dissatisfaction

Anthropometric Assessment:

- Weight = 72 kg
- Height = 5 ft 3 inch = 1.60 m

BMI Calculation:

BMI= Weight/ Height^2 = 72/(1.60)^2 = 28.1 kg/m^2

Interpretation: Overweight (Pre-obese stage)

Roga–Rogi Pariksha :

Parameter	Assessment	Clinical Interpretation (Ayurvedic Perspective)
Prakriti (Constitution)	Kapha–Pitta Prakriti	Predisposition to weight gain, slower metabolism, tendency for Medodhatu accumulation
Vikriti (Current Imbalance)	Kapha Vriddhi with Vata Anubandha	Leads to heaviness, lethargy, bloating (Adhmana), irregular digestion
Sara (Tissue Quality)	Meda Sara Vriddhi	Increased adiposity, poor muscle tone
Samhanana (Body Build)	Madhyama to Sthula	Moderate to obese body frame
Pramana (Anthropometry)	Weight: 72 kg, Height: 1.60 m, BMI: 28.1 kg/m²	Overweight (Pre-obese stage)
Satmya (Adaptability)	Asatmya to heavy, oily foods	Improper dietary adaptation leading to Ama formation
Satva (Mental Strength)	Avara Satva	Low mental resilience, emotional eating tendency
Ahara Shakti (Dietary Capacity)	Abhyavaharana Shakti: Increased; Jarana Shakti: Decreased	High intake but poor digestion (Mandagni)
Vyayama Shakti (Exercise Capacity)	Avara (Low)	Easily fatigued, reduced physical endurance
Agni (Digestive Fire)	Mandagni	Root cause of Ama formation and metabolic disturbance
Ama (Toxic Metabolites)	Present (Saama Avastha)	Manifested as bloating, heaviness, lethargy
Koshtha (Bowel Nature)	Madhyama to Krura	Irregular bowel habits with occasional constipation
Mala (Stool)	Saama Mala	Sticky, foul-smelling stools indicating Ama
Mutra (Urine)	Normal	No major urinary pathology
Jihva (Tongue)	Saama (coated)	Classical sign of Ama
Shabda (Speech)	Normal	No abnormality
Sparsha (Skin)	Snigdha, slightly cold	Kapha dominance
Drik (Eyes)	Slight dullness	Reflects low metabolic activity
Akruti (Body Appearance)	Sthula, Meda accumulation in abdomen & hips	Typical Sthoulya presentation
Nidra (Sleep)	Disturbed	Linked to Rajas–Tamas imbalance
Manasika Bhava	Chanchalata (restlessness), emotional instability	Leads to emotional eating (Ati Ahara)
Ruchi (Taste Preference)	Preference for Madhura, Snigdha Ahara	Kapha aggravating diet
Srotas Dushti	Medovaha & Annavaha Srotas Dushti	Impaired fat metabolism and digestion
Udbhava Sthana	Amashaya	Origin of disease in digestive system
Vyadhi Marga	Abhyantara Roga Marga	Internal systemic disorder
Roga Swaroopa	Sthoulya (Overweight)	Santarpanajanya Vyadhi
Dosha Involvement	Kapha Pradhana with Vata involvement	Metabolic slowdown + bloating
Dushya Involved	Meda Dhatu	Excess fat accumulation
Agni Dushti Type	Mandagni	Core pathology
Ama Lakshana	Adhmana, Alasya, Angagaurava	Classic signs of Ama
Manas Dosha	Rajas & Tamas Vriddhi	Emotional eating, lack of control

Materials and Methods :

Study Design:

This study was designed as a single-case clinical study conducted over a period of 30 days to evaluate the effect of selected Ayurvedic detox drinks on weight management through gut–brain

axis regulation. The intervention focused on Agni Deepana (enhancing digestive fire), Ama Pachana (detoxification), and Kapha–Medohara action (fat metabolism).

