



Lecture 83:

Nutritional Approach To Common Gastrointestinal Disorders

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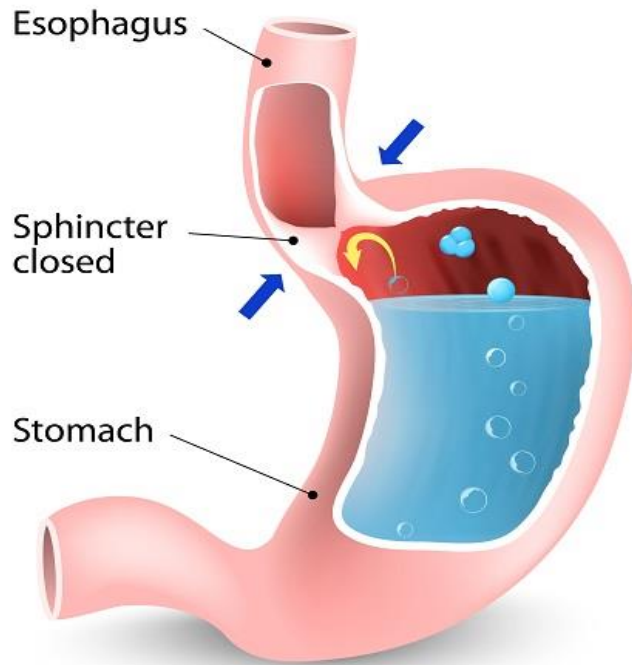
The Three Common Disorders:

- **Acid Reflux.**
- **Gluten Sensitivity.**
- **Irritable Bowel Syndrome (IBS).**

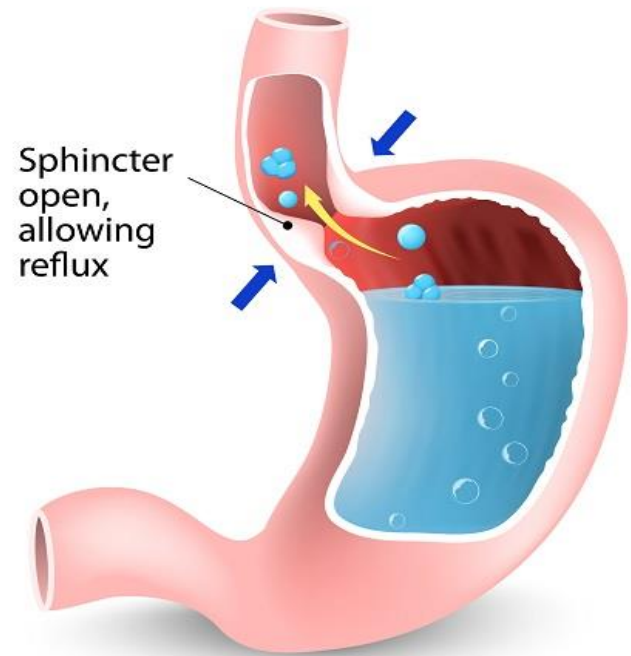
Acid Reflux (Gastrointestinal Reflux Disease; GERD):

- **Gastrointestinal reflux disease (GERD) is a disorder in which acidic contents of the stomach move back into the esophagus resulting in symptoms such as heartburn, regurgitation, chest pain, difficulty swallowing, nausea, increased saliva (water brash), bad breath, and belching.**

- The process of moving the stomach contents back into the esophagus is referred to as **reflux**.



