The Digestive System - Part 1
Kristine Brown - Traditional Community Herbalist

What Does the Digestive System Consist of?
- Mouth
- Pharynx
- Esophagus
- Stomach
- Small and large intestines
- Rectum
- Anus
- Accessory organs:
  - Salivary glands
  - Teeth
  - Liver
  - Gallbladder
  - Pancreas

What is the Function of the Digestive System?
There are 4 activities in the digestive system: ingestion, digestion, absorption and elimination.

The mouth, aided by salivary glands and teeth, break down the food and prepare it for digestion. The salivary glands (there are 3 pairs of them) produce saliva, which encourages parasympathetic action in your nervous system, is the key to stimulating digestive activity.

The pharynx and esophagus move the broken down foods through peristalsis to the stomach at a rate of about 1 second per inch. The esophagus can handle a bit of rough treatment and is lined with compound epithelium and a thick layer of mucus.

The stomach is a reservoir and holding tank. Gastric juices, containing hydrochloric acid, pepsinogen, mucus, water, intrinsic factor and gastric lipase (gastrin), begin to perform protein digestion, churning the food into chyme before the stomach moves the food on to the small intestine. The stomach moves carbohydrate meals sooner than protein and fat meals, at a rate of 1 - 6 hours, which is controlled by nerves and hormones.

The small intestine consists of 3 parts: duodenum, jejunum, and ileum and is about 20 feet in length and 1 inch thick. The muscularis (muscle layer) moves in segmentation and peristalsis, completing digestion. Most of the absorption of nutrients occurs in the small intestine as well. In the jejunum and ileum, pancreatic juice and bile enter to help digest starch, protein and fat. Bile is useful for emulsifying fats. Nutrients are absorbed into the blood capillaries and the lymph duct.
The large intestine, also known as the colon, is the next stop for the chyme. It begins at the lower right abdomen with the caecum (cecum), then goes up and around the belly, in sections known as the ascending, transverse, descending and sigmoid colons. Water and any leftover nutrients are absorbed from the digestive waste, making it more solid. This solid waste becomes feces. Fiber is required in the colon for it to work properly. Fiber is fermented by bacteria to produce gases and short-chain fatty acids. Most bowels produce about 1/2 liter of gas a day. This is also where we should have plenty of good bacteria.

The rectum serves as the holding cell for feces, triggering the defecation reflex. If circumstances allow, the feces will be released through the anus. Regular suppression of the reflex can lead to constipation.

**Common Acute and Chronic Problems for Digestive System:**

- Stomachache
- Malabsorption
- Diverticulitis
- Diverticulosis
- Candida
- Food poisoning
- Headache
- Cancer
- Acid reflux
- Hemorrhoids
- Peptic ulcers
- Tooth decay
- Halitosis
- Leaky gut syndrome
- Celiac disease
- Crohn’s disease
- Irritable bowel syndrome
- Spastic colon
- Nausea
- Constipation
- Diarrhea
- Indigestion
- Swollen/clogged salivary glands
- Loss of appetite
- Mouth ulcers

**Herbal Applications for the Digestive System:**

- Extracts
- Infusions
- Teas
- Pastes

**What is the Function of the Liver?**

One of the main functions of the liver is to secrete bile. The liver also creates bile pigments, made from breaking down the hemoglobin from old red blood cells, giving urine and feces their color. If there is a problem in the liver blocking bile from entering the gut, the bile pigments will build up in the blood, causing jaundice to occur.

The liver is also responsible for making plasma proteins which provide the osmotic pressure of the blood, assists in clotting and helps build a good immune system. The liver assists in making urea, detoxifies hormones, drugs and alcohol, processes digestive products, stores iron and vitamins A, D, E and K, stores glucose, and makes heat which is transported throughout the body through the blood.
**Common Acute and Chronic Problems for the Liver:**
- Hepatitis
- Jaundice
- Cirrhosis
- Liver failure
- Hemochromatosis

