SKM YOGA

YOGA TEACHERS TRAINING

STUDY MODULE

DIGESTIVE SYSTEM

& IMPACT OF YOGA ON DIGESTIVE HEALTH

Anatomy • Physiology • Yogic Science • Therapeutic Applications

Compiled by

Dr. Shivam Mishra

SKM Yoga Institute

PREFACE

The digestive system is one of the most vital and dynamic systems of the human body. In both modern anatomy and ancient yogic science, digestion is considered the cornerstone of health, vitality, and longevity. The yogic tradition speaks of Agni — the digestive fire — as the foundation of all life processes, a concept that resonates deeply with modern understanding of metabolism, gut immunity, and the gut-brain axis.

This module has been compiled for students of the Yoga Teachers Training Programme at SKM Yoga, with the intention of bridging the gap between classical anatomy-physiology and the profound wisdom of yogic science. A yoga teacher who understands the digestive system — both anatomically and yogically — is equipped to guide students not merely through physical postures, but toward genuine, lasting health.

This manual covers the complete anatomy and physiology of the digestive system, the mechanisms by which yoga influences digestive function, specific asanas and pranayamas with their therapeutic applications, and the rich vocabulary of yogic terms related to digestion. Each section is colour-coded for ease of navigation and study.

— Dr. Shivam Mishra
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Colour Guide to This Manual

Colour Theme	Chapter / Section
Green	Chapter 1 — Anatomy of the Digestive System
Blue	Chapter 2 — Physiology of Digestion
Orange	Chapter 3 — Yoga's Impact on Digestion
Purple	Chapter 4 — Asanas for the Digestive System
Pink / Rose	Chapter 5 — Pranayama & Shatkarma
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CHAPTER ONE

Anatomy of the Digestive System

The digestive system is a complex, continuous muscular tube approximately 9 metres (30 feet) in length, extending from the mouth to the anus. It is designed to intake food, break it down mechanically and chemically into absorbable nutrients, absorb those nutrients into the bloodstream, and eliminate waste. A thorough knowledge of the anatomy of this system is indispensable for a yoga teacher working therapeutically.

1.1 Overview of the Digestive Tract

The digestive system is divided into two main components: the Alimentary Canal (GI Tract) — a continuous tube from mouth to anus — and the Accessory Digestive Organs (liver, gallbladder, pancreas, salivary glands) that assist digestion without food passing directly through them.

Structure	Location	Primary Function
Oral Cavity (Mouth)	Head	Mechanical breakdown, salivary digestion, bolus formation
Pharynx	Throat	Passage of bolus from mouth to oesophagus
Oesophagus	Thoracic cavity	Peristaltic transport of bolus to stomach (25–30 cm)
Stomach	Upper left abdomen	Churning, acid digestion, chyme formation
Small Intestine	Central abdomen	Primary site of nutrient absorption (6–7 m)
Large Intestine	Peripheral abdomen	Water absorption, faeces formation, elimination (1.5 m)
Rectum & Anus	Pelvic cavity	Faeces storage and controlled defecation

1.2 The Oral Cavity — The Gateway of Digestion

The oral cavity is the entry point of the digestive system. Digestion begins here — both mechanically and chemically — making it far more important than it is often given credit for in conventional teaching.

—Anatomical Structures of the Oral Cavity

- **Teeth (Dentition) —** 32 adult teeth perform mastication — the mechanical grinding and tearing of food into smaller particles, dramatically increasing the surface area for enzyme action.
- **Tongue —** A muscular organ lined with taste receptors (papillae). Manipulates food during chewing, forms the bolus, and initiates the swallowing reflex.
- **Salivary Glands (3 pairs) —** Parotid (largest, in front of ear), Submandibular (below jaw), and Sublingual (under tongue). They collectively produce 1–1.5 litres of saliva per day.
- **Saliva Composition —** 99.5% water, mucin (lubricates bolus), salivary amylase (begins starch digestion), lysozyme (antibacterial), IgA (immune protection), electrolytes.

1.3 The Oesophagus

The oesophagus is a muscular tube approximately 25–30 cm long, running from the pharynx through the thoracic cavity and the diaphragm to the stomach. Its function is purely transport — it does not participate in digestion or absorption.

Wall Layers: Mucosa (inner lining), Submucosa (glands, nerves), Muscularis (smooth and skeletal muscle), and Adventitia (outer fibrous coat).

Lower Oesophageal Sphincter (LES): A muscular valve at the oesophago-gastric junction. When the LES is weak or relaxed inappropriately, gastric acid refluxes upward — causing GERD, a condition that specific yoga practices can significantly address.

1.4 The Stomach

The stomach is a J-shaped, muscular hollow organ located in the epigastric and left hypochondriac regions of the abdomen. It acts as a temporary reservoir for food, continues digestion, and regulates the rate at which chyme (partially digested food) enters the small intestine.

Regions of the Stomach

- **Cardia —** Entry region receiving food from the oesophagus.
- **Fundus —** Upper dome-shaped region; stores gas (important in yoga practices).
- **Body (Corpus) —** The largest central region; site of most gastric secretion and churning.
- **Pylorus —** Lower funnel-shaped region; the pyloric sphincter controls passage of chyme into the duodenum.

Gastric Secretions

Secretion	Role in Digestion
Hydrochloric Acid (HCl)	Creates acidic environment (pH 1.5–3.5); activates pepsinogen; kills pathogens
Pepsinogen (→ Pepsin)	Chief cells secrete pepsinogen; HCl converts it to pepsin; begins protein digestion
Gastric Lipase	Begins lipid (fat) digestion in the stomach (minor role)
Intrinsic Factor	Parietal cells; essential for Vitamin B12 absorption in the ileum

Secretion	Role in Digestion
Mucus	Goblet cells; protects the stomach lining from HCl self-digestion
Gastrin (Hormone)	G-cells; stimulates parietal cells to produce more HCl

1.5 The Small Intestine

The small intestine is the primary site of both digestion and absorption. At 6–7 metres in length and approximately 2.5 cm in diameter, it contains remarkable structural adaptations that increase its absorptive surface area to approximately 200–300 square metres — roughly the size of a tennis court.