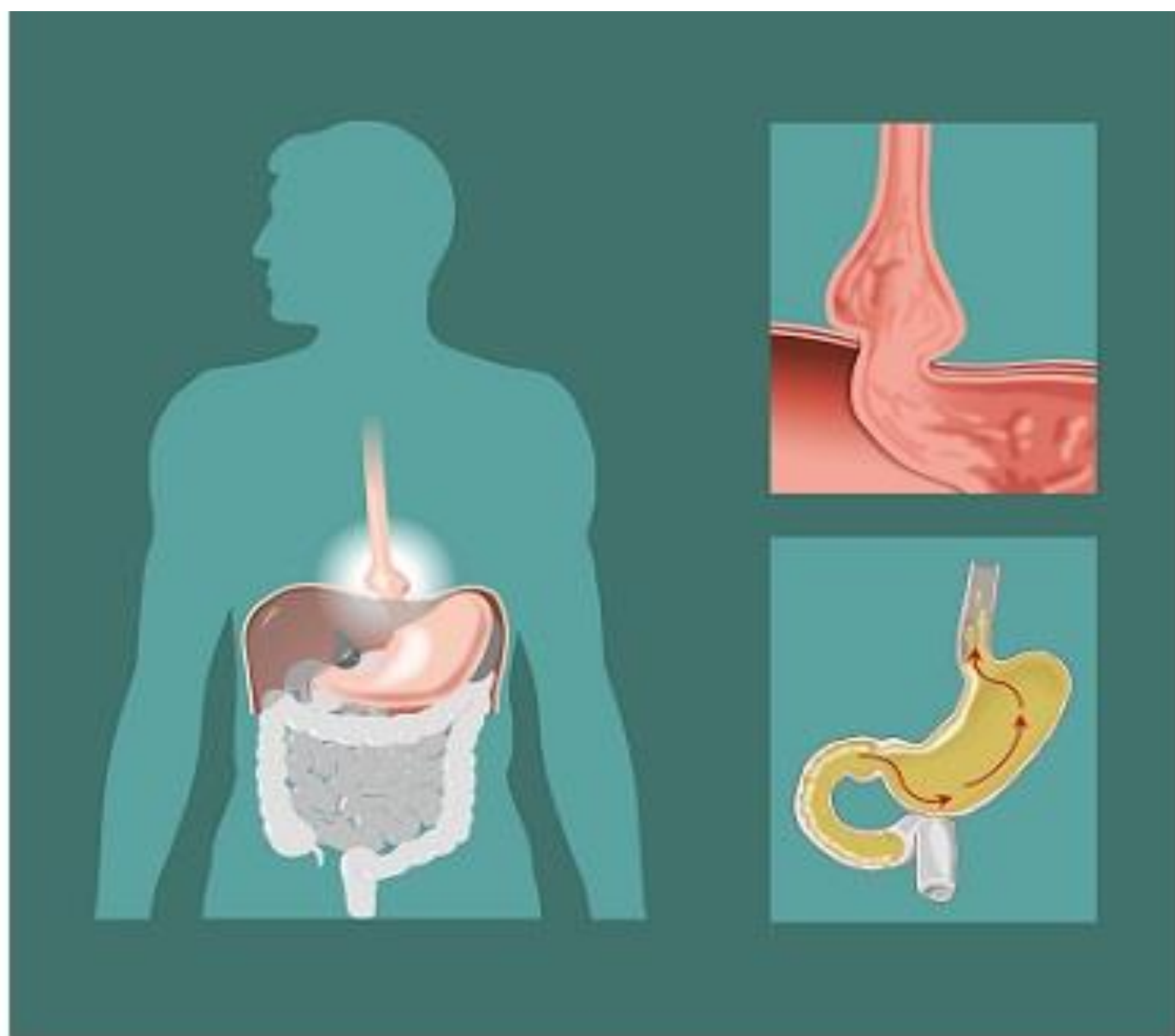
Healthy



GERD

- In general, the stomach contents should not move back into the esophagus. **Lower esophageal sphincter (LES)** is an anatomical ring at the junction of esophagus and stomach that prevents reflux.
- Any problems with the LES would lead to GERD. However, function of the LES is sometimes normal.
- Some symptoms are not related to gastrointestinal tract and they include chronic cough, laryngitis, asthma, and dental erosions.

- A common cause of GERD is hiatus hernia.
- *Hiatus hernia* is protrusion and herniation of the upper part of the stomach into the chest through the diaphragmatic hiatus.



Hiatal Hernia: Copyright©Depositphotos.com/ALESSANDRO INNAMORATI

Potential contributing factors for developing GERD:

- **Hiatus hernia.**
- **Increased intra-abdominal pressure.**
- **Obesity.**
- **Scleroderma.**
- **Pregnancy.**
- **Increased secretion of stomach acid.**
- **Delay in gastric emptying.**
- **Disorders in esophageal peristalsis.**

- **Zollinger – Ellison syndrome.**
- **Smoking.**
- **Alcohol.**
- **Gluttony.**
- **Nutritional factors:**
 - **fatty foods.**
 - **caffeinated drinks.**
 - **carbonated beverages.**

- **Drugs:** antihistamines, anti-cholinergics, tricyclic antidepressants, nitrates, calcium channel blockers, corticosteroids, birth control pills, narcotics, nicotine patches, asthma medications, tranquilizers such as Valium, Advil, aspirin, iron supplements, potassium supplements, and tetracycline antibiotics.

