

- My story as an example
- The importance of the gut
- Step 1
  - Modified fast, then
  - More advanced diet: AIP, low FODMAP, low FODMAP/SCD
  - Probiotic, digestive support
  - Adrenal support
- Step 2
  - GI evaluation; SIBO, GI infections – labs to use and avoid
- What about thyroid?

# Background



# & My Experience

- *Cravings, mood and insomnia*

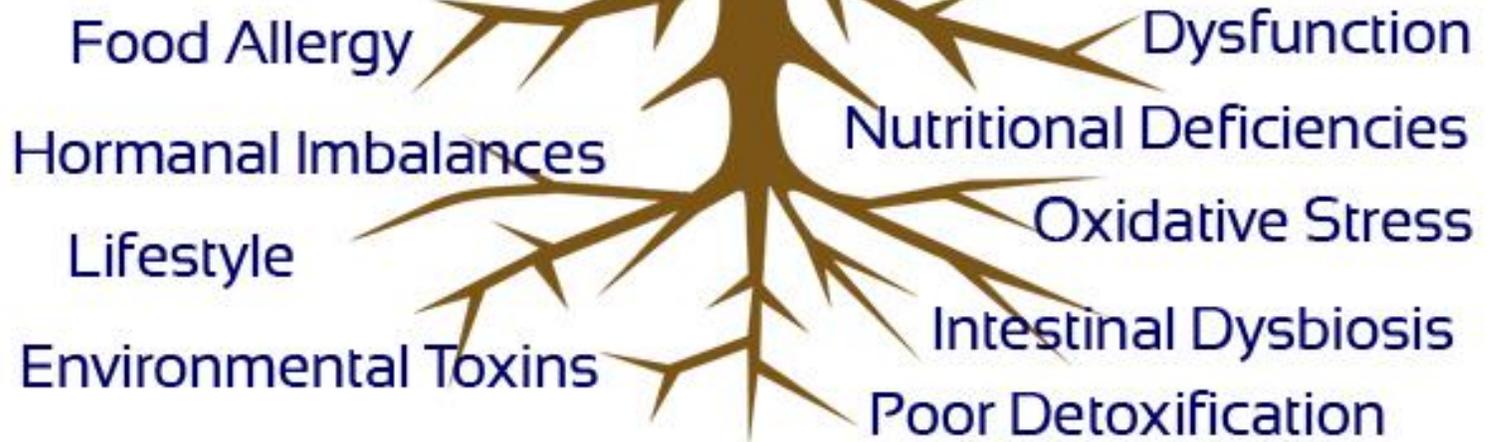
# Symptoms



Functional  
Medicine

# Functional Naturopathic Me

## Causes

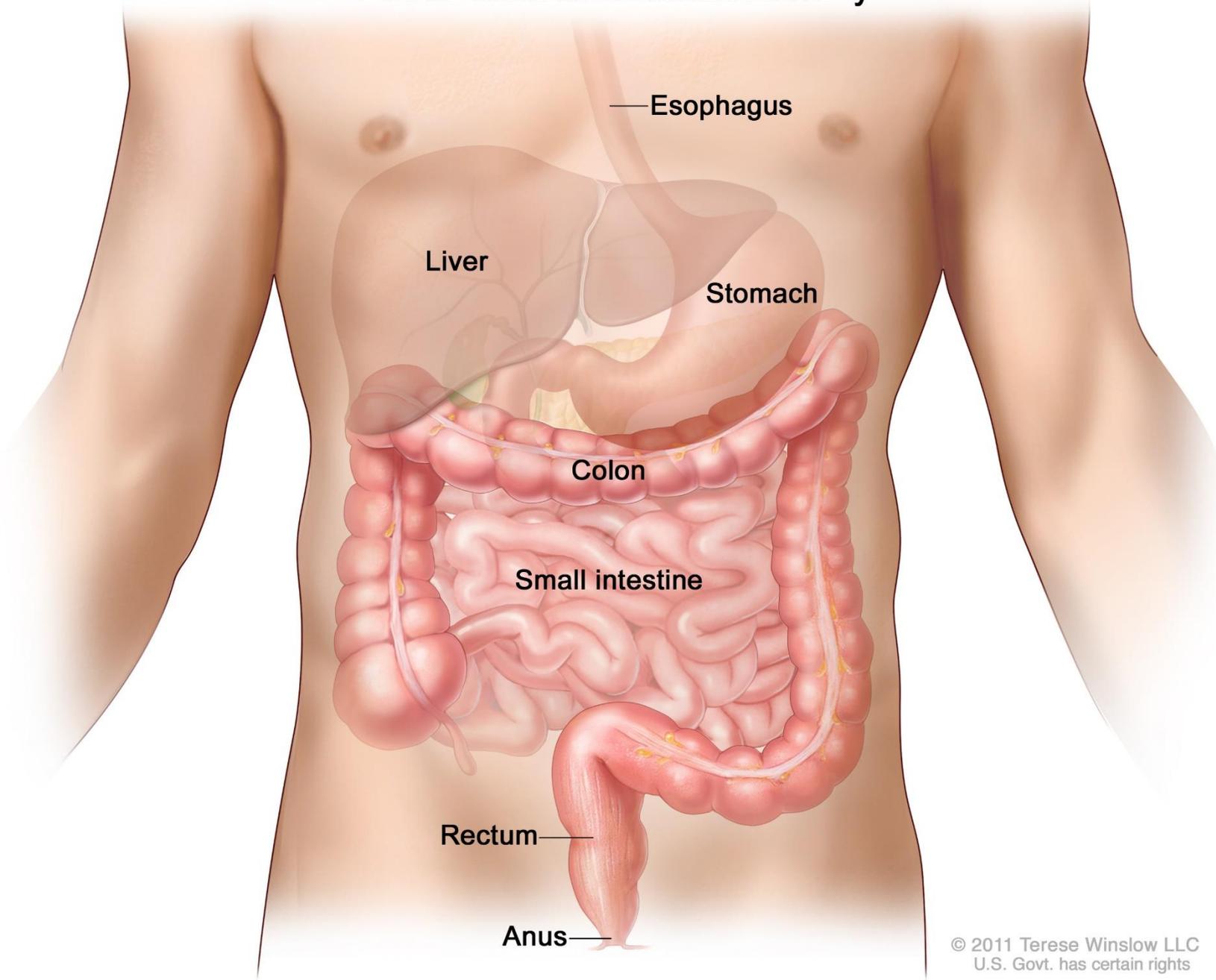


Mit

Dysfunction  
Nutritional Deficiencies  
Oxidative Stress  
Intestinal Dysbiosis  
Poor Detoxification

