Pathology and Nutrition

Digestive Pathologies

- Structural changes:
  - dynamic (ex. sliding hernia)
  - neoplastic (ex: esophageal cancer)
  - other (ex: diverticulosis, ulcer)

- Chemical changes:
  - inflammatory (ex.: gastritis)
  - auto-immune/allergic (ex: Celiac disease)
  - deficiency

GERD
= Gastro-esophageal reflux disorder

Clinical aspect: regurgitation of stomach contents, burning throat and esophagus after meals (esophagitis)

Etiological factors:
- hiatal hernia
- over-eating
- food intolerance/allergy
- under-active stomach

HCl Imbalance in GERD

Underactive stomach
(Hypochlorhydria)
- acid reflux
- heartburn
- fullness, bloating
- burping, intestinal gas

Resolved by: acids and enzymes (but not enzymes alone)

9/10 cases of GERD

Overactive Stomach (1/10)
(Hyperchlorhydria)
- acid reflux
- heartburn before OR after meals
- aggravated by spices, tomatoes, alcohol, caffeine, acids, milk products, supplementary enzymes

Relieved by:
- lying on left side
- taking antacids

Tip: over-activity may be an allergic response as histamine triggers stomach acid secretion
Etiologies of Hiatal Hernia

- pregnancy (3rd trimester)
- congenital
- heavy lifting
- straining (difficult bowel movements)
- obesity
- chronic coughing or sneezing

Hyper-chlorhydria or Hypo?

- 68 y.o. female
- Main complaint: brittle, breaking nails
- history of acid reflux
- takes Losec (a proton-pump inhibitor) for GERD

Recommendations?

Peptic Ulcer Disease (PUD)

- erosion of stomach or duodenal lining

Clinical aspect:

- ‘gnawing’ stomach pain before or after eating
- black, tarry stools
- regurgitations like “ground coffee”

Etiological Factors in Ulcers

Associated with:
- *Helicobacter pylori* infection

Risk factors:
- smoking
- stress
- Heredity
- NSAID use (over-the-counter painkillers)
  - Non-steroidal anti-inflammatory drugs

Ulcer: Restrictions (10 days)

- salt
- sugar
- fat
- animal protein
- acidic-tasting foods
- abrasive foods
- caffeine or alcohol

- Milk products
- ‘hot’ spices (gingerroot, cayenne, etc.)
- raw garlic and onions
- large meals
Ulcer: Therapeutic Foods

- cabbage
- carrots
- okra*
- asparagus*
- zucchini*
- rice
- cooked onions and garlic
- manuka flower honey

* = mucilaginous

Supplements During Ulceration

- Aloe vera gel (1-8 oz. NOT whole leaf)
- Zinc carnosine 30mg x2
- Licorice root tea
- Marshmallow root tea
- Glutamine powder (5 – 15 g daily)
- Vitamin A 10,000-30,000 i.u. * avoid if pregnant

Glutamine’s Benefits

- preferred fuel for healthy intestinal mucosal cell division (GALT)
- enhances efficiency of intestinal barrier
- protects against free radical damage
- builds immune function (precursor to glutathione)
- supports healing

Supplements NOT Recommended in Ulcer

- proteolytic enzymes (contain proteases)
- bromelain and papain
- betaine HCl
- “regular” vitamin C (unbuffered)

Lower GI Tract Pathologies
Irritable Bowel Syndrome

Clinical presentation:
- gas
- bloating
- cramping
- constipation and/or diarrhea
- anxiety/depression/stressed

-diagnosed by exclusion of other GI pathologies

Etiological Factors in IBS

- Mal-digestion
- Food intolerance
- SIBO (small intestine bacterial overgrowth)
- Anxiety/stress

Etiologies of Diarrhea

Acute:
- food poisoning
- influenza
- excessive fruit consumption

Chronic:
- nervous disorder
- food intolerance/allergy
- parasitic infection
- dysbiosis
- B vitamin deficiencies (B12, B3)

Diarrhea is the frequent, urgent evacuation of watery stool

Complications of Diarrhea

- dehydration
- electrolyte deficiencies (Na, K)
- weight loss
- weakness, fatigue
- hypotension
- cardiac arrhythmia
- death (if salts and water not replenished)

Recommendations: Diarrhea

Acute Diarrhea:
- Drink salted water
- Alternate with coconut water
- BRATS diet
- probiotics

Chronic:
- medical investigation to rule out worst case scenario
- Dysbiosis protocol

Constipation

Etiologies:
- lack of fibre
- lack of water
- lack of exercise
- morphine/codeine use
- stress
- Mg deficiency

Complications:
- hemorrhoids
- enlarged veins of the anus that may protrude, itch and bleed
- diverticular disease
- hypercholesterolemia
- intestinal obstruction
**Recommendations: Constipation**