Restricted Foods:

- **Fatty foods: butter, margarine, sausage, bacon, cheese and sauces.**
- **Processed meats.**
- **Tomato and tomato-based foods such tomato paste, tomato juice, and pasta sauce.**
- **Fried foods: French fries.**
- **Potato chips.**
- **Cream cheese.**
- **Whipped cream.**
- **Omelets and scrambled eggs.**

- **Onion and onion rings.**
- **Chicken wings and skins.**
- **Garlic.**
- **Egg rolls.**
- **Doughnuts.**
- **Peppermint.**
- **Spearmint.**
- **Minty foods.**
- **Chocolate.**

- **Alcohol.**
- **Coffee and tea.**
- **Caffeinated and carbonated beverages.**
- **Spicy foods.**
- **Citrus fruits.**

Recommended Foods:

- **Plain water: at least 2 liters a day. Water can dilute stomach acid and reduce symptoms.**
- **Whole grains.**
- **Fresh fruits and vegetables except citrus fruits.**
- **Flaxseeds.**
- **Flaxseed oil.**
- **Low fat dairy products.**
- **Pineapple.**

- Papaya.
- Fruits and vegetables high in mucilage:
jujube, aloe vera, chia seeds, flaxseeds, kelp, marshmallow, okra, and psyllium. ***Mucilage** is a glycoprotein that has healing and anti-inflammatory activities in the gastrointestinal system by covering the mucous membranes and protecting them from getting irritated.*
- Chamomile tea.
- Ginger.

Recommended Supplements:

- **Licorice** in the form of **DGL** (de-glycyrrhizinated licorice): 200 – 300 mg tablet chewed before each meal and before bed. Licorice alleviates irritation and heals inflammation.
- **Aloe vera juice:** $\frac{1}{4}$ - $\frac{1}{2}$ cup three times a day. It has soothing and healing effects.
- **Digestive enzymes:** A full spectrum product.

- **Probiotics:** a product that provides 15 to 20 billion organisms per serving.
- **Bladderwrack:** as capsules 200 – 600 mg a day, as tincture 2 – 3 ml a day, or as a tea 1 teaspoon of dried form per one cup of hot water for three times a day.

It is a type of seaweed with active ingredients iodine, alginic acid and fucoidan that soothes heartburn and heals gastritis and esophagitis.

- **Slippery elm bark:** as a dried form 2 – 4 grams a day, or as a tincture 9 – 12 ml a day. Slippery elm contains mucilage that soothes heartburn and speeds up healing.
- **Gentian root extract:** as a capsule, 100 – 200 mg about 15 minutes before each meal, or as a tincture, 10 drops about 15 minutes before each meal. Gentian contains the glycosides gentiopicrin and amarogentin that help with digestion.

Miscellaneous Suggestions:

- **Avoid overeating.**
- **Avoid eating within 3 hours before bedtime.**
- **Do not lie down right after eating. Stay in upright position up to 45 – 60 minutes after eating.**
- **Elevate the head of your bed 5 – 10 inches when lying down.**
- **Weight loss in obese people.**
- **Stop smoking.**

Gluten Sensitivity & Celiac Disease:

- **Gluten is a protein found in wheat, barely, and rye. This protein has been made of two components: glutenin and gliadin.**
- **Gluten sensitivity is very common condition, up to 25%.**



Image: Copyright©Depositphotos.com/Martin Mark Soerensen

- **Gluten sensitivity** demonstrates itself as fatigue and symptoms of indigestion (bloating, gas, nausea, abdominal pain, constipation and diarrhea). No intestinal damage.

- **Celiac disease** is a disorder of gastrointestinal tract and characterized by poor absorption of one or more nutrients.
- Celiac disease is considered an “**iceberg disease**”; because only small number of people with celiac disease demonstrates signs and symptoms related to poor absorption.

