

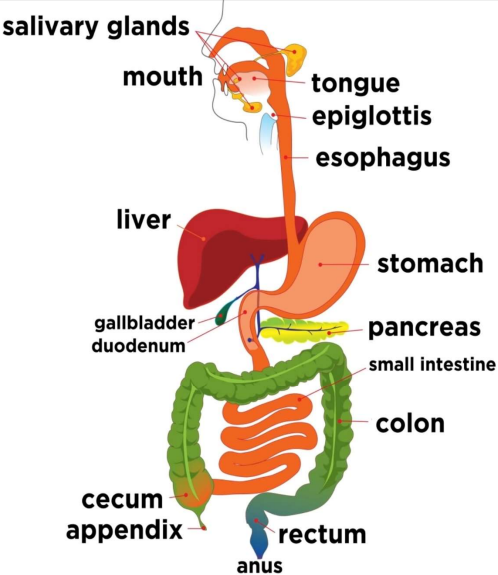
GASTROINTESTINAL PROCESSES

Communication Superhighway

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EVERYBODY KNOWS...

<ol style="list-style-type: none"> 1) ingestion 2) propulsion 3) mechanical breakdown 4) digestion 5) absorption 6) defecation 	
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EVERYBODY KNOWS...

- ▶ GI tract is professional but emotional subject to me as well.
- ▶ All other sessions will depend on mastering GI
- ▶ Most of the neurotransmitters secreted by the ENS are identical to those found in the central nervous system (eg, acetylcholine, dopamine, and serotonin). Like the central nervous system, the ENS neurons secrete acetylcholine and neuropeptides, but not noradrenaline.
- ▶ GI ENS Regulates immunity, gut secretions, complex interactions brain – gut
- ▶ Not breastfeeding trend in 50's-80's generational damage
- ▶ Frequent Driving Association FDA video
- ▶ Many people are ruined by simple habits

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WIRELESS... in the past



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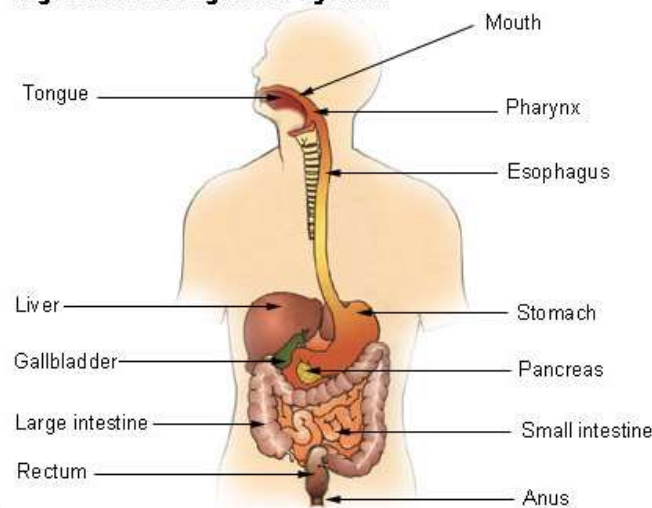
Smoke Signaling history

- ▶ Ancient China - soldiers stationed along the Great Wall - signaling from tower to tower. As far as 470 miles long distances in just a few hours.
- ▶ Misuse of the smoke signal is known to have contributed to the fall of the [Western Zhou Dynasty](#) in the 8th century [BCE](#). [King You of Zhou](#) had a habit of fooling his warlords with false warning beacons in order to amuse [Bao Si](#), his concubine.
- ▶ [Polybius](#), a Greek [historian](#), devised a more complex system of ALPHABETICAL smoke signals around [150 BCE](#), which converted Greek alphabetic characters into numeric characters. It enabled messages to be easily signaled by holding sets of [torches](#) in pairs. This idea, known as the "[Polybius square](#)", also lends itself to [cryptography](#) and [steganography](#). This cryptographic concept has been used with Japanese [Hiragana](#) and the Germans in the later years of the [First World War](#).
- ▶ [North American indigenous peoples](#) also communicated via smoke signal. Each [tribe](#) had its own signaling system and understanding.