- Increase soluble fibre
- Increase insoluble fibres
- Exercise, massage
- Digestive enzymes
- Probiotics
- Relaxation, breathing
- Dysbiosis protocol*
- Magnesium supplementation

**Dysbiosis (a.k.a SIBO)**

- An overgrowth of unfriendly, potentially pathogenic organisms in the bowel
- Characterized by gas bloating, cramping diarrhea or constipation

**Factors which contribute to Dysbiosis**

- Antibiotics
- The Pill
- Diet high in refined sugars, starches
- Over-eating
- Alcohol consumption
- Incomplete digestion
- Under-active immune system

**Dysbiosis Protocol**

4 Rs:

- Remove
- Replace
- Repair
- Re-introduce

**Remove**

**Part 1: Irritating and allergenic foods:**

- Gluten and yeast
- Corn, possibly soy
- Milk products
- Sugar
- Caffeine, alcohol
- Synthetic food additives

**Remove (cont’d)**

**Part 2:**

After 1 week on elimination diet, remove:

- Pathogenic microbes (yeast, bacteria, etc.)
  - Use anti-microbial substances**

**Do not use these in active (bleeding) Crohn’s/colitis.**
Replace

- Digestive acids (lemon, betaine hydrochloride)
- Digestive enzymes (full spectrum)
- Nutrient-dense, fresh, whole foods

Repair

Occurs naturally (10 days – 4 weeks) when:

- adequate nutrition provided
- abstinence from offensive foods
- reduction of unfriendly organisms

Extra support:

- L-glutamine powder (1 -3 tsp daily)
- aloe vera gel (1- 8 oz. daily)

Re-introduce

1) Friendly bacteria (acidophilus, bifidus, etc.)
   - replenish the gut for 5 days before re-intro of:
2) the suspect foods: one by one (if appropriate).*
   *leave 24 hours between re-intro’d foods if non-reactive and 3 days between if reactive.

GI Conditions Benefiting from The Dysbiosis Protocol

- GERD
- Ulcer*
- Chronic diarrhea
- Chronic constipation
- IBS
- Diverticulosis
- Crohn’s disease*
- Ulcerative colitis*
  *extra care must be taken. Avoid anti-microbials where *

Diverticulosis

Comparison of Diverticular Diseases

<table>
<thead>
<tr>
<th>Diverticulosis</th>
<th>Diverticulitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>- a permanent condition</td>
<td>- acute or chronic inflammation</td>
</tr>
<tr>
<td>- common in western peoples age 50+</td>
<td>- due to infection of diverticuli; diverticulosis pre-existing</td>
</tr>
</tbody>
</table>

Clinical aspect:
- chronic constipation
- bowels never feel completely empty

Clinical aspect:
- fever
- left sided abdominal pain
- bloating, distension
- difficult bowel movements
**Preventing Diverticulitis**

Priorities:
- Avoid: sugars, small seeds
- Consume: soluble fibres, probiotics
- Promote: regular elimination

#1: Underactive immune protocol
#2: Dysbiosis protocol

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**Intestinal Symptom Comparison**

<table>
<thead>
<tr>
<th>IBS (Irritable Bowel Syndrome)</th>
<th>IBD (Inflammatory Bowel Disease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- gas</td>
<td>- gas</td>
</tr>
<tr>
<td>- bloating</td>
<td>- bloating</td>
</tr>
<tr>
<td>- cramping</td>
<td>- cramping</td>
</tr>
<tr>
<td>- constipation and diarrhea</td>
<td>- diarrhea</td>
</tr>
<tr>
<td>- anxiety/depression</td>
<td>- anxiety/depression</td>
</tr>
<tr>
<td>- no morphological changes</td>
<td>- inflammation</td>
</tr>
<tr>
<td>- no bleeding</td>
<td>- morphological changes</td>
</tr>
<tr>
<td></td>
<td>- may involve bloody stools</td>
</tr>
</tbody>
</table>

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**Celiac Disease**

Pathogenesis:

- *gluten* allergy causes inflammation in the small intestine, damaging its villi and compromising absorption

*note: gluten = umbrella term for proteins such as gliadin, glutenin

*Note: the gut is the classic shock organ for the allergy but joints and skin may also be inflamed*

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**Grains in Celiac Disease**

*Safe to Eat*
- Oats*
- Buckwheat
- Quinoa
- Amaranth
- Teff
- Millet
- Rice

*Forbidden to Eat*
- Wheat
- Spelt
- Kamut
- Barley
- Rye
- Triticale

Corn (even *high gluten cornmeal* has no gliadin or glutenin)

*must be certified GF

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**Clinical Presentation**

Bowel movements (feces) are:
- Frequent
- Foul
- Fatty
- Floating

Abdominal bloating, cramping, pain
The “Cure” for Celiac

- 100% avoidance of gluten for at least one year on a nutrient-rich, GF diet can restore small intestine health
- Permanent 100% avoidance of gluten is ESSENTIAL for resolution of symptoms

