

**DRINKING AIR WITH MALSHE'S PIERCED STRAW CAN SATISFY HUNGER,
INHIBIT GHRELIN AND MANEUVERING IT INTO THE INTESTINES CAN RELEASE
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ABSTRACT

The control of appetite and satiety involves complex gut-brain signaling mediated by hormones such as ghrelin and glucagon-like peptide-1 (GLP-1). Ghrelin, secreted predominantly by the empty stomach, stimulates hunger, while GLP-1, released in the intestines in response to nutrient contact, promotes satiety and insulin secretion. This hypothesis proposes a non-nutritive, mechanical method of influencing these hormonal signals using a novel tool: *Malshe's Pierced Straw*.^[1] The act of slowly drinking air through a pierced straw mimics the oropharyngeal and gastric mechanics of food intake without delivering calories, potentially downregulating ghrelin secretion. Further, if the ingested air is maneuvered into the intestines via specific yogic postures, it may stimulate mechanosensors and enteroendocrine L-cells to secrete GLP-1. This hypothesis opens a potential avenue for non-pharmacological appetite control and metabolic regulation through breath-manipulative techniques.

KEYWORDS: Appetite, Hunger, Ghrelin, Satiety, Satiety peptides, GLP-1 Obesity, Diabetes, Air Drinking, Air Distension of GIT.

INTRODUCTION

Appetite regulation is critically governed by gut-derived hormones. Ghrelin is unique in being a hunger-promoting hormone whose plasma levels rise before meals and fall afterward. In contrast, GLP-1 is secreted postprandially by intestinal L-cells, promoting satiety and enhancing insulin secretion. Interventions targeting these hormones have become central to obesity and diabetes research.

Traditional yogic practices often emphasize the role of drinking air and posture in internal organ function. Building on these principles, we hypothesize that structured ingestion of air using a pierced straw—hereafter referred to as *Malshe's Pierced Straw*—can be harnessed to modulate ghrelin and GLP-1 levels via mechanical signaling in the gut.

The Hypothesis

We hypothesize two related mechanisms

1. Inhibition of Ghrelin via Simulated Ingestion

The act of drinking air through a pierced straw mimics sipping a beverage, engaging the mouth, pharynx, and esophagus; and distends the stomach in a manner resembling food consumption. This process could provide a top-down inhibitory signal to ghrelin-

producing cells in the fundus of stomach, based on the neurohormonal feedback loops that integrate sensory and mechanical input to regulate hunger.

2. GLP-1 Release via Directed Air Transit to Intestines

Once air is swallowed into the stomach, it can be maneuvered into the intestines through specific yogic postural adjustments (e.g., inverted asanas). The presence of air in the small intestine may stimulate enteroendocrine cells through mechanosensitive pathways, similar to how nutrients stretch the intestinal walls. L-cells located primarily in the distal small intestine and colon may interpret this mechanical stimulus as equivalent to a nutrient bolus, releasing GLP-1 in response.

Supporting Rationale**1. Ghrelin Modulation by Gastric Distension**

Studies have shown that mechanical distension of the stomach—even by balloons—can suppress ghrelin secretion.^[2] This suggests that caloric content is not the sole determinant of ghrelin modulation.

2. GLP-1 and Mechanosensation

While nutrient sensing is the primary trigger for GLP-1

release, recent studies suggest that mechanical stimulation of intestinal L-cells may also contribute.^[3] Air-induced stretching could engage Piezo1 channels or other mechanoreceptors on L-cells, initiating GLP-1 secretion.