Case Selection:

Inclusion Criteria:

- Female patient aged 38 years
- BMI between 25–30 kg/m² (overweight category)
- Presence of symptoms such as:
  - Adhmana (bloating)
  - Alasya (lethargy)
  - Emotional eating
  - Loss of concentration
  - Restlessness

Exclusion Criteria :

- Endocrine disorders (e.g., hypothyroidism, diabetes mellitus)
- Pregnancy or lactation
- Chronic systemic illness
- Patients on weight-loss medications

Ethical Consideration

- Informed consent was obtained from the patient prior to initiation of the study
- The intervention used safe, dietary-based Ayurvedic preparations with no known adverse effects

Materials Used :

All ingredients were easily available kitchen-based Ayurvedic dravyas, ensuring safety and compliance:

- Jeera (Cuminum cyminum)
- Ajwain (Trachyspermum ammi)
- Saunf (Foeniculum vulgare)
- Methi (Trigonella foenum-graecum)
- Triphala churna
- Lemon (Citrus limon)
- Honey (Madhu)
- Warm water (Ushnodaka)

Method of Preparation of Detox Drinks :

All drinks were freshly prepared daily and administered only once in the morning on an empty stomach, as per the 30-day schedule.

1. Jeera Water

- 1 tsp jeera boiled in 200 ml water for 5–7 minutes
- Filtered and consumed warm

2. Ajwain Water

- 1 tsp ajwain boiled in 200 ml water
- Reduced to 150 ml and consumed warm

3. Saunf Water

- 1 tsp saunf soaked overnight in 200 ml water
- Slightly warmed before consumption

4. Methi Water

- 1 tsp methi seeds soaked overnight
- Water consumed along with chewed seeds

5. Triphala Decoction

- ½ tsp Triphala churna boiled in 200 ml water
- Reduced to 100 ml and consumed lukewarm

6. Lemon–Honey Ushnodaka

- 1 glass warm water + ½ lemon juice + 1 tsp honey
- Consumed immediately

7. Jeera–Ajwain–Saunf Combination Water

- ½ tsp each of jeera, ajwain, and saunf
- Boiled in 300 ml water and reduced to 200 ml

Intervention Protocol (30-Day Plan) :

The patient was administered one detox drink per day in a rotating pattern, ensuring variety and sustained therapeutic effect.

Week-wise Schedule :

Day	Detox Drink (Morning Empty Stomach)
Day 1	Lemon–Honey Ushnodaka
Day 2	Jeera Water
Day 3	Ajwain Water
Day 4	Saunf Water
Day 5	Methi Water
Day 6	Triphala Decoction
Day 7	Jeera–Ajwain–Saunf Water

This 7-day cycle was repeated for 4 weeks (30 days)

Ahara:

- Laghu (light), warm, freshly prepared food
- Avoid:
  - Guru (heavy), Snigdha (oily), processed food
  - Excess Madhura rasa (sweets)
- Recommended:
  - Yavagu (light gruel)
  - Green vegetables
  - Takra (buttermilk)
  - Early dinner before 8 pm

Vihara :

- 30 minutes brisk walking daily
- Pranayama (Anulom Vilom, Bhramari)
- Mindful eating (slow chewing, no distractions)
- Fixed meal timings
- Adequate sleep hygiene

Assessment Criteria :