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It's all connected

Organs of the Digestive System



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CHAIN REACTION WITH MANY RESULTANT PRODUCTS

- ▶ Are you producing high quality END PRODUCTS?
- ▶ ENERGY
- ▶ HORMONES
- ▶ IMMUNE SYSTEM COMPONENTS
- ▶ NEUROTRANSMITTERS

- ▶ How high quality is your **POOP**?

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Swedish blue steel

- ▶ **Sweden** is famous for having particularly high quality iron ore deposits as well as a long tradition of iron (followed by **steel**) production going back to the 13th century. Very low contaminants and fine grains.

- ▶ Still unsurpassed in the world for quality

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Scandalli Super VI – 1957



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LEXUS FAMOUS ENGINE

- ▶ It takes 10,000 hours to become an expert
60,000 hours - a Takumi master craftsman
- ▶ After 60,000 hours of practice and training Lexus Takumi Master Craftsmen develop almost superhuman senses. Sight that can see marks invisible to the untrained eye, hearing that can tune an engine with surgical precision and a sense of touch that can detect imperfections a fraction of a millimeter.

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Takumi Master



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GI TRACT – MANUFACTURING FACILITY

- ▶ Did we outsource our soul to other countries by giving up on manufacturing here?
- ▶ Did we sabotage the essence of our health by not paying attention to our MAIN FACTORY – GI TRACT?

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LAWS OF CONTRASTS

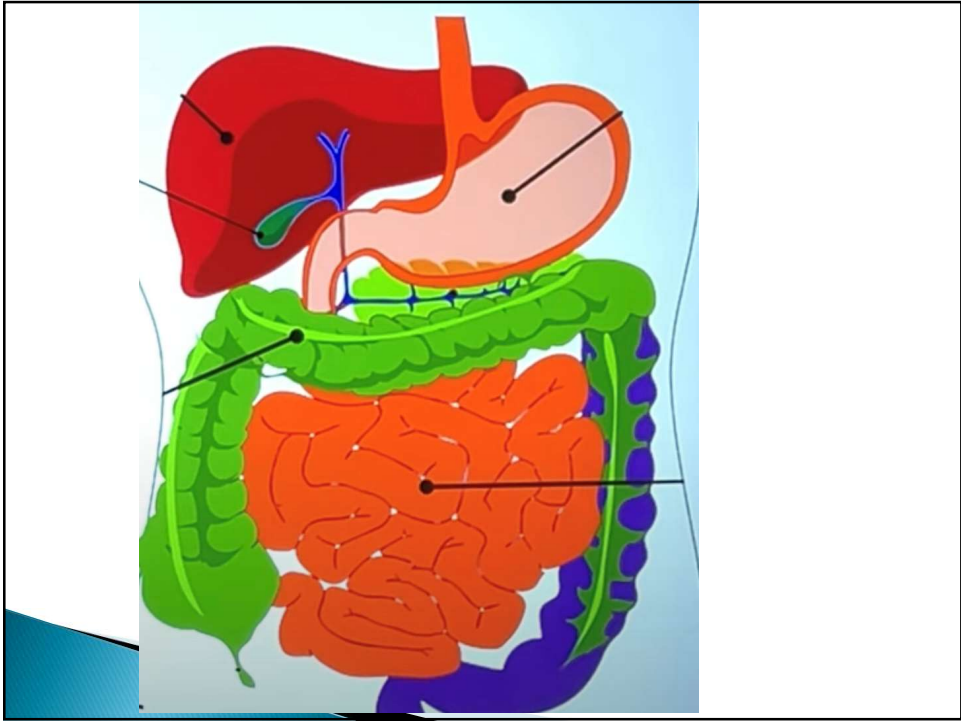
- ▶ Circadian Rhythm, dark and light
- ▶ Daily rhythm, work vs rest/play
- ▶ Biological functions, ebbs and flows
- ▶ Acid vs alkaline