Three Segments of the Small Intestine

- **Duodenum (25 cm) —** Receives chyme from the stomach; receives bile from the liver/gallbladder and pancreatic juice from the pancreas via the Ampulla of Vater; initiates final digestion of all macronutrients.
- **Jejunum (2.5 m) —** Primary site of nutrient absorption; highly folded with abundant villi and microvilli; absorbs carbohydrates, proteins, fats, vitamins, and minerals.
- **Ileum (3.5 m) —** Absorbs remaining nutrients; specialised absorption of Vitamin B12 (with Intrinsic Factor) and bile salts; contains Peyer's patches (lymphoid tissue — gut immunity).

Structural Adaptations for Absorption

- **Circular Folds (Plicae Circulares) —** Permanent folds of mucosa that increase surface area 3-fold.
- **Villi —** Finger-like projections (0.5–1.5 mm tall) of mucosa; each contains a lacteal (lymph vessel for fat absorption) and a capillary network. Increase surface area 10-fold.
- **Microvilli (Brush Border) —** Microscopic projections on the surface of each villus cell; contain digestive enzymes. Increase surface area 20-fold further.

1.6 The Large Intestine (Colon)

The large intestine (approximately 1.5 metres, 6.5 cm diameter) receives indigestible food residues from the ileum and performs final processing before elimination. It does not participate significantly in digestion but plays a crucial role in water balance, electrolyte absorption, and immune function.

Segments of the Large Intestine

- **Caecum + Appendix —** Pouch receiving material from the ileum via the ileocaecal valve; the appendix is a lymphoid organ with immune function.
- **Ascending Colon —** Travels upward on the right side of the abdomen.
- **Transverse Colon —** Crosses the abdomen horizontally; highly mobile — important in yoga twisting postures.
- **Descending Colon —** Travels down the left side.
- **Sigmoid Colon —** S-shaped; stores faeces before defecation.
- **Rectum & Anus —** Final storage and controlled elimination; the external anal sphincter is voluntary — strengthened through Mula Bandha practice in yoga.

The Gut Microbiome

The large intestine houses approximately 100 trillion microorganisms collectively called the gut microbiome. These organisms play essential roles in fermenting indigestible dietary fibre (producing short-chain fatty acids), synthesising Vitamin K and certain B vitamins, regulating immune function (70% of the immune system resides in the gut), and the gut-brain axis — directly influencing mood, cognition, and mental health.

1.7 Accessory Digestive Organs

The Liver

The liver (approximately 1.5 kg, located in the right upper quadrant) is the largest internal organ and performs over 500 metabolic functions. Its digestive role centres on the production of bile.

Liver Function	Description
Bile Production	Produces 500–1000 mL of bile daily; bile emulsifies fats for enzymatic digestion
Carbohydrate Metabolism	Glycogenesis (stores glucose), Glycogenolysis (releases glucose), Gluconeogenesis (synthesises glucose from non-carbohydrates)
Protein Metabolism	Deamination of amino acids; synthesis of plasma proteins (albumin, clotting factors)
Lipid Metabolism	Synthesises cholesterol, lipoproteins; beta-oxidation of fatty acids
Detoxification	Filters blood from the portal vein; neutralises toxins, drugs, alcohol
Vitamin Storage	Stores Vitamins A, D, E, K, and B12

The Gallbladder

The gallbladder (pear-shaped, 7–10 cm, tucked under the right lobe of the liver) stores and concentrates bile produced by the liver (10-fold concentration). When fatty food enters the duodenum, the hormone CCK (cholecystokinin) stimulates the gallbladder to contract and release bile through the common bile duct into the duodenum.

The Pancreas

The pancreas (15–20 cm, located behind the stomach) is a dual-function gland — exocrine (digestive) and endocrine (hormonal). Its exocrine function is to produce pancreatic juice (pH 8, highly alkaline to neutralise stomach acid) containing: Pancreatic amylase (starch digestion), Pancreatic lipase (fat digestion), Trypsin/Chymotrypsin (protein digestion), and Nucleases (nucleic acid digestion).

Endocrine Function: The Islets of Langerhans secrete insulin (lowers blood glucose) and glucagon (raises blood glucose) — critically important in the yogic management of diabetes through specific practices.

CHAPTER TWO

Physiology of Digestion

Physiology of digestion describes the functional processes by which the body converts food into usable nutrients. These processes — motility, secretion, digestion, absorption, and elimination — are orchestrated by a sophisticated interplay of neural, hormonal, and mechanical signals.

2.1 The Four Processes of Digestion

Process	Description
Ingestion	Taking food into the mouth — the starting point of digestion.
Digestion	Mechanical (motility: chewing, churning, peristalsis) and Chemical (enzymatic breakdown of macromolecules into absorbable units).
Absorption	Transport of digested nutrients across the intestinal epithelium into blood and lymph.
Defecation	Elimination of undigested residues as faeces.

2.2 Motility — The Movement of Digestion

Motility refers to the contractions of the GI wall that propel and mix the contents. It is driven by smooth muscle in the wall of the GI tract, coordinated by the Enteric Nervous System (the 'second brain').

- **Peristalsis —** Wave-like contractions that propel food/chyme in one direction through the tube. Occurs throughout the oesophagus, stomach, and intestines.
- **Segmentation —** Rhythmic local contractions in the small intestine that chop and mix chyme with digestive juices — primary mechanism for promoting absorption.
- **Haustral Churning —** Slow, back-and-forth movement in the large intestine, allowing water absorption.
- **Mass Peristalsis —** Powerful propulsive contractions in the colon triggered by the gastrocolic reflex (food entering the stomach stimulates colon activity). This is why a warm drink or breakfast can stimulate a bowel movement.

2.3 Neural Control — The Enteric Nervous System

The Enteric Nervous System (ENS) — the 'second brain' — is an independent network of approximately 500 million neurons embedded in the wall of the GI tract. It can function autonomously from the brain and spinal cord, though it communicates extensively with the Central Nervous System via the Vagus Nerve.