# The importance of the gut

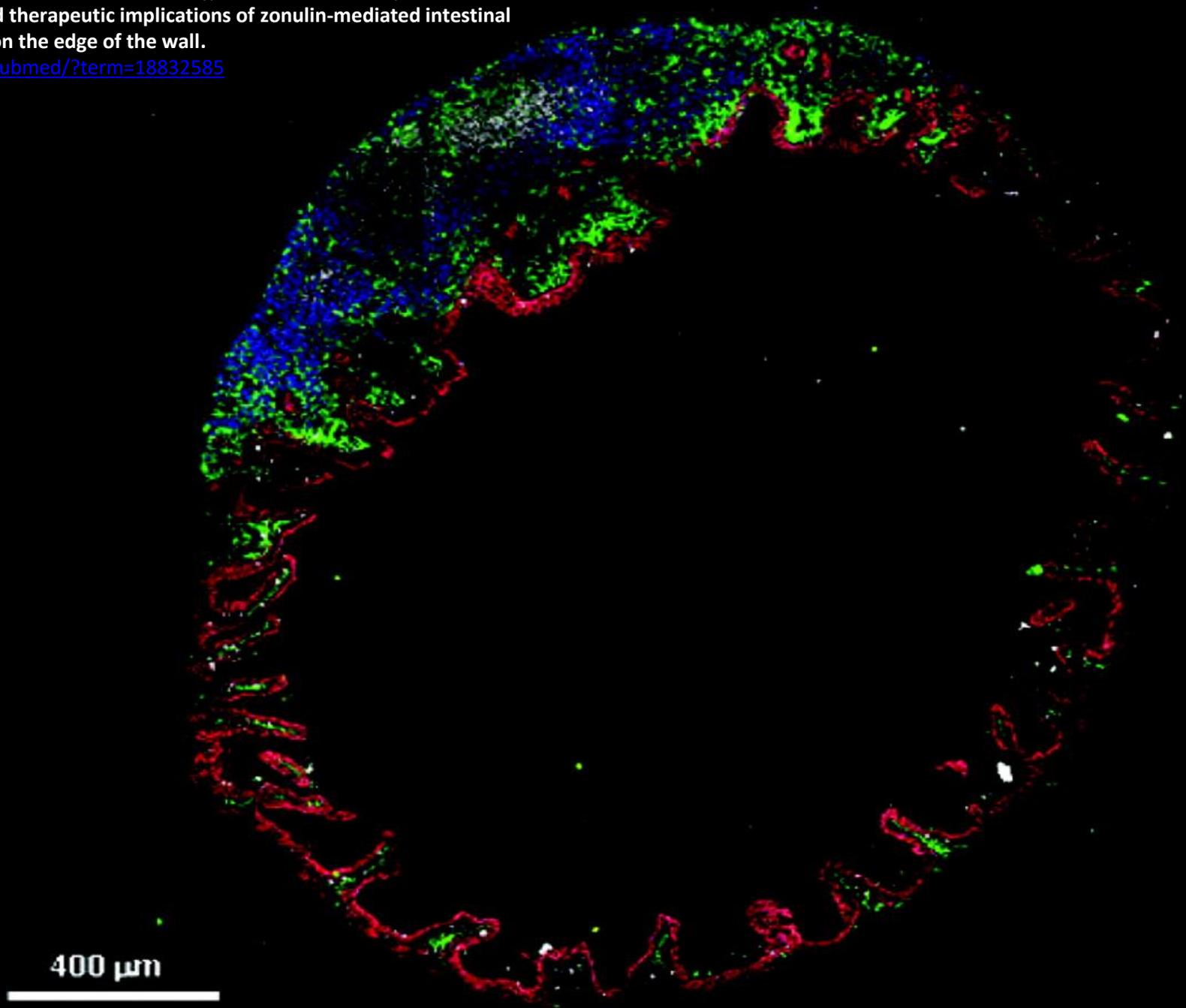
## Lower Gastrointestinal Anatomy



### Connections to other systems

- Thyroid
  - AI, conversion, inflammation
- Adrenals
  - Stress response
- Male/Female hormones
  - Inflammation feeds aromatization and 17,20 lyase activity
  - Detoxification of hormones
- Neurological
  - AI, inflammation, BBB connection to GIB
- Blood sugar
  - Inflammation and adrenals

**Epithelial Cells**  
**Dendritic Cells**  
**B Cells**  
**T Cells**



400  $\mu$ m

# A Few Real World Examples

- Emi
  - Was treating her daughter for SIBO
  - She saw her conventional gastroenterologist, diagnosed with SIBO also... Then did one course of antibiotics and lost 8lbs in 2 weeks, she was 5' tall and weighed 120lbs.
  - But, then after a few weeks everything came back.
  - Came into see me for a more robust approach