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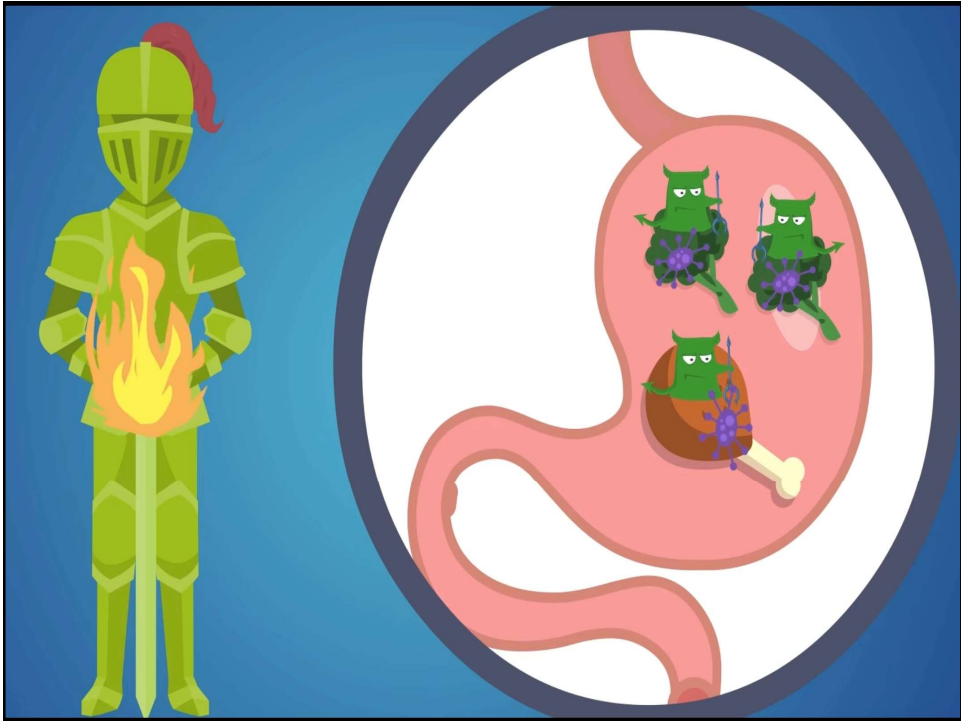
Heidelberg Capsule



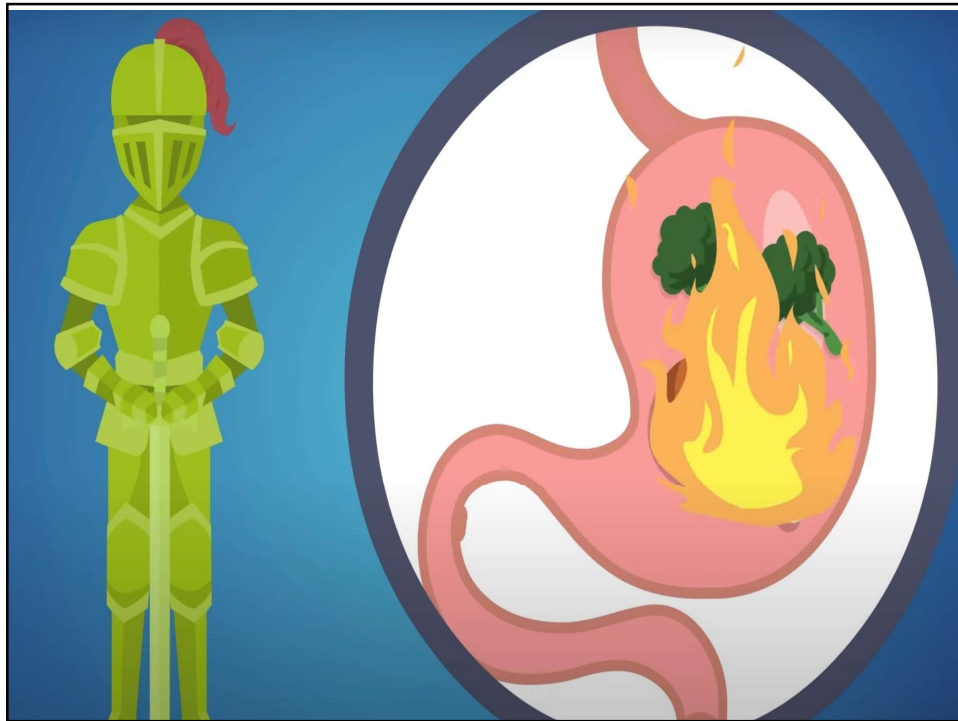
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HIGHLIGHTS