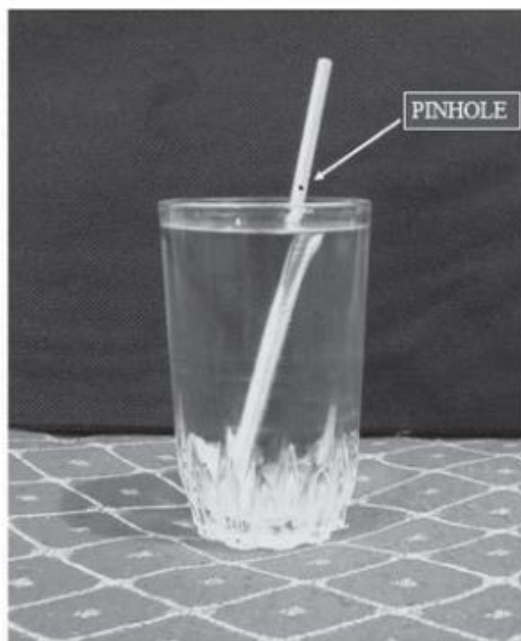
3. Yogic Physiology and Air Manipulation

Traditional yogic practices include *air drinking* and moving it down to pass as flatus (known as *vata-sara*) and techniques such as *shashankasana*, *sarvangasana* and *viparita karani*, which are known to move gases within the gastrointestinal tract. These techniques may

serve to maneuver ingested air from the stomach into the intestines.

Proposed Method of Application

- **Malshe's Pierced Straw:** A straw with a single pinhole sucks-in air if one attempts to drink liquid with it. The pinhole lets air in which is mandatorily swallowed along with liquid. The slow ingestion of air through this straw is hypothesized to enhance sensory feedback as the stomach distends, adding to the "pseudo-prandial" effect.



Malshe's Pierced Straw

Yogic Maneuvers: After air ingestion, the subject can perform specific postural inversions to assist air transit to the small intestine. Feedback from intestinal distension

may trigger a hormonal response in the form of GLP-1

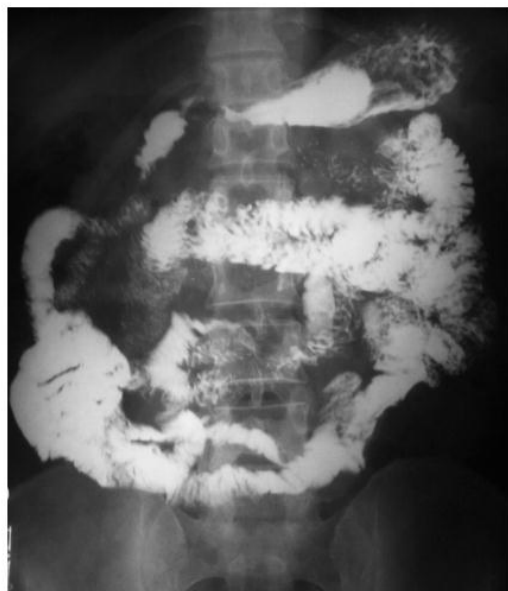


Simplest inverted posture shashankasana.

Demonstrable Intestinal distension by air-drinking

We have done Barium meal follow through study before and after 12- rounds of air drinking and postural

maneuver to move it into the intestines. Intestinal distension can be clearly seen.



A. Normal intestines seen in a Barium X-Ray



B. After 12 rounds of Air-Drinking and inverted posture
Done in 15 minutes

Potential Implications

If validated, this technique could offer a non-invasive, zero-calorie intervention to:

- Reduce pre-meal hunger by inhibiting ghrelin.
- Enhance post-ingestive satiety via GLP-1 release.
- Aid weight loss and glycemic control in metabolic syndrome.
- Complement pharmaceutical or behavioral interventions in appetite control.

Testable Predictions

1. Fasting ghrelin levels will drop within minutes after simulated air ingestion via the pierced straw, compared to controls.
2. Post-air-ingestion GLP-1 levels will rise when followed by specific postural routines, compared to static or supine control postures.
3. Subjects using this technique regularly may report lower subjective hunger ratings and reduced caloric intake over time.

CONCLUSION

The human gut responds to both chemical and mechanical stimuli in regulating appetite hormones. This hypothesis proposes a novel, non-caloric method to manipulate ghrelin and GLP-1 levels through air ingestion and yogic movement. Clinical trials are warranted to explore its feasibility and efficacy. If validated, *Malshe's Pierced Straw* could become a simple yet powerful tool in the management of obesity and metabolic disorders.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author used ChatGPT in order to better structure the language. After using this tool/service, the author reviewed and edited

the content as needed and takes full responsibility for the content of the publication.

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