Step 1

GI Healing & More  
Restrictive Diet



# Optional, 4 day fast

## GAPs option

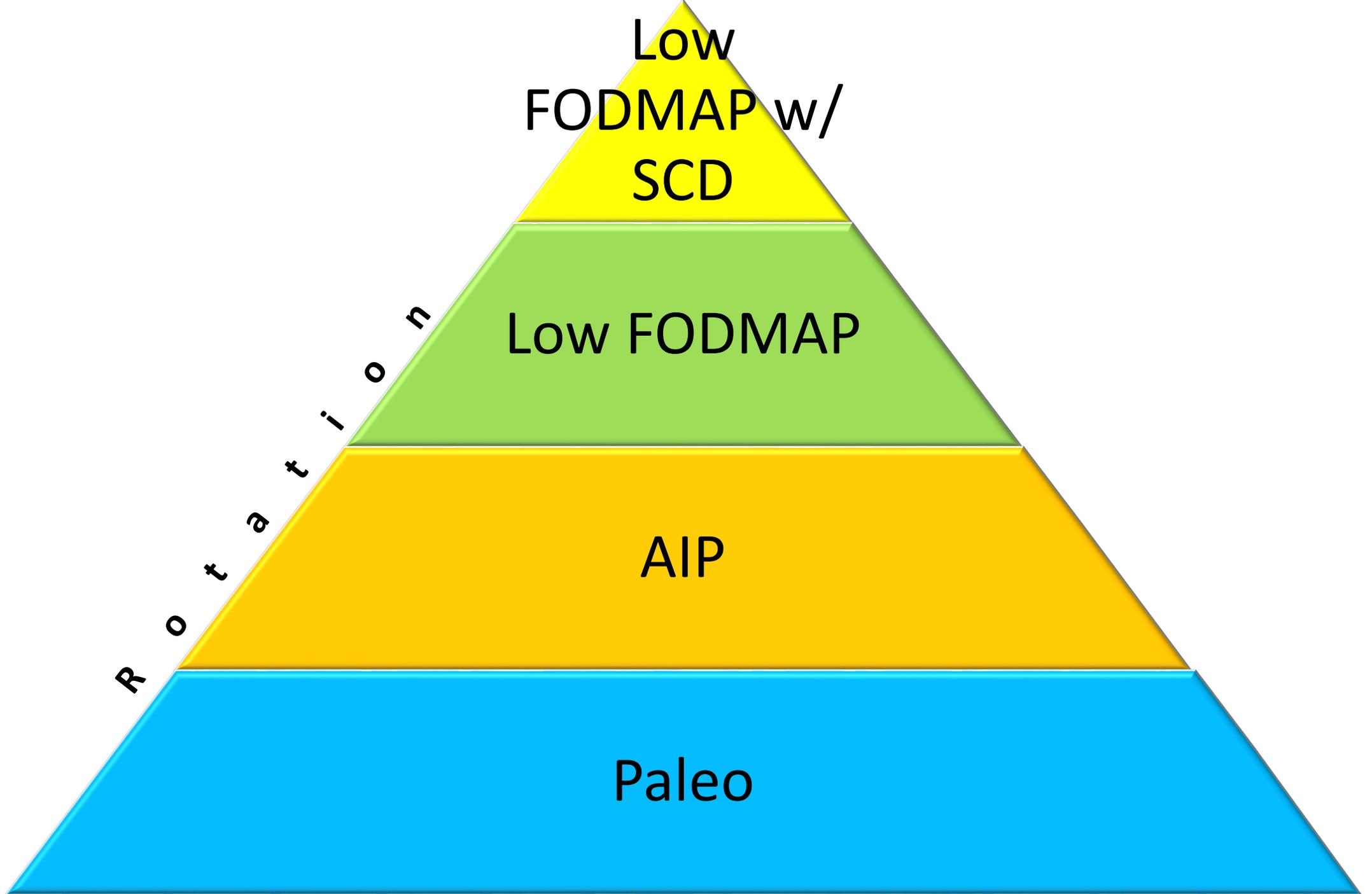
- Pure broth



## Master cleanse-like option

- Lemons, maple syrup, water, cayenne







# Diet Protocols

- AIP Basic layout
  - ✓ Paleo plus; no eggs, nuts/seeds, night shades, beans/legumes
- Low FODMAP sbasic layout
  - ✓ Removes foods that encourage bacterial growth, prebiotics
- SCD basic layout
  - ✓ Removes foods that are hard to digest if there is digestive tract damage and or inflammation