- ▶ **FINAL OUTCOME – SUPERB HEALTH**
- ▶ Interactions
- ▶ Saliva – hidden secret of good digestion
- ▶ Drinking/Eating habits that can drastically change your health
- ▶ Genetics vs secret world of “small molecules”
- ▶ Microbiome – Alien world in your body
- ▶ Products and protocols

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CHAIN REACTION SIGNALING

- ▶ VISUAL
- ▶ SMELL
- ▶ TASTE - SALIVA
- ▶ STOMACH
- ▶ PANCREAS
- ▶ GALLBLADDER/LIVER
- ▶ SMALL INTESTINES
- ▶ LARGE INESTINES
- ▶ **MICROBIOME**

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SALIVA

- ▶ Produced in salivary glands, 98% water
- ▶ Essential substances, including **electrolytes, mucus, antibacterial compounds and various enzymes.**
- ▶ Moistens food, creates a food bolus, so it can be swallowed easily.
- ▶ Enzyme amylase - breaks starches down into maltose and dextrin.
- ▶ Digestion of food occurs within the mouth, before food reaches the stomach.

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SALIVA

- ▶ Head and neck radiotherapy has serious and detrimental side effects on the oral cavity including the loss of salivary gland function and a persistent complaint of a dry mouth (xerostomia). Saliva has a myriad of beneficial functions that are essential to our well-being.
- ▶ Used in **DIAGNOSTICS** for more than 2000 years. Ancient doctors of traditional Chinese medicine have concluded that saliva and blood are “brothers.”
- ▶ Changes in saliva are indicative of the wellness of the patient.

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Biology of saliva

- ▶ Unique digestive powers, mainly in the form of amylolysis and proteolysis.
- ▶ Produced and secreted from salivary glands. The basic secretory units of salivary glands are clusters of cells called **acini** - secrete a fluid that contains water, electrolytes, mucus, and enzymes, all of which flow out of the acinus into collecting ducts.
- ▶ Within the ducts, the composition of the secretion is altered. Sodium is actively reabsorbed, potassium is secreted, large quantities of bicarbonate ion are secreted. Small collecting ducts within salivary glands lead into larger ducts, eventually forming a single large duct that empties into the oral cavity.

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Saliva roles

- ❑ **Lubrication and binding:** The mucus in saliva is extremely effective in binding masticated food into a slippery bolus that (usually) slides easily through the esophagus without inflicting damage to the mucosa.
- ❑ **Solubilization** of dry food: In order to be tasted, the molecules in food must be solubilized.
- ❑ **Oral hygiene:** The oral cavity is almost constantly flushed with saliva, which floats away food debris and keeps the mouth relatively clean. The flow of saliva diminishes considerably during sleep, allow populations of bacteria to build up in the mouth – the result is dragon breath in the morning. Saliva also contains **lysozyme**, an enzyme that lyses many bacteria and prevents the overgrowth of oral microbial populations.
- ❑ Initiation of **starch digestion:** In most species, the serous and acinar cells secrete an alpha amylase which can begin to digest dietary starch into maltose.

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J Nat Sci Biol Med. 2011 Jan-Jun; 2(1): 53–58

- ▶ “Just a few of the many health issues and diseases that can be diagnosed through saliva and helped, resolved, or prevented through supplementation include but not limited to the following: **acne, cholesterol, male pattern baldness, cancer, stress, heart problems, heart palpitations, allergies, cold body temperature, sleep problems, inability to absorb calcium, and difficulties in conceiving.**”

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Proteomics

- ▶ Researchers have identified the **largest number of proteins to date in human saliva**, a preliminary finding that could pave the way for more diagnostic tests based on saliva samples. Such tests show promise as a faster, cheaper, and potentially safer diagnostic method than blood sampling