Parameter	Type	Assessment Method	Grading Criteria	Ayurvedic Correlation
Body Weight (kg)	Objective	Digital weighing scale	Actual value recorded	Medodhatu vriddhi
BMI (kg/m²)	Objective	Weight/Height² calculation	<25 Normal, 25–29.9 Overweight, ≥30 Obese	Sthoulya classification
Bloating (Adhmana)	Subjective	Patient-reported	0 = None 1 = Mild (occasionally) 2 = Moderate (daily discomfort) 3 = Severe (persistent)	Ama accumulation, Vata-Kapha dushti
Appetite (Agni Bala)	Subjective	Patient feedback	0 = Normal 1 = Slightly reduced 2 = Irregular 3 = Poor digestion	Mandagni
Satiety / Cravings	Subjective	Frequency of hunger & cravings	0 = Controlled 1 = Occasional 2 = Frequent 3 = Uncontrolled	Rajas dominance, Medo vriddhi
Emotional Eating	Subjective	Behavioral observation	0 = Absent 1 = Rare 2 = Frequent 3 = Continuous (irrespective of mood)	Manasika dushti (Rajas–Tamas)
Energy Levels (Alasya)	Subjective	Daily activity level	0 = Active 1 = Mild fatigue 2 = Moderate lethargy 3 = Severe lethargy	Kapha vriddhi, Ama
Concentration (Manas Bala)	Subjective	Self-reported focus	0 = Good 1 = Mild difficulty 2 = Moderate difficulty 3 = Poor concentration	Rajas–Tamas imbalance
Restlessness (Chanchalata)	Subjective	Mental state evaluation	0 = Calm 1 = Mild 2 = Moderate 3 = Severe	Vata + Rajas aggravation
Bowel Habits (Mala Pravritti)	Objective/ Subjective	Frequency & consistency	0 = Regular 1 = Slight irregularity 2 = Constipation/loose 3 = Severe irregularity	Agni dushti, Ama
Stool Nature (Mala Swarupa)	Subjective	Observation	0 = Normal 1 = Slightly sticky 2 = Sticky/foul smell 3 = Highly abnormal	Saama Mala
Tongue Coating (Jihva)	Objective	Visual inspection	0 = Clean 1 = Thin coating 2 = Moderate coating 3 = Thick coating	Ama presence
Sleep (Nidra)	Subjective	Sleep pattern	0 = Sound sleep 1 = Mild disturbance 2 = Interrupted 3 = Poor sleep	Manas imbalance
Physical Activity Tolerance	Subjective	Exercise capacity	0 = Good 1 = Mild fatigue 2 = Moderate limitation 3 = Poor tolerance	Kapha dominance
Abdominal Fat Deposition	Objective	Visual & anthropometric	0 = Normal 1 = Mild 2 = Moderate 3 = Severe	Medodhatu vriddhi
Overall Well-being	Subjective	Patient self-rating	0 = Excellent 1 = Good 2 = Average 3 = Poor	Ojas status

Observation (Day-wise Progression) :

Parameter	Day 0 (Baseline)	Day 15 (Mid Assessment)	Day 30 (Final Assessment)	Ayurvedic Interpretation
Weight (kg)	72 kg	70.1 kg	68.2 kg	Gradual Medodhatu Kshaya
BMI (kg/m²)	28.1	27.4	26.6	Reduction in Sthoulya
Bloating (Adhmana)	Severe	Moderate	Mild	Ama Pachana, Vata-Kapha balance
Appetite (Agni Bala)	Poor (Mandagni)	Irregular but improving	Normal (Samagni)	Agni Deepana
Cravings	Uncontrolled	Reduced	Controlled	Manas stabilization
Emotional Eating	Frequent (daily)	Occasional	Rare	Rajas–Tamas reduction
Energy Levels (Alasya)	Severe lethargy	Moderate	Improved	Kapha reduction
Concentration	Poor	Moderate improvement	Good focus	Manas balance
Restlessness (Chanchalata)	High	Moderate	Minimal	Vata–Rajas balance
Bowel Habits	Irregular	Improving	Regular	Agni correction
Stool Nature	Sticky (Saama Mala)	Semi-normal	Normal	Ama reduction
Tongue Coating	Thick coating	Moderate coating	Mild coating	Ama clearance
Sleep (Nidra)	Disturbed	Improved	Sound sleep	Manasika balance
Physical Activity Tolerance	Low	Moderate	Good	Increased Vyayama Shakti
Abdominal Fat	Marked	Slight reduction	Visible reduction	Medodhatu reduction
Overall Well-being	Poor	Improved	Good	Ojas improvement

Results:

The present case study demonstrated significant clinical improvement following the 30-day Ayurvedic detox intervention. There was a gradual and sustained reduction in body weight from 72 kg at baseline to 68.2 kg at Day 30, accounting for a total weight loss of 3.8 kg (5.27%). The Body Mass Index (BMI) correspondingly decreased from 28.1 kg/m² to 26.6 kg/m², indicating improvement within the overweight category and reflecting Medodhatu Kshaya.