Two Plexuses of the ENS

- **Myenteric Plexus (Auerbach's) —** Between the circular and longitudinal muscle layers; primarily controls GI motility.

- **Submucosal Plexus (Meissner's) —** In the submucosa; primarily controls secretion and absorption.

Autonomic Nervous System & Digestion

Division	Effect on Digestion
Parasympathetic (Rest & Digest — CN X Vagus)	INCREASES digestive activity: stimulates peristalsis, increases secretions, relaxes sphincters — promotes active digestion and absorption.
Sympathetic (Fight or Flight)	DECREASES digestive activity: inhibits peristalsis, reduces secretions, constricts sphincters, diverts blood to muscles — suppresses digestion during stress.

This autonomic balance is of central importance to the yoga teacher: yoga practices — particularly slow breathing, forward folds, and restorative postures — activate the parasympathetic system, directly enhancing digestive function. Chronic stress (sympathetic dominance) is one of the primary causes of modern digestive disorders.

2.4 Hormonal Control of Digestion

Hormone	Source	Primary Action
Gastrin	G-cells (stomach antrum)	Stimulates HCl secretion; promotes gastric motility
Secretin	S-cells (duodenum)	Stimulates pancreatic bicarbonate; inhibits gastric acid
CCK (Cholecystokinin)	I-cells (duodenum & jejunum)	Stimulates pancreatic enzymes; contracts gallbladder; signals satiety to brain
GIP (Gastric Inhibitory Peptide)	K-cells (duodenum & jejunum)	Inhibits gastric acid; stimulates insulin release
Motilin	Enteroendocrine cells	Stimulates migrating motor complex — the 'housekeeping' contractions between meals

2.5 Digestion of Macronutrients

Carbohydrate Digestion

Carbohydrate digestion begins in the mouth (salivary amylase) and is completed in the small intestine (pancreatic amylase and brush border enzymes — maltase, sucrase, lactase). Final products are monosaccharides (glucose, fructose, galactose) absorbed into portal blood.

Protein Digestion

Protein digestion begins in the stomach (pepsin, HCl) and is completed in the small intestine (trypsin, chymotrypsin from pancreas; brush border peptidases). Final products are amino acids and small peptides absorbed into portal blood.

Fat Digestion

Fat digestion begins minimally in the mouth and stomach (lingual/gastric lipase). The major process occurs in the duodenum: bile emulsifies fat globules into micelles; pancreatic lipase then breaks triglycerides into fatty acids and monoglycerides, which are absorbed into lacteals (lymph vessels) and enter the bloodstream via the thoracic duct.

2.6 The Gut-Brain Axis

The gut-brain axis is a bidirectional communication network linking the enteric nervous system, the autonomic nervous system, the hypothalamic-pituitary-adrenal (HPA) axis, and the gut microbiome. This explains why emotional states profoundly affect digestion (anxiety causing diarrhoea, grief causing nausea, excitement causing 'butterflies') and why gut dysbiosis can influence mental health.

CLINICAL SIGNIFICANCE FOR THE YOGA TEACHER

- ▶IBS (Irritable Bowel Syndrome) is now understood as a gut-brain axis disorder — yoga is evidence-based treatment.
- ▶Serotonin: approximately 90–95% of the body's serotonin is produced in the gut — connecting gut health to mood.
- ▶Yoga's proven ability to reduce HPA axis activation directly improves gut-brain axis regulation.
- ▶Teaching students to breathe deeply activates the vagus nerve, directly stimulating parasympathetic digestive activity.

CHAPTER THREE

Impact of Yoga on the Digestive System

Modern research has increasingly validated what the yogic tradition has known for millennia: yoga is a powerful, multi-mechanism intervention for digestive health. Unlike pharmaceutical approaches that target single pathways, yoga simultaneously addresses the structural (mechanical), neurological (autonomic), hormonal, and psychological dimensions of digestive function.

3.1 Mechanisms of Yoga's Digestive Effects

SIX MECHANISMS BY WHICH YOGA IMPROVES DIGESTION

►1. Mechanical Compression & Massage — asanas directly compress, twist, and stretch abdominal organs.

►2. Parasympathetic Activation — pranayama and slow breathing activate the vagus nerve, stimulating digestive secretions and motility.

►3. Stress Reduction — cortisol reduction via HPA axis modulation removes the single greatest inhibitor of digestion.

►4. Abdominal Muscle Strengthening — core work improves posture, reducing pressure on digestive organs.

►5. Diaphragmatic Breathing — the pumping action of the diaphragm massages the liver, stomach, and transverse colon with every breath.

►6. Gut Microbiome Support — stress reduction and improved circulation positively influence microbiome diversity.

3.2 Yoga and Common Digestive Conditions

Condition	Mechanism of Yoga Benefit	Recommended Practices
GERD / Acid Reflux	Stress reduction lowers acid production; strengthening LES tone; improving posture reduces hiatal pressure	Vajrasana (post-meal), Viparita Karani, Nadi Shodhana
Constipation	Stimulates mass peristalsis; improves bowel motility; reduces sympathetic tone	Pawanmuktasana, Trikonasana, Ardha Matsyendrasana, Kapalabhati
IBS (Irritable Bowel Syndrome)	HPA axis regulation; vagal tone improvement; stress-related bowel hypersensitivity reduction	Yoga Nidra, Supta Baddha Konasana, Bhramari Pranayama
Bloating & Flatulence	Mechanical release of trapped gas via compression; improved motility	Pawanmuktasana (Wind Relieving Pose), Apanasana

Condition	Mechanism of Yoga Benefit	Recommended Practices
Diabetes (Type 2)	Improves insulin sensitivity; stimulates pancreatic function; reduces cortisol-related insulin resistance	Dhanurasana, Ardha Matsyendrasana, Sarvangasana, Kapalabhati
Liver Disorders (Fatty Liver)	Improves hepatic circulation; reduces visceral fat; improves lipid metabolism	Twisting asanas, Bhujangasana, deep diaphragmatic breathing
Peptic Ulcer (Subacute Phase)	Reduces acid production via stress reduction; improves mucosal circulation	Yoga Nidra, Shavasana, Nadi Shodhana (NO active abdominal work)
Obesity-Related Digestive Issues	Reduces visceral adiposity; improves metabolic rate; reduces leptin resistance	Dynamic Surya Namaskar, core strengthening asanas, Kapalabhati

3.3 The Yogic Science of Digestive Fire (Agni)

In Ayurveda and yogic physiology, Agni (fire) is the central intelligence of the digestive system. The word 'agni' in Sanskrit means fire, and in the context of the body, it refers to the transformative force that converts food into consciousness, waste, and vital energy.