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Genomics

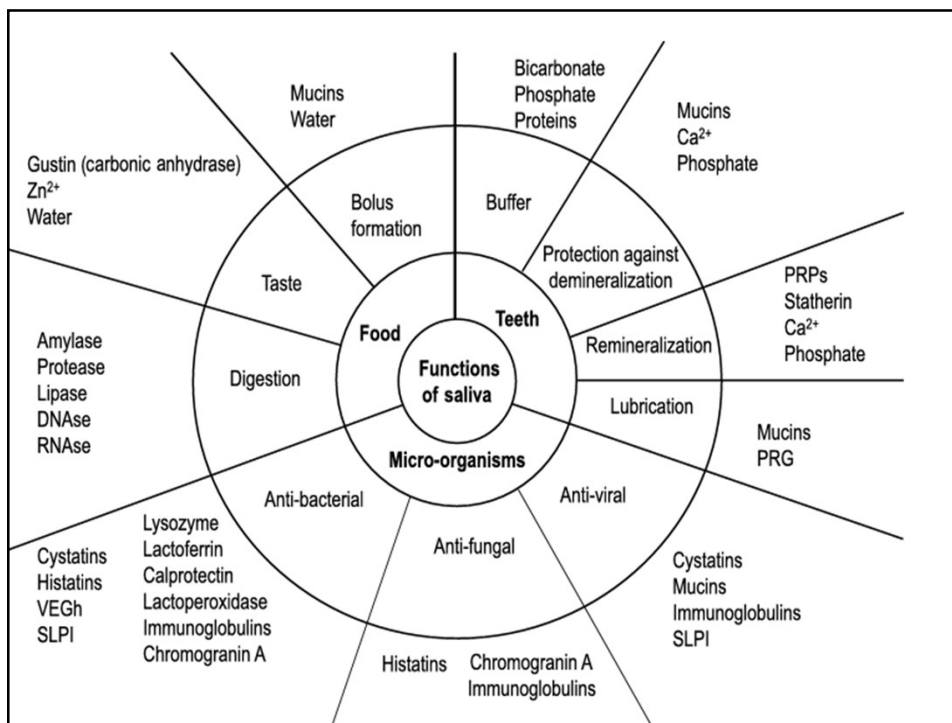
- ▶ Saliva acts as a wide resource for genomic information useful for studying the potential disease status by analyzing their RNA level
- ▶ Saliva is not merely an ultrafiltrate of plasma; it contains the **entire library of proteins, hormones, antibodies**, and other molecular compounds which are typically measured in routine blood tests. Thus, saliva functions as a diagnostic window to the body, both in health and in disease.

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HIDDEN LIBRARY OF INFORMATION

- ▶ Each of us may have inside our mouths a key to the pathological and disease biomarker library hidden inside our bodies. Saliva – the source of all this information – is the secretory product of glands located in or around the oral cavity. If we could read the stories of diagnostic information present within saliva, then the abundance of information waiting to be found could be comparable to a vast vault of information such as the **internet**. The relationship between salivation and behaviors within our daily lives is undeniable. Yet most people never appreciate the uniqueness of saliva.

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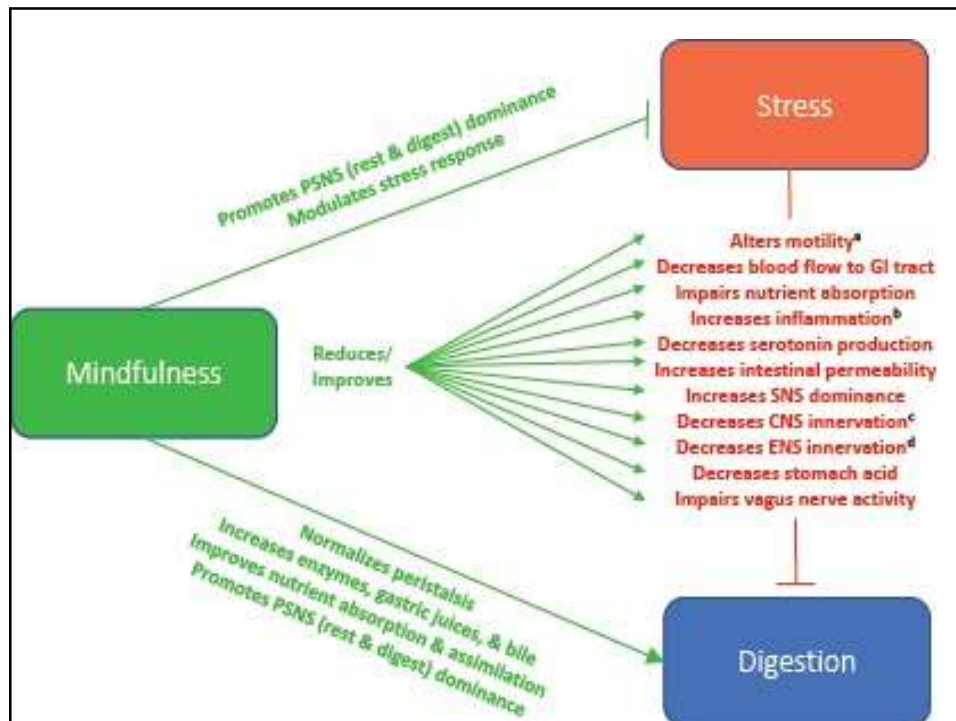