Digestive function showed marked enhancement, with the patient initially presenting with Mandagni, characterized by poor appetite, bloating, and heaviness. By the end of the intervention, digestion normalized to Samagni, as evidenced by improved appetite, reduction in bloating from severe to mild, and regularization of bowel habits. Clinical features of Ama, including coated tongue, sticky stools (Saama Mala), and lethargy (Alasya), were significantly reduced, indicating effective Ama Pachana and Srotoshodhana.

Notably, there was substantial improvement in parameters related to the gut–brain axis. Emotional eating behavior, which was initially frequent and independent of mood, reduced to rare occurrences. Cravings decreased from uncontrolled to well-regulated, while restlessness (Chanchalata) diminished considerably. Cognitive functions such as concentration improved from poor to satisfactory levels, reflecting better Manasika balance with reduction in Rajas and Tamas.

Energy levels improved progressively, with the patient transitioning from a lethargic state to increased physical activity tolerance, indicating enhanced Vyayama Shakti. Sleep patterns also normalized, shifting from disturbed to sound sleep, further supporting mental and physiological stabilization. Overall, the intervention resulted in significant improvement in Agni, reduction of Ama, balancing of Dosha (particularly Kapha), and enhancement of Ojas, leading to sustainable weight loss and improved well-being. These findings highlight the effectiveness of Ayurvedic detox drinks in modulating the gut–brain axis and managing overweight conditions holistically.

Discussion :

The present case study demonstrates that a structured 30-day regimen of Ayurvedic detox drinks can produce significant improvements in both metabolic and psychological parameters associated with overweight, supporting the concept of gut–brain axis regulation through Agni modulation and Ama Pachana. The observed outcomes—including weight reduction, improved digestion, reduced bloating, and better control over emotional eating—can be explained through an integrative understanding of modern neuro-gastroenterology and classical Ayurvedic principles.

From a biomedical perspective, overweight is increasingly recognized as a disorder involving dysregulation of the gut–brain axis, where communication between the gastrointestinal system and central nervous system influences appetite, satiety, and emotional behavior[26,7]. The patient in this study exhibited classical features of gut–brain dysregulation, including emotional eating irrespective of mood, cravings, restlessness, and impaired concentration. Such symptoms are linked

to altered signalling of hormones like ghrelin and leptin, along with neurotransmitters such as serotonin, a large proportion of which is synthesized in the gut[28,29]. Improvement in these parameters following intervention suggests restoration of gut–brain signaling.

Ayurveda explains this pathogenesis through the concept of Mandagni leading to Ama formation, which disrupts normal metabolism and mental clarity. The patient's initial presentation—Adhmana (bloating), Alasya (lethargy), Saama Mala, coated tongue, and excessive Meda accumulation—clearly indicated the presence of Ama and impaired Agni. According to classical texts, Sthoulya is a Santarpanajanya Vyadhi, primarily involving Kapha dosha and Medodhatu vriddhi[30,31]. Additionally, the presence of emotional eating and restlessness reflects Manasika imbalance with Rajas–Tamas predominance, which further aggravates digestive dysfunction[32].

The intervention focused on Agni Deepana, Ama Pachana, and Kapha–Medohara action using seven Ayurvedic detox drinks administered in a rotational manner. Each component contributed through specific pharmacodynamic actions. Jeera (Cuminum cyminum) enhances digestive enzyme activity and improves metabolism, supporting Agni[33]. Ajwain (Trachyspermum ammi) acts as a carminative and reduces Vata-Kapha-induced bloating[34]. Saunf (Foeniculum vulgare) improves gastrointestinal motility and reduces acidity, thereby aiding digestion[35]. Methi (Trigonella foenum-graecum) has been shown to regulate glucose metabolism and increase satiety, reducing caloric intake[36]. Triphala, a well-established Rasayana, exerts detoxifying, antioxidant, and gut microbiota-modulating effects, which are crucial in metabolic disorders[37].