- **Jatharagni —** The primary digestive fire located in the stomach and small intestine. All other agnis in the body are dependent on Jatharagni. When balanced (sama agni), health is perfect. When too high (tikshna agni), inflammation, hyperacidity, and ulcers arise. When too low (manda agni), sluggish digestion and toxin accumulation follow. When irregular (vishama agni), inconsistent digestion and IBS-like symptoms occur.
- **Agni in Modern Terms —** Jatharagni corresponds to the totality of digestive secretions and enzyme activity — particularly gastric acid, pepsin, pancreatic enzymes, and bile.

How Yoga Balances Agni

- **Stimulates manda agni (low fire) —** Kapalabhati, Bhastrika, Uddiyana Bandha, Nauli Kriya — powerfully stimulate digestive secretions and bowel motility.
- **Cools tikshna agni (excess fire) —** Sheetali, Seetkari, Chandrabhedana (left nostril breathing), Shavasana, Yoga Nidra.
- **Regulates vishama agni (irregular fire) —** Nadi Shodhana (alternate nostril breathing) is the primary balancing technique — normalises both sympathetic and parasympathetic tone.

CHAPTER FOUR

Yoga Asanas for the Digestive System

The following asanas are specifically selected for their profound effects on the digestive system. Each entry includes the Sanskrit etymology, step-by-step technique, anatomical mechanism, therapeutic benefits, contraindications, and yogic science.

Pawanmuktasana (Wind Relieving Pose)

Pawan = Wind | Mukta = Release | Asana = Pose

—Technique

Lying supine, draw one or both knees to the chest. Clasping the hands around the shins, press the thighs gently into the abdomen. Hold for 30–60 seconds with normal breathing. For the double-leg version, rock side to side gently.

—Anatomical Mechanism

Direct mechanical compression of the ascending and descending colon; stimulates the ileocaecal valve area; compresses the sigmoid colon; activates the gastrocolic reflex; mobilises trapped intestinal gas.

—Therapeutic Benefits

- Most effective yoga asana for flatulence and bloating
- Stimulates bowel motility in constipation
- Strengthens lumbar region and hip flexors
- Massages the caecum and appendix area
- Stimulates apana vayu (downward-moving prana)

—Contraindications

⚠*Recent abdominal surgery, pregnancy (second/third trimester), acute appendicitis suspicion.*

—Yogic Significance

In yogic anatomy, this posture directly stimulates Apana Vayu — the downward-moving pranic force governing elimination, reproduction, and purification.

Ardha Matsyendrasana (Half Spinal Twist)

Ardha = Half | Matsyendra = Lord of Fish | Asana = Pose

—Technique

Sit with right leg extended. Bend the left knee, placing the left foot outside the right thigh. Inhale to lengthen the spine. Exhale and rotate the torso to the left, placing the right elbow outside the left knee. Gaze over the left shoulder. Hold 30–60 seconds per side.

Anatomical Mechanism

Alternating lateral compression of the liver, gallbladder (right twist) and spleen, descending colon (left twist); stimulates bile secretion from gallbladder; compresses and releases the transverse and sigmoid colon; promotes peristalsis; improves hepatic portal circulation.

Therapeutic Benefits

- The most effective twisting asana for liver and gallbladder function
- Stimulates pancreatic secretions — beneficial in Type 2 Diabetes
- Relieves constipation by stimulating the entire colon
- Improves kidney function and adrenal circulation
- Detoxifies the digestive organs

Contraindications

⚠*Peptic ulcer (acute), severe liver disease, spinal disc herniation, pregnancy.*

Yogic Significance

Named after the Natha Siddha Matsyendranatha, this posture is said to ignite the Jatharagni (digestive fire) and is listed in the Hatha Yoga Pradipika as one of the most beneficial of all asanas.

Dhanurasana (Bow Pose)

Dhanu = Bow | Asana = Pose

Technique

Lie prone. Bend both knees and reach back to grasp the ankles. Inhale and simultaneously lift the thighs, chest, and head off the floor by pressing the feet back into the hands. The body takes the shape of a drawn bow. Hold 20–30 seconds, breathing freely.

Anatomical Mechanism

Powerful compression of the entire anterior abdominal wall against the floor, massaging all abdominal organs simultaneously; stimulates the liver, gallbladder, stomach, and entire intestinal tract; the rocking motion (from breath) enhances the massage effect.

Therapeutic Benefits

- Powerfully stimulates all abdominal organs and digestive glands
- Highly effective for constipation and sluggish digestion
- Stimulates the pancreas — therapeutic for diabetes
- Strengthens the entire back musculature

- Opens the chest, improving diaphragmatic breathing

Contraindications

⚠ *Peptic ulcer (acute phase), high blood pressure, pregnancy, recent abdominal surgery, hernia.*

Yogic Significance

The Hatha Yoga Pradipika explicitly describes Dhanurasana as stimulating the digestive fire (jatharagni) and is among the most important asanas for abdominal organ health.

Vajrasana (Thunderbolt / Diamond Pose)

Vajra = Thunderbolt/Diamond | Asana = Pose

Technique

Kneel and sit back on the heels. Knees together, feet flat, heels pressing into the sides of the buttocks. Spine erect, hands on thighs. Close the eyes and breathe normally. Practise for 5–15 minutes, especially immediately after meals.

Anatomical Mechanism

Redirects blood flow from the lower limbs to the digestive organs; increases mesenteric blood flow to the small intestine; the posture slightly compresses the lower abdomen, stimulating peristalsis; the erect spine prevents the stomach from being compressed, reducing GERD symptoms.