Complications

- Malabsorption
- Weight loss
- Depression
- Anemia
- Osteoporosis
- Leukemia
- Colon cancer

Inflammatory Bowel Diseases

Ulcerative Colitis
- Shallow inflammation (mucosa only)
- Only large intestine affected
- Continuous inflammation
- Risk of colon cancer
- Possible granulomas
- ‘Curable’ w/surgery

Crohn’s Colitis
- Deep inflammation
- (Muscle layer affected)
- Narrowing of intestine
- Small and large intestines affected
- Patchy inflammation
- Involves granulomas (concentrations of wbc’s)
- “Incurable”

Morphological comparison

Ulcerative Colitis
- Narrowing of intestine
- Abdominal pain
- Diarrhea / loose stool
- Blood in stool
- Fatigue
- Anemia
- Osteoporosis
- Leukemia
- Colon cancer

Crohn’s Colitis
- Deep inflammation
- (Muscle layer affected)
- Narrowing of intestine
- Small and large intestines affected
- Patchy inflammation
- Involves granulomas (concentrations of wbc’s)
- “Incurable”

Symptomatology: Crohn’s and Ulcerative Colitis

- Abdominal pain
- Nausea, vomiting
- Blood in stool
- Fatigue
- Diarrhea / loose stool
- Low appetite (anorexia)
- Fever
### Complications
- Anemia (from blood loss)
- Nutrient deficiencies (Crohn’s)
- Intestinal obstruction (due to strictures)
- Fistulas (abnormal connection between tissues)
- Intestinal perforation
- Surgery (removal of diseased section)
- (Col)ostomy: surgery to create an opening from which waste can be excreted

### What Causes IBD?
- officially “idiopathic” (cause unknown)
- Latest hypothesis: a loss of tolerance for intestinal microbes results in inflammatory response that damages the intestines

Aggravators (not causes):
- refined sugars
- animal fat
- milk
- omega-6
- raw fruits and vegetables

### Case Study: 47 yr old female with Crohn’s diagnosis
Clinical aspect:
- abdominal cramps/pain
- bloody diarrhea, 5-7 x daily
- fever
- weight loss
- fatigue
- anemia
- loss of appetite
- sore joints
- skin rashes

### Recommendations
Priorities:
- Over-active immune protocol
- Ulceration protocol *

Additional:
- protein supplement
- calcium supplement
- vitamin D 1,000-3,000 i.u.
- folic acid 1 mg
- iron (if bleeding)
- vitamin A (ACEZ, for healing)

### Spotlight on The Specific Carbohydrate Diet
- Developed by Elaine Gotschall
  Author, *Breaking the Vicious Cycle*

- Allowable carbs: monosaccharides
- Forbidden carbs: disaccharides and polysaccharides (starches)
- Hypothesis: the IBD client has lost capacity to digest carbohydrates. With abstinence, the small intestine will heal more rapidly.

### Colon Cancer (carcinoma of the colon)
Risk factors:
- low fibre diet
- meat-based diet
- constipation
- gallbladder removal
- ulcerative colitis
- folic acid and vitamin D insufficiencies
### Signs and Symptoms

- blood in stool
- continual right sided abdominal pain
- and/or: pencil-thin feces (left sided)
- painful bowel movements
- Client must consult a medical professional

### Colon Cancer Prevention

- High-fibre diet (30-40 grams daily)
  - Combination of soluble and insoluble fibers
- Daily consumption of probiotic-containing foods or supplements
  - plain yogurt or kefir
  - sauerkraut, miso, etc.
- Adequate vitamin D, folate status (5-MTHF)
- At least 1 well-formed bowel movement daily

### Pancreatitis

- Inflammation and enlargement of the pancreas
- Acute = an emergency; fasting is recommended until medical advice is obtained

**Clinical presentation:**
- severe pain in upper abdomen, radiating to the back
- ecchymoses (hemorrhagic red spots) on the flanks, near the navel
- nausea, vomiting, bloating, gas, fever, sweating, muscle aches

### Risk Factors for Pancreatitis

- Gallstone dislodgement
- Cystic fibrosis
- SLE (lupus)
- Infection
- Alcohol consumption
- Prescription drug-induced

### Chronic Pancreatitis

**Clinical presentation**
- Weight loss due to malabsorption (impaired enzyme output)
- Abdominal pain radiating to the back
- Unstable blood sugar
- Fat, undigested food in the stool

**Risk factors:**
- Alcoholism, previous acute pancreatitis, gallstones, diabetes

### Nutritional Recommendations in Chronic Pancreatitis

- Decrease consumption of refined carbohydrates
- Abstain from alcoholic beverages
- Anti-inflammatory diet
- Pancreatic glandular
- Digestive enzymes*