The use of Lemon–Honey Ushnodaka aligns with classical Ayurvedic recommendations for Ama Pachana and Medohara action, promoting lipid metabolism and enhancing digestion[38]. The polyherbal combination of Jeera–Ajwain–Saunf provides a synergistic effect, improving digestive fire and reducing gas formation, thereby directly influencing gut function[39]. Collectively, these interventions work to restore Agni, eliminate Ama, and normalize Dosha balance.

The timing of administration—morning on an empty stomach—is particularly significant. Ayurveda emphasizes that Agni is most responsive during this period, allowing optimal absorption and therapeutic action. From a modern standpoint, early morning intake of such formulations may influence circadian rhythms, gut motility, and metabolic priming for the day.

A key outcome of this study was the reduction in emotional eating, which highlights the role of detox interventions in regulating the gut–brain axis. Emerging evidence suggests that gut microbiota influences neurotransmitter production and stress response pathways[40,41]. By improving gut health, Ayurvedic detox drinks may indirectly regulate mood and behavior, leading to better control over cravings and eating patterns. This is further supported by the observed improvement in sleep and reduction in restlessness, indicating stabilization of the hypothalamic–pituitary–adrenal (HPA) axis, which is known to be involved in stress-induced obesity[42].

The gradual weight reduction of 3.8 kg over 30 days without drastic dietary restriction indicates a sustainable and physiological approach. Unlike crash dieting, which often leads to metabolic slowdown and rebound weight gain, Ayurvedic interventions focus on restoring metabolic balance. This aligns with the principle of Nidana Parivarjana (removal of causative factors) and correction of underlying pathology rather than symptomatic treatment.

Another important aspect is the improvement in Ojas (vital essence), reflected by enhanced energy levels, better concentration, and overall well-being. In Ayurveda, Ojas represents the end product of proper digestion and metabolism, and its improvement signifies systemic health. The transition from a state of lethargy and mental dullness to increased vitality suggests successful restoration of physiological and psychological balance.

The findings of this study support the hypothesis that Ayurvedic detox drinks act as modulators of the gut–brain axis, integrating digestive, metabolic, and psychological pathways. This approach offers several advantages:

- It is safe and cost-effective, using readily available ingredients
- It addresses both physical (Agni, Ama, Meda) and mental (Rajas, Tamas) aspects
- It provides a sustainable and non-invasive strategy for weight management

However, as this is a single-case study, the findings cannot be generalized without further large-scale clinical trials. Future research should focus on controlled studies with biochemical markers, microbiome analysis, and long-term follow-up to validate these results.

Conclusion :

The present clinical case study demonstrates that a structured 30-day regimen of Ayurvedic detox drinks is effective in achieving sustainable weight reduction and holistic metabolic correction through modulation of the gut–brain axis. The intervention resulted in a 3.8 kg reduction in body weight along with significant improvement in digestive function, reduction of bloating (Adhmana), normalization of bowel habits, and enhanced energy levels, indicating successful Agni Deepana and Ama Pachana.

Notably, there was a marked decline in emotional eating behavior, cravings, restlessness, and impaired concentration, reflecting restoration of Manasika balance (reduction in Rajas–Tamas). This highlights the pivotal role of Ayurvedic therapy not only in correcting physical metabolism but also in addressing the psychological components associated with overweight, thereby supporting the concept of gut–brain axis regulation.

From an Ayurvedic perspective, the intervention effectively targeted the core pathology of Sthoulya, namely Mandagni, Ama accumulation, and Medodhatu vriddhi, leading to improved metabolic efficiency and overall well-being (Ojas enhancement). The use of simple, cost-effective, and easily available detox drinks ensured high patient compliance and safety, with no adverse effects observed during the study period.

In conclusion, Ayurvedic detox drinks offer a practical, non-invasive, and integrative approach for the management of overweight conditions by

restoring digestive balance, eliminating metabolic toxins, and regulating neuro-gastrointestinal interactions. This approach aligns closely with modern scientific understanding of the gut–brain axis and underscores Ayurveda's potential as a preventive and therapeutic system in lifestyle disorders. However, further large-scale, controlled clinical studies are recommended to validate these findings and establish broader clinical applicability.

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