Therapeutic Benefits

- The ONLY asana in yoga recommended for practice immediately after meals
- Dramatically improves digestion — clinical studies show accelerated gastric emptying
- Reduces acidity and GERD symptoms
- Strengthens pelvic floor and knee joint
- Excellent for meditation due to spinal alignment

Contraindications

⚠ *Severe knee injury, ankle injuries. Use blanket support under knees if needed.*

Yogic Significance

Traditional texts prescribe Vajrasana after every meal. Modern gastroenterology supports this: sitting upright post-meal significantly reduces GERD and improves gastric motility compared to lying down.

Paschimottanasana (Posterior Stretch)

Paschima = West/Back | Uttana = Intense Stretch | Asana = Pose

Technique

Sit with legs extended. Inhale to elongate the spine. Exhale and fold forward from the hips (not the waist), reaching for the feet or using a strap. Allow the abdomen to rest on the thighs. Hold 30–60 seconds, breathing deeply.

Anatomical Mechanism

Deep compression of all abdominal organs — liver, spleen, stomach, entire intestinal tract — with each exhalation; the inhalation releases the compression, creating a pumping massage effect; stimulates the kidneys; stretches the posterior body and improves spinal circulation.

Therapeutic Benefits

- Described in Hatha Yoga Pradipika as the most excellent asana for digestive health
- Stimulates the entire digestive system from stomach to rectum
- Activates Manipura chakra (solar plexus — seat of digestive fire)
- Therapeutic for constipation, dyspepsia, and digestive sluggishness
- Calms the nervous system — reduces sympathetic suppression of digestion

Contraindications

⚠ *Acute back injury, sciatica (use supported variation), pregnancy.*

Yogic Significance

The Hatha Yoga Pradipika states that Paschimottanasana makes the prana flow through the sushumna, kindles the digestive fire, and removes diseases of the abdomen.

Mayurasana (Peacock Pose)

Mayura = Peacock | Asana = Pose

Technique

Kneel. Place palms flat on the ground, fingers pointing toward the feet. Press the elbows into the abdomen (at the navel). Extend the legs behind. Shift the body weight forward until you balance horizontally on the hands with the elbows bearing the abdominal pressure.

Anatomical Mechanism

The elbows create intense, sustained pressure directly on the liver, gallbladder, stomach, and pancreas; dramatically increases blood flow to digestive organs upon release; Hatha Yoga Pradipika claims it can destroy even the most toxic foods — an assertion validated by the stimulatory effect on all digestive glands.

Therapeutic Benefits

- Strongest direct abdominal organ stimulation of any yoga posture
- Powerfully stimulates the liver, pancreas, and gallbladder
- Described in HYP as capable of destroying toxins and disease
- Develops exceptional core strength

- Stimulates the Manipura (solar plexus) chakra

—Contraindications

⚠*Advanced posture — not for beginners. Contraindicated in wrist injuries, pregnancy, hernia, high blood pressure, heart conditions.*

—Yogic Significance

The HYP extravagantly praises Mayurasana: it 'destroys all diseases, neutralises poison, and quickly cures abdominal disorders, fevers and diseases arising from disturbances of bile, phlegm and wind.'

Trikonasana (Triangle Pose)

Trikona = Triangle | Asana = Pose

—Technique

Stand with feet 3–4 feet apart. Turn right foot 90 degrees. Inhale arms wide. Exhale and extend the torso to the right, reaching the right hand toward the shin, ankle, or floor. Extend the left arm overhead. Hold 30–60 seconds per side.

—Anatomical Mechanism

Lateral stretching and compression of the right side stimulates the liver, gallbladder, and ascending colon; left side stretches the spleen and descending colon; improves circulation in the mesenteric blood vessels; strengthens the core muscles that support digestive organ position.

—Therapeutic Benefits

- Stimulates the liver and gallbladder (right side)
- Stimulates the spleen and descending colon (left side)
- Improves digestive organ circulation
- Strengthens abdominal muscles improving digestive organ support
- Opens the chest — improves diaphragmatic function

—Contraindications

⚠*Neck injury (keep gaze forward), low blood pressure (do not look up).*

—Yogic Significance

Trikonasana activates the Samana Vayu — the pranic force governing digestion and assimilation, located in the region between the heart and the navel.

Sarvangasana (Shoulder Stand)

Sarva = All | Anga = Limb | Asana = Pose

—Technique

From supine, support the lower back with the hands and lift the legs and torso to a vertical position. The body is supported on the shoulders and upper arms. The chin presses into the chest (Jalandhara Bandha). Hold 2–5 minutes.

—Anatomical Mechanism

Reverses the effect of gravity on digestive organs — relieves prolapse tendencies; venous drainage from the abdominal organs is improved; Jalandhara Bandha stimulates the thyroid gland, regulating metabolism; the inversion improves circulation in the sigmoid colon and rectum.

—Therapeutic Benefits

- Relieves constipation through gravitational reversal of colon contents
- Stimulates thyroid and parathyroid — regulates metabolism
- Improves venous return from abdominal organs
- Therapeutic for haemorrhoids through pressure reduction
- Deeply calming — reduces sympathetic suppression of digestion

—Contraindications

⚠Hypertension, cervical spondylosis, retinal detachment, glaucoma, menstruation (according to traditional teaching), thyroid disorders (without medical guidance).

—Yogic Significance

Sarvangasana is called the 'mother of all asanas' in the Iyengar tradition. It stimulates the Vishuddhi chakra (throat) and through thyroid regulation, has a powerful downstream effect on the metabolic dimension of digestion.

CHAPTER FIVE

Pranayama & Shatkarma for Digestive Health

Pranayama and shatkarma (yogic cleansing techniques) operate at the deeper level of pranic and nervous system physiology. They directly influence the autonomic regulation of digestion, stimulate abdominal organs through pressure differentials, and cleanse the entire GI tract.

5.1 Kapalabhati (Skull Shining Breath)

Kapalabhati involves rapid, forceful exhalations driven by sharp, vigorous contractions of the abdominal muscles, with passive inhalations. It is the single most powerful yogic technique for digestive stimulation.