CELIAC DISEASE



Skin

Brittle nails
Acne or eczema

Intestinal

Diarrhea
Bloating
Constipation

In female

Infertility
Miscarriage
Early menopause

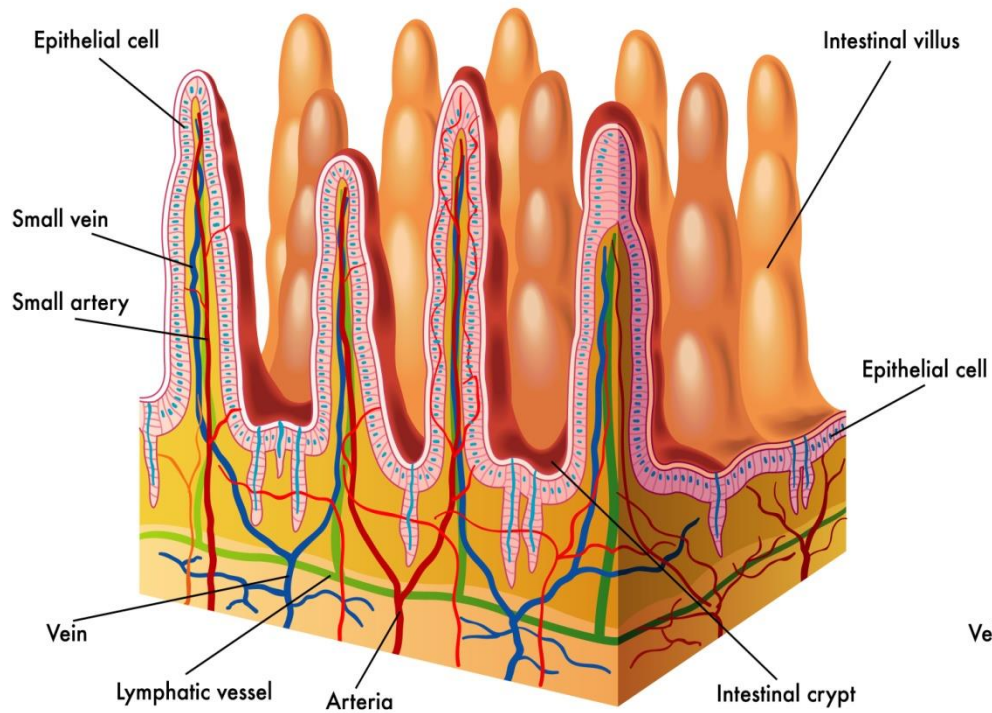
Mouth
Ulcer and
tooth enamel
erosion

**Joint and
muscle**
Pain and
swelling

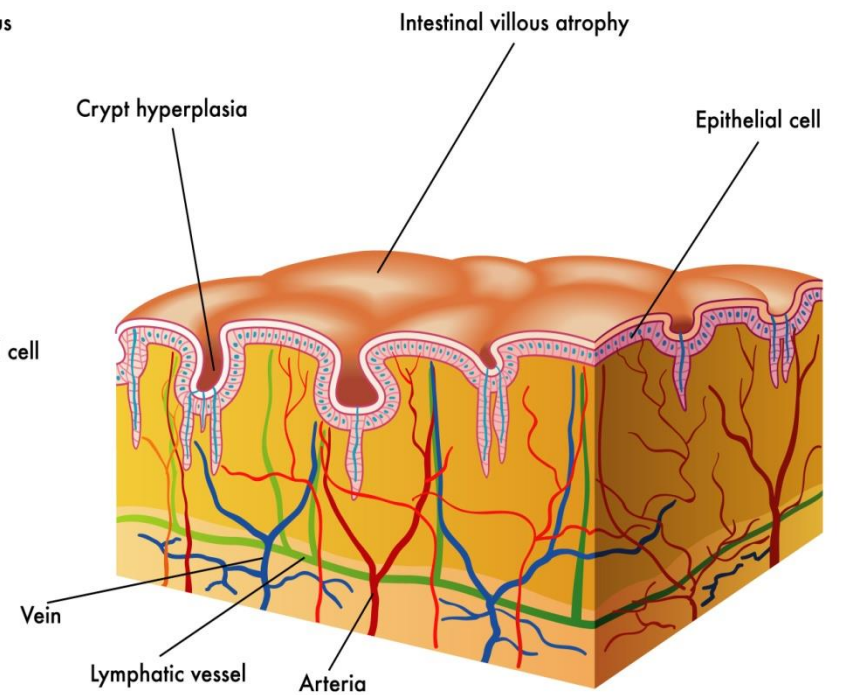
Stomach
Pain and
nausea

Lactose
intolerance
Anaemia
Dizziness
Migraines
Depression
Low vitamin D
Chronic fatigue