**Herbal Applications for the Liver:**
- Extracts
- Food
- Infusions
- Teas
- Compresses
- Bitters

**Herbs for the Digestive System and Liver (those marked with * indicate Liver specific):**

<table>
<thead>
<tr>
<th>Anti-inflammatory Herbs</th>
<th>Carminative Herbs</th>
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<tbody>
<tr>
<td>Bergamot (Monarda spp.)</td>
<td>Angelica (Angelica archangelica)</td>
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<tr>
<td>Burdock (Arctium lappa)*</td>
<td>Aniseed (Pimpinella anisum)</td>
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<tr>
<td>Dandelion (Taraxacum officinale)*</td>
<td>Caraway (Carum carvi)</td>
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<tr>
<td>Plantain (Plantago spp.)</td>
<td>Chamomile (Chamomila matricaria)</td>
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<tr>
<td>Reishi (Ganoderma lucidum)*</td>
<td>Dill (Anethum graveolens)</td>
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<tr>
<td>Turmeric (Curcuma longa)*</td>
<td>Fennel (Foeniculum vulgare)</td>
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<td>Wild Yam (Dioscorea villosa)</td>
<td>Ginger (Zingiber officinale)</td>
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<td>Yarrow (Achillea millefolium)</td>
<td>Hop (Humulus lupulus)</td>
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<td>Lemon Balm (Melissa officinalis)</td>
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<td><strong>Antiseptic Herbs</strong></td>
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<td>Bergamot (Monarda spp.)</td>
<td>Peppermint (Mentha x piperita)</td>
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<tr>
<td>Blueberry (Vaccinium spp.)</td>
<td>Sage (Salvia officinalis)</td>
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<tr>
<td>Cranberry (Vaccinium spp.)</td>
<td>Thyme (Thymus vulgaris)</td>
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<td>Juniper (Juniperus spp.)</td>
<td>Valerian (Valerian officinalis)</td>
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<td><strong>Antispasmodic Herbs</strong></td>
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<td>Chamomile (Chamomila matricaria)</td>
<td>Burdock (Arctium lappa)</td>
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<td>Crampbark (Viburnum opulus)</td>
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<td><strong>Cholagogue Herbs</strong></td>
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<td><strong>Hepatoprotective Herbs</strong></td>
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*herbalist@lunaherbco.com*
Herbs for the Digestive System and Liver Continued (those marked with * indicate Liver specific):

Astringent Herbs
- Calendula (Calendula officinalis)
- Plantain (Plantago spp.)
- Yarrow (Achillea millefolium)

Hepatoregenerator Herbs
- Milk Thistle (Silybum marianum)*
- Reishi (Ganoderma lucidum)*

Hepatotonic Herbs
- Dandelion (Taraxacum officinale)*
- Milk Thistle (Silybum marianum)*

Bitters Herbs
- Burdock (Arctium lappa)
- Chamomile (Chamomila matricaria)
- Dandelion (Taraxacum officinale)
- Gentian (Gentiana spp.)
- Hop (Humulus lupulus)
- Mugwort (Artemisia vulgaris)
- Wormwood (Artemisia absinthium)

Nervine Herbs
- Bergamot (Monarda spp.)
- Chamomile (Chamomila matricaria)
- Crampbark (Viburnum opulus)
- Hop (Humulus lupulus)
- Lemon Balm (Melissa officinalis)
- Mugwort (Artemisia vulgaris)
- Oatstraw (Avena sativa)
- Skullcap (Scutellaria baicalensis)*
- Valerian (Valerian officinalis)

Ways to Maintain Digestive System Health:
~ Drink plenty of water, especially if your stools are hard.
~ Enjoy prebiotics and probiotics in food form.
~ Test for food intolerances through an elimination diet. Add suspected foods back one at a time over a period of days and observe your reactions.
~ Include lots of fiber in your diet
~ Squat to have a bowel movement

Recommended Herbal Books (*indicates available through library loan system):

General Body System Information
~ The Gift of Healing Herbs : Plant Medicines and Home Remedies for a Vibrantly Healthy Life by Robin Rose Bennett*
~ Herbal Medicine From the Heart of the Earth by Sharon Tilgner, N.D.
~ The Authentic Herbal Healer by Holly Bellebuono
~ Holistic Anatomy by Pip Waller

Digestive System
~ Healthy Digestion by David Hoffmann*

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Liver
~ Herbs for Hepatitis C and then Liver by Stephen Harrod Buhner*

Dental
~ Dental Herbalism: Natural Therapies for the Mouth by Leslie Alexander & Linda Straub-Bruce*
~ Cure Tooth Decay by Ramiel Nagel*

Diet and Nutrition
Food as Medicine by Todd Caldecott
Food and Healing by AnneMarie Colbin*
The Fourfold Path to Healing by Thomas S. Cowan, MD*
Nourishing Traditions by Sally Fallon*
Staying Healthy with the Seasons by Elson M. Haas MD*
The 21 Day Sugar Detox by Dianne Sanfilippo*

Online Resources
Jim McDonald’s article on Bitters: http://www.herbcraft.org/bitters.pdf
Rosalee de la Foret: http://www.herbalremediesadvice.org/human-digestive-system.html
Rosalee on ulcers: http://www.herbalremediesadvice.org/peptic-ulcer.html
Rosalee on IBS: http://www.herbalremediesadvice.org/irritable-bowel-syndrome.html
David Hoffmann on the Liver: http://www.healthy.net/Health/Article/The_Liver/1319
David Hoffmann on Diverticulitis: http://www.healthy.net/scr/article.aspx?Id=1716
The benefits of squatting to poo: http://wellnessmama.com/7013/squatty-potty-review/
The squatty potty: http://squattypotty.com/5-problems-with-sitting-on-your-toilet/

Notes