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PEACEFUL AND MINDFUL

- ▶ Mindful Eating: A Review Of How The Stress-Digestion-Mindfulness Triad May Modulate And Improve Gastrointestinal And Digestive Function
- ▶ IMCJ
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7219460/>

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WATER HABIT

- ▶ DO NOT DRINK WATER DURING MEALS AND AT LEAST 2+ HOURS AFTER MEALS.

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WATER AND SALIVA

- ▶ If we had only WATER instead of SALIVA?
- ▶ We would choke much more often on food, because the cohesive bolus would not form.
- ▶ Food would have a neutral taste.
- ▶ We would taste only pre-digested food that already contains individual amino acids and sugars.
- ▶ The calcium and phosphate ions leached from hydroxyapatite through the action of water and unbuffered acids would not be replaced. The dental enamel would be demineralized and become porous.
- ▶ Bacteria could spread undisturbed and would cause caries through increased production of acids.

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BITTERS – Rescue

- ▶ Ayurvedic medicine – SIX TASTES : sweet, sour, salty, pungent, bitter, and astringent
- ▶ Traditional European and Chinese medicine (TCM) believe that bitter foods and herbs can strengthen digestion
- ▶ STOMACH, PANCREAS, LIVER, GALLBLADDER... thrive on bitters.
- ▶ Bitter-Tasting Amino Acids L-Arginine and L-Isoleucine Differentially Regulate Proton Secretion via T2R1 Signaling in Human Parietal Cells in Culture
- ▶ <https://pubs.acs.org/doi/full/10.1021/acs.jafc.9b06285>

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BITTER HERBS

Christopher Hobbs, Foundations of Health

- ▶ **angelica** root (*A. archangelica*),
- ▶ **artichoke** leaf (*Cynara scolymus*),
- ▶ **bitter orange peel** (*Citrus aurantium*),
- ▶ **artichoke blessed thistle** (*Cnicus benedictus*),
- ▶ **gentian** root (*Gentiana lutea*),
- ▶ **goldenseal** rhizome (*Hydrastis canadensis*),
- ▶ **wormwood** leaves (*Artemisia absinthium*), and
- ▶ **YARROW** flowers (*Achillea millefolium*).

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BITTERS + CARMINATIVES

- ▶ Bitters are often combined with carminative (gas-relieving) herbs
- ▶ ginger root (*Zingiber officinale*),
- ▶ fennel seed (*Foeniculum vulgare*),
- ▶ cardamom seed (*Elettaria cardamomum*)
- ▶ “Bitter greens such as the leaves of dandelion, arugula, chicory, and parsley or an unripe bitter plum are also beneficial before meals to enhance digestion,” says Hobbs.
- ▶ Stimulate the bitter receptors in taste buds at the back of the tongue, so tasting the bitterness improves herbs’ effectiveness.

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BITTERS

- ▶ “Bitters stimulate gastric secretions, enzyme production, and help clear symptoms such as bloating, gas, and dyspepsia, and they improve elimination,” adds Hobbs, who is particularly fond of gentian root and artichoke leaf. “Pure gentian is very bitter but adds a refreshing taste when used in a formula,” he explains. Gentian root is typically used in teas, tinctures, fluid extracts, and dry extracts.
- ▶ Approved by the **German Commission E** for fullness/bloating, flatulence, nausea, and loss of appetite—symptoms that can often be traced to insufficient stomach acid—gentian’s bitter substances stimulate stomach acid and saliva production and may also stimulate bile flow. However, individuals with stomach or duodenal ulcers should avoid this herb.

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Digestion...the basics

- ❑ Chew your food
- ❑ Eating Mindfulness..
- ❑ Digestion/Detox is parasympathetic dominant
- ❑ Drink enough water throughout the day but not so much during a meal

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