NORMAL



CELIAC DISEASE



- **Majority of affected people either have no symptoms or have symptoms not related to poor absorption such as anemia, infertility, decreased bone density, and neurologic symptoms.**
- **The exact cause of celiac disease is not known, though genetic, immunologic, and environmental factors are highly important**

- **There is a clear association between celiac disease and gliadin.**
- **In susceptible people, exposure to gliadin causes immunologic response, and the immune system produces antibody against gliadin. The antibody cross-reacts with small intestine tissues, leading to inflammation and blunting of the intestinal villi that are responsible for absorption.**

Signs and symptoms of celiac disease vary, and they are:

- **diarrhea**
- **weight loss**
- **bloating**
- **anemia**
- **hair loss**
- **bulky and foul-smelling stool with high amount of fat (steatorrhea)**
- **muscle wasting**
- **poor growth**

Celiac disease is associated with few medical conditions such as:

- **Dermatitis herpetiformis (DH)**
- **Down syndrome**
- **Turner`s syndrome**
- **IgA deficiency**
- **Diabetes mellitus type I**

People with celiac disease are at greater risk of developing gastrointestinal cancer and intestinal lymphoma.

Banned Foods:

- Gluten-containing foods: wheat, rye, barley, couscous, spelt, kamut, semolina, triticale, and oats.
- Foods with potentially hidden sources of gliadin: soy sauce, cereals, commercial soups, ice creams, beer, malt, and alcoholic beverages such as whiskey, vodka, and wines.
- Saturated fats.
- Sugars and sweets.

- **Processed foods.**
- **Carbonated beverages.**
- **Allergenic foods.**
- **Cheese.**
- **Cow`s milk.**
- **Alcohol.**



Recommended Foods:

- **Water:** at least 2 liters a day.
- **Gluten free foods:** amaranth, arrowroot, corn, buckwheat, rice, potatoes, millet, quinoa, and teff.



Gluten free carbohydrates are recommended in people with gluten sensitive enteropathy. Image: Copyright©Depositphotos.com/Iryna Melnyk

- **Soy.**
- **Legumes.**
- **Nuts.**
- **Lean protein: fish, chicken, turkey, and beef.**
- **Fresh fruits and vegetables.**



- Foods high in Omega-3: fish, flaxseeds, chia, hemsps, and walnuts.
- Foods high in flavonoids and polyphenols: berries.
- Pineapple.
- Ginger.
- Turmeric.
- Green tea.
- Chamomile tea.

Recommended Supplements:

- **Digestive enzyme:** A full spectrum product.
- **Probiotics:** a product that provides 10 to 20 billion organisms per serving.
- **Folic acid:** 1 mg a day.
- **Omega – 3 fatty acids:** 1 – 2 grams a day. It reduces inflammation.

- **French Maritime Pine Bark Extract:** 200 – 300 mg a day. It is a potent antioxidant that reduces inflammation and improves blood circulation.
- **Grape seed extract:** 50 – 100 mg a day.
- **Aloe vera juice:** $\frac{1}{4}$ - $\frac{1}{2}$ cup three times a day. Aloe Vera has a healing effect and provides many nutrients.
- **Calcium:** 1000 mg a day.

- **Vitamin D:** 2000 – 5000 IU a day.
- **Vitamin K2 (the subtype MK-7):** 50 – 100 mcg a day. This vitamin has a key role in utilizing calcium and strengthening the bones.
- **Magnesium:** 200 – 400 mg a day.
- **Multivitamins – Multiminerals:** A high potency product.

Irritable Bowel Syndrome (IBS):

- **Irritable bowel syndrome (IBS) is a functional bowel disorder of the GI system with unknown cause.**
- **It is usually characterized by recurrent abdominal pain or discomfort and changes in bowel habits.**
- **IBS affects women up to three times more than men.**

- The **symptoms of IBS** tend to come and go over time, and they include abdominal pain or discomfort, changes in bowel habits as alternating periods of constipation and diarrhea, bloating, belching, nausea, and heartburn.
- **To be labeled as IBS**, recurrent abdominal pain or discomfort should be present for at least 3 days in a month for at least 3 months. Abdominal pain or discomfort usually subsides with defecation.



Irritable bowel syndrome (IBS) is usually characterized by recurrent abdominal pain or discomfort and changes in bowel habits.