Physiological Mechanism

- **Abdominal Contraction —** Each exhalation contracts the rectus abdominis and transverse abdominis, directly compressing the intestines, stomach, and liver.
- **Organ Massage —** At 60–120 contractions per minute, the intestines receive a vigorous rhythmic massage.
- **Diaphragmatic Pumping —** The rapid diaphragmatic movement massages the liver, spleen, and stomach from above.
- **Parasympathetic Rebound —** Brief, controlled sympathetic activation leads to parasympathetic rebound and enhanced digestion after the practice.

Therapeutic Applications

Digestive Condition	How Kapalabhati Helps
Constipation	Direct mechanical stimulation of bowel motility; stimulates mass peristalsis
Sluggish Liver	Repetitive diaphragmatic massage increases hepatic blood flow and bile secretion
Diabetes	Stimulates pancreatic tissue; improves insulin sensitivity; reduces visceral fat
Obesity / Metabolic Syndrome	Increases metabolic rate; reduces abdominal fat; improves liver fat metabolism
Flatulence & Bloating	Propels trapped gas through the intestinal tract

⚠ Contraindicated in: pregnancy, menstruation, hernia, high blood pressure, heart disease, epilepsy, recent abdominal surgery, acute peptic ulcer.

5.2 Nauli Kriya (Abdominal Rolling)

Nauli is the most advanced abdominal technique in Hatha Yoga and the most powerful therapeutic practice for digestive disorders. It involves isolating and rolling the central abdominal muscles (rectus abdominis) in a circular pattern.

Stages of Nauli

- **Uddiyana Bandha (Foundation) —** All breath exhaled; abdomen drawn completely inward and upward. Must be mastered before Nauli.
- **Madhya Nauli —** From Uddiyana Bandha, the central rectus abdominis muscles are isolated and projected forward.
- **Vama Nauli —** Isolation of the LEFT rectus abdominis — compresses the descending colon and sigmoid colon.
- **Dakshina Nauli —** Isolation of the RIGHT rectus abdominis — compresses the ascending colon and liver.
- **Nauli Chalana —** Rotating alternation between left and right — creates a churning action that massages all digestive organs in sequence.

The Hatha Yoga Pradipika describes Nauli as 'the crown of all Hatha Yoga practices' — capable of curing all digestive disorders and awakening the digestive fire.

5.3 Nadi Shodhana (Alternate Nostril Breathing)

Nadi Shodhana is the primary pranayama for balancing the autonomic nervous system and normalising digestive function. By alternating breath between the left (Ida/lunar/parasympathetic) and right (Pingala/solar/sympathetic) nostrils, it achieves a precise balance of the two autonomic divisions that govern digestion.

Digestive Effects

- **Balances vishama agni (irregular digestive fire) —** The oscillating stimulation of both autonomic divisions normalises inconsistent digestive patterns.
- **Reduces stress-induced digestive suppression —** Proven to reduce cortisol levels, removing the primary physiological inhibitor of digestion.
- **Directly stimulates parasympathetic digestive activity —** Left nostril predominance (Ida) activates the parasympathetic system, increasing digestive secretions.
- **Therapeutic for IBS —** Multiple studies document Nadi Shodhana significantly reducing IBS symptom severity.

5.4 Bhastrika (Bellows Breath)

Bhastrika — rapid, powerful, equal inhalations and exhalations driven by the diaphragm — is a powerful digestive stimulant. Unlike Kapalabhati (which emphasises the exhalation), Bhastrika generates both a powerful inhalation (drawing blood into abdominal organs) and exhalation (squeezing organs), creating a more complete pumping action.

- **Strongly stimulates —** Jatharagni — the primary digestive fire.

- **Therapeutic for —** Liver disorders, sluggish gallbladder, pancreatic insufficiency, chronic constipation.
- **Contraindicated in —** Same contraindications as Kapalabhati, plus respiratory conditions.

5.5 Shatkarma — Yogic Cleansing for the Digestive System

The Shatkarmas (six cleansing actions) described in the Hatha Yoga Pradipika are the most direct yogic interventions for the digestive tract. The text prescribes shatkarma specifically to purify the body in preparation for pranayama.

Shatkarma	Technique	Digestive Effect
Neti	Nasal irrigation with saline water (Jala Neti) or thread (Sutra Neti)	Clears nasal passages; reduces sinus congestion that contributes to swallowing of mucus
Dhauti	Cleansing of the GI tract — Vamana Dhauti (therapeutic vomiting) cleanses the stomach	Direct cleansing of the stomach and upper GI tract; removes excess mucus and bile; stimulates gastric secretion
Nauli	Abdominal rolling (described above)	The most powerful direct intestinal massage — cleanses entire digestive tract
Basti	Yogic enema — drawing water into the colon through the sphincter (advanced traditional practice)	Cleanses the large intestine; therapeutic for chronic constipation and colonic stagnation
Kapalabhati	Rapid exhalation technique (also classified as pranayama)	Clears respiratory tract; through diaphragmatic pumping, secondarily stimulates abdominal organs
Trataka	Steady gazing (not directly digestive)	Reduces mental stress — indirectly improves gut-brain axis regulation

CHAPTER SIX

Yogic Terms & Concepts Related to Digestion

The yogic tradition has developed a rich and precise vocabulary for describing the digestive system, digestive function, and the relationship between food, prana, and consciousness. Mastery of these terms is essential for the yoga teacher who wishes to teach authentically from the yogic tradition.

Agni Fire; the transformative digestive principle. Jatharagni (gastric fire) is the primary agni that all others depend upon. Corresponds to digestive enzymes, HCl, and metabolic intelligence.

Apana Vayu The downward-moving pranic force governing elimination (faeces, urine, menstruation, flatus, birth). Located in the lower abdomen and pelvis. Stimulated by Pawanmuktasana, Mula Bandha, and Nauli.

Samana Vayu The equalising pranic force located between the navel and the heart. Governs digestion and assimilation — the absorption of nutrients and the separation of the pure from the impure. Corresponds to the process of nutrient absorption in the small intestine.