Image: Copyright©Depositphotos.com /Ihar Ulashchyk

Potential causative and contributing factors:

- **Disordered GI motility.**
- **Increased sensitivity of the GI system.**
- **Poor stress-managing mechanisms.**
- **Infections.**
- **Poor anxiety-controlling systems.**
- **Overactive immune system.**
- **Imbalances in normal flora (dysbiosis).**
- **Dysregulation of serotonin in the GI system.**
- **Food allergies.**
- **Candida overgrowth.**

Restricted Foods:

- 1) Saturated, hydrogenated, and Trans- fats.
- 2) FODMAPs diet. It has been introduced by Australian researchers to relieve symptoms of IBS. **FODMAPs** stands for *Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols*. **People with IBS should avoid high FODMAPs foods:**
 - Fruits: apples, apricots, blackberries, cherries, lychees, mango, pears, nectarines, peaches, plums, prunes, watermelon, dried fruits and canned fruits.

- **Grains: wheat, and rye.**
- **Dairy products.**
- **Ice cream.**
- **Custard.**
- **Legumes.**
- **Sweeteners: fructose, sorbitol, xylitol, mannitol, maltitol, and high fructose corn syrup.**
- **Vegetables: artichokes, asparagus, avocado, beets, broccoli, Brussels sprouts, cabbage, chicory, cauliflower, garlic, fennel, leeks, okra, onions, peas, radicchio, mushrooms, and snow peas.**
- **Chocolate.**

- **3) Alcohol.**
- **4) Caffeine.**
- **5) Spicy foods.**
- **6) Fried foods.**
- **7) Processed foods.**
- **8) Red meats.**
- **9) Margarine.**
- **10) Caffeinated drinks.**
- **11) Carbonated beverages.**
- **12) Artificial sweeteners, additives, and preservatives.**

Recommended Foods:

- 1) Foods low in FODMAPs:
 - Fruits: banana, blueberries, grapes, grapefruit, guava, orange, honeydew melon, kiwi, lemon, lime, tangerine, strawberries, and raspberries.
 - Vegetables: bell peppers, Bok Choy, carrots, celery, corn, eggplant, green beans, lettuce, cucumber, parsnips, tomato, and sweet potatoes.
 - Gluten free foods.
 - Lactose free products.
 - Rice milk.

- **2) Water: at least 2 liters day.**
- **3) Foods high in Omega-3: flaxseeds, chiaseeds, hemp seeds, and walnuts.**
- **4) Lean proteins: fish, turkey, and chicken.**
- **5) Ginger.**
- **6) Chamomile tea.**

Recommended Supplements:

- **Digestive enzymes:** A full spectrum product.
- **Probiotics:** a product that provides 10 to 20 billion organisms per serving.

- **Enteric Coated Peppermint Oil (ECPO):** 2 – 4 capsules a day. It helps with symptoms of IBS.



- **Ginger root:** 500 – 1000 mg with each meal. The active ingredients in ginger are volatile oils, zingiberene, bisabolene, shogoals, and gingerols. Ginger aids digestion, reduces irritation to the intestinal walls, and has anti-vomiting and anti-nausea activities.
- **Psyllium:** 5 – 20 grams a day. It is a bulking agent that contains insoluble fiber and mucilage. It helps with constipation and diarrhea in people with IBS.

- **Aloe vera juice:** $\frac{1}{4}$ - $\frac{1}{2}$ cup three times a day.
- **Caraway:** as a tea, three times a day, as a tincture, 2 – 6 ml a day, or as an enteric coated volatile oil, 3 gels a day. *A combination of caraway oil and peppermint oil generates better results.*
- **Grapefruit seed extract:** as a capsule, 250 – 1000 mg a day, or a concentrated liquid, 10 - 12 drops up to three times a day.

- **Slippery elm bark:** as a dried form 2 – 4 grams a day, or as a tincture 9 – 12 ml a day. Slippery elm contains mucilage that helps soothe symptoms of IBS.
- **Betaine hydrochloride:** 1 – 2 pills with each meal. It helps with digestion and reduces dyspeptic symptoms of IBS.

Miscellaneous Suggestions:

- **Liver detoxification.**
- **Exercise.**
- **Meditation.**
- **Yoga.**

Homework:

- **1) Describe FODMAPs diet for people with irritable bowel syndrome.**
- **2) Describe your dietary advices for people with gluten sensitivity.**