Prana Vayu The inward-moving pranic force governing inhalation and taking in of food. Located in the thoracic region. Corresponds to the act of ingestion.

Vyana Vayu The pervading pranic force that distributes nourishment throughout the body via circulation. Corresponds to the cardiovascular delivery of absorbed nutrients to cells.

Udana Vayu The upward-moving force in the throat governing speech, expression, and the upward movement of energy. Governs vomiting (the upward movement of gastric contents).

Ama Undigested metabolic waste arising from incomplete digestion. In Ayurveda, ama is considered the root cause of most disease. It accumulates when Agni is weak (manda agni). Corresponds partly to intestinal permeability products, unfermented organic acids, and metabolic toxins.

Ojas The finest essence of food and reproductive fluid; the basis of immunity, vitality, and consciousness. Produced when digestion is perfect and Agni is balanced. Corresponds to immunoglobulins, neurotrophic factors, and anabolic hormones in modern terms.

Manipura Chakra The solar plexus chakra located at the navel. Governs digestion, metabolism, personal power, and transformation. Functionally corresponds to the celiac plexus — the largest autonomic nerve plexus in the abdomen, which innervates all abdominal organs.

Svadhishthana Chakra The sacral chakra located at the pubic symphysis/sacrum. Governs the urogenital system, fluid balance, and creativity. Related to the lower GI tract and reproductive organs.

Mooladhara Chakra The root chakra at the perineum. Governs elimination, security, and the pelvic floor. Corresponds to the anorectal junction and the external anal sphincter (strengthened by Mula Bandha).

Uddiyana Bandha The abdominal lock — drawing the abdomen inward and upward after full exhalation. Directly massages the liver, stomach, and intestines; stimulates the solar plexus; exercises the diaphragm. One of the most powerful digestive techniques.

Mula Bandha The root lock — contraction of the perineal muscles. Tones the pelvic floor and external anal sphincter; strengthens the muscles governing defecation; stimulates Apana Vayu.

Nauli Abdominal rolling — the supreme kriya for digestive cleansing. Provides the most intensive mechanical massage of all abdominal organs achievable through yogic practice.

Dhauti The group of yogic cleansing techniques for the GI tract. Includes Vamana Dhauti (stomach cleansing), Vastra Dhauti (cloth swallowing), and Shankaprakshalan (complete intestinal wash).

Shankaprakshalan The complete internal bath — drinking warm saline water and performing specific yoga postures to propel it through the entire GI tract from mouth to anus, emerging clear. A profound annual cleansing practice.

Ahara Food; diet. Yogic texts emphasise that diet is the foundation of health. The three qualities of food (Sattvic — pure and light; Rajasic — stimulating; Tamasic — heavy and dull) directly influence the mind through their effect on digestion.

Mitahara Moderate diet; the yogic principle of eating to three-quarters capacity, leaving one-quarter of the stomach for water and one-quarter empty for movement of Vata. Critical for maintaining optimal Agni.

Annamaya Kosha The food body — the physical body. The most gross of the five sheaths (Pancha Koshas). Its health depends entirely on proper digestion and assimilation.

Pranamaya Kosha The pranic body — the vital energy sheath. It is nourished by the quality of food and breath. A healthy digestive system directly sustains the Pranamaya Kosha through optimal nutrient assimilation and pranic extraction from food.

Jatharagni The primary gastric fire; the central agni on which all other agnis in the body depend. Its balanced function (sama agni) is the foundation of perfect health in Ayurveda.

Sama Agni Balanced digestive fire — the ideal state in which digestion is efficient, timely, and complete, leaving no ama residue.

Manda Agni Low/sluggish digestive fire — leads to slow digestion, weight gain, mucus accumulation, and ama formation. Addressed by stimulating pranayamas and dynamic asanas.

Tikshna Agni Excessive/sharp digestive fire — leads to hyperacidity, inflammation, ulcers, and burning sensations. Addressed by cooling practices (Sheetali, Chandrabhedana, Yoga Nidra).

Vishama Agni Irregular/erratic digestive fire — leads to inconsistent digestion, bloating, constipation alternating with diarrhoea (IBS pattern). Addressed by Nadi Shodhana and lifestyle regularity.

CHAPTER SEVEN

Yogic Diet & Lifestyle for Digestive Health

The yogic tradition understands that asana and pranayama constitute only part of the path to digestive health. Ahara (diet), Vihara (lifestyle), and Achara (daily habits) are equally foundational. The classic texts — particularly the Hatha Yoga Pradipika, Gheranda Samhita, and the Ayurvedic Charaka Samhita — provide comprehensive guidance on diet and lifestyle for practitioners.

7.1 The Three Gunas of Food

Yogic philosophy classifies all foods according to the three gunas (qualities) of Prakriti. Diet directly influences not only digestion but also the quality of the mind, energy levels, and the capacity for meditation.

Guna	Quality	Foods & Effects
Sattvic	Pure, light, nourishing	Fresh fruits, vegetables, whole grains, nuts, seeds, dairy, honey, herbal teas. Promotes clarity, peace, vitality, and ease of digestion. Ideal for yoga practitioners.
Rajasic	Stimulating, agitating	Spicy, salty, sour, hot, heavily flavoured foods; caffeine, alcohol (in excess), onion, garlic, meat. Stimulates both digestion and the nervous system — can overwhelm Agni. Suitable in moderation for active people.
Tamasic	Heavy, dull, inert	Processed foods, stale food, meat, alcohol (excess), fermented foods (in excess), leftovers more than 3 hours old. Suppresses Agni; promotes lethargy, heaviness, and mental dullness.

7.2 Mitahara — The Principle of Moderate Eating

Mitahara (moderate diet) is consistently described in the yoga texts as the most important dietary principle. The Hatha Yoga Pradipika (Chapter 1, Verse 58) states: 'Half the stomach should be filled with food, a quarter with water, and the remaining quarter should be left empty for the practice of pranayama.'

THE YOGIC GUIDELINES FOR EATING

- Eat to 3/4 capacity — never to complete fullness (overfilling suppresses gastric motility).

▶Eat when genuinely hungry — do not eat on schedule if hunger is absent (respects Agni's natural rhythm).

▶Eat at regular times — the gastrocolic reflex and digestive hormones operate on circadian rhythms.

▶Eat slowly and mindfully — thorough mastication begins digestion and sends satiety signals to the brain.

▶Maintain silence or pleasant conversation during meals — avoid stimulating media that activates the sympathetic system.

▶Sit in Vajrasana for 5–15 minutes after meals — the single most validated post-meal digestive practice.

▶Avoid cold water during or immediately after meals — it dilutes digestive juices and reduces Agni.

▶Eat largest meal at midday when Agni (and solar energy) is at its peak.

7.3 Foods that Support Digestive Health

Food Category	Digestive Benefit & Yogic Rationale
Ghee (clarified butter)	Stimulates Agni at moderate quantities; lubricates the intestinal tract; highly Sattvic; contains butyric acid that nourishes the colon lining
Ginger (Shunti/Adrak)	The most important digestive herb in Ayurveda; stimulates Agni; reduces nausea; carminative (relieves gas); anti-inflammatory for the gut lining
Cumin (Jeera)	Digestive stimulant; carminative; reduces flatulence; stimulates bile secretion; improves nutrient absorption
Triphala	The classical Ayurvedic bowel regulator (Amalaki, Bibhitaki, Haritaki); gently stimulates bowel motility without habituation; nourishes the gut lining
Fennel (Saunf)	The premier post-meal digestive — chewing fennel seeds after meals stimulates digestion and relieves bloating; antispasmodic for the colon
Warm Water (Ushnodaka)	The simplest digestive tonic — warm water stimulates Agni, promotes bowel motility, and flushes the GI tract gently
Buttermilk (Takra)	Described in Ayurveda as the best digestive beverage; contains probiotics that support the microbiome; reduces post-meal heaviness
Khichdi (Rice & Moong Dal)	The most digestible complete meal in Ayurvedic medicine; light on Agni while providing complete protein; ideal during illness or digestive weakness

7.4 Foods that Disturb Digestive Health

Food / Habit	How it Disturbs Digestion
Cold & refrigerated food/drink	Suppresses Agni; slows gastric motility; increases mucus production in the GI tract
Overeating	Overwhelms Agni; creates ama; leads to fermentation and gas formation; stretches the stomach impairing LES function (GERD)
Late-night eating	Agni is lowest at night (circadian rhythm); night eating leads to incomplete digestion, ama accumulation, and weight gain
Incompatible food combinations	Ayurveda identifies specific combinations that confuse digestive secretions: fruit + dairy, fish + dairy, equal quantities of ghee + honey
Emotional eating / eating under stress	Sympathetic activation suppresses digestive secretions — food eaten under stress is incompletely digested
Excessive raw food	Raw food is harder to digest than cooked; excess raw food reduces Agni over time (particularly in Vata and Kapha constitutions)

7.5 Daily Routine (Dinacharya) for Digestive Health

The yogic concept of Dinacharya (daily routine) is a comprehensive framework for aligning lifestyle with the natural rhythms of the body and the cosmos. The following practices specifically support optimal digestive function.

- **Brahma Muhurta (4:00–6:00 AM) —** Wake before sunrise. Agni is beginning to build. The Vata period — ideal for cleansing, elimination, and yoga practice.
- **Ushnodaka (warm water) —** Drink 1–2 glasses of warm water upon waking. Stimulates Agni, promotes morning bowel movement, and begins hydration.
- **Oil Pulling (Gandusha) —** Swishing oil in the mouth stimulates the salivary glands and triggers digestive readiness via the cephalic phase of digestion.
- **Yoga & Pranayama —** Practice before breakfast. Dynamic asanas and Kapalabhati stimulate morning Agni and promote elimination. Nadi Shodhana balances the ANS for the day.
- **Breakfast (light, warm) —** Appropriate at 7:00–9:00 AM. Light and warm — easy to digest as Agni builds.
- **Main Meal (Midday) —** 12:00–2:00 PM. Agni is at its peak (aligned with the solar cycle). The largest, most diverse meal of the day.
- **Vajrasana after meals —** 5–15 minutes in Vajrasana after each meal — improves gastric motility and reduces GERD risk.
- **Light dinner before 7:00 PM —** Agni declines in the evening. Dinner should be lighter than lunch and completed well before sleep.
- **No eating after sunset ideally —** Particularly important for those with digestive disorders, obesity, or diabetes.
- **Sleep by 10:00 PM —** Pitta time (10:00 PM–2:00 AM) is when the liver and small intestine complete processing. Sleep must be established before this period.

7.6 Fasting (Upavasa) in Yogic Practice

Fasting (Upavasa, literally 'dwelling near the Divine') is a cornerstone practice in the yogic and Ayurvedic traditions, understood as the single most powerful means of resting, resetting, and rekindling Agni. Modern science validates the profound effects of fasting on the digestive system and overall health.

Fasting Method	Yogic Application & Scientific Basis
Ekadashi Fasting (11th day of lunar fortnight)	The traditional yogic fast observed twice monthly. Modern research shows the gut microbiome undergoes beneficial restructuring during periodic fasting.
Intermittent Fasting (16:8)	Eating within an 8-hour window aligned with Agni's peak (10 AM–6 PM). Reduces liver fat, improves insulin sensitivity, and allows gut repair during the fasting window.
Fruit/Juice Fasting	Resting the digestive system while maintaining nutrition. Gentle enough for most practitioners. Ideal for one day per week for digestive reset.
Water/Warm Water Fasting	Most intense cleansing. Recommended only under guidance. Powerfully rests Agni and allows mucosal healing.
Mono-diet (Khichdi) Days	Not a complete fast but a digestive rest — eating only easily digestible khichdi for 1–3 days. Particularly useful during illness or after dietary excess.

Om Shanti Shanti Shanti

May all beings be healthy. May all beings be free from suffering. May all beings be happy.

SKM Yoga | www.skmyoga.in | WA: 8826476724 | Call: 8920921620