Food groups	Safe 	Be careful*	Avoid 
Vegetables	<b>Alfalfa</b> <b>Bamboo shoots</b> <b>Bean sprouts</b> <b>Bell peppers (capsicums)</b> <b>Bok choy</b> <b>Carrot</b> <b>Cherry tomatoes</b> <b>Chives</b> <b>Cucumber</b> <b>Eggplant</b> <b>Endive</b> <b>Ginger</b> <b>Green beans</b> <b>Kale</b> <b>Lettuce</b> <b>Olives</b> <b>Parsnip</b> <b>Pickles (without sugar)</b> <b>Seaweed, nori</b> <b>Spinach</b> <b>Spring onion (green part only)</b> <b>Swiss chards (silverbeet)</b> <b>Tomatoes</b> <b>Zucchini</b>	<b>Avocado (polyol)</b> <b>Beetroot (fructans)</b> <b>Broccoli (fructans)</b> <b>Brussels sprouts (fructans)</b> <b>Butternut pumpkin (fructans)</b> <b>Cauliflower (polyol)</b> <b>Celery (polyol)</b> <b>Fennel bulb (fructans)</b> <b>Green peas (fructans)</b> <b>Mushrooms (polyol)</b> <b>Sauerkraut (fructans)</b>	<b>Artichoke (fructose)</b> <b>Asparagus (fructose)</b> <b>Cabbage (fructans)</b> <b>Garlic (fructans)</b> <b>Jerusalem artichoke (fructans)</b> <b>Leeks (fructans)</b> <b>Okra (fructans)</b> <b>Onions (fructans)</b> <b>Shallot (fructans)</b> <b>Snow peas (fructans, polyols)</b> <b>Sugar snap peas (fructose)</b> <b>Raddichio (fructans)</b> <b>Tomato sauces &amp; paste (fructose &amp; fructans)</b>
	Fruits	<b>Banana, ripe</b> <b>Blueberry</b> <b>Cantaloupe (rock melon)</b> <b>Grapefruit</b> <b>Honeydew melon</b> <b>Kiwifruit</b> <b>Lemon</b> <b>Lime</b> <b>Mandarin</b> <b>Orange</b> <b>Papaya</b> <b>Passionfruit</b> <b>Pineapple</b> <b>Raspberry</b> <b>Rhubarb</b> <b>Strawberry</b>	<b>Banana, unripe</b> <b>Longon (polyol)</b> <b>Lychee (polyol)</b> <b>Rambutan (polyol)</b> <b>Grapes (10-15/serving; fructose)</b>
Starches		<b>White potatoes</b> <b>Plantains (green, verdes)</b> <b>Turnip</b> <b>Rutabaga (swede)</b> <b>Taro, Cassava/yuca</b> <b>White rice</b>	<b>Sweet potatoes/yams (polyol)</b>
Nuts		<b>Most nuts and nut butter (cashews, macadamia, pecans, pine nuts, walnuts, pumpkin seeds, sesame seeds, sunflower seeds)</b>	<b>Pistachios (fructans)</b> <b>Almonds</b> <b>Hazelnuts</b>



# Diet Protocol

- Big picture
  - Not forever, used to help re-established healthy intestinal barrier & immune response
  - Could do indefinitely, but may not be necessary for most
  - Reintroduction is where you will personalize to your needs



# 30 Day Dietary Trial

Reintroduction if highly improved, if not wait

- No set rule, but there are some guidelines
  - ✓ **Isolate the variable**: bring back 1 food at a time and give it 2-3 days before deciding
  - ✓ **Listen to your body**: any negative symptom may be from a food intolerance
    - **Fatigue, gas/bloating, loose stools, constipation, mood fluctuations, breakouts, brain fog**
    - Consider journaling
  - ✓ **Its not all or none**: you may notice you can tolerate small doses of certain foods, so just limit intake to small doses
  - ✓ **You may need to try again later**: as you become healthier you will notice your tolerance increases. You may need to work through the rest of these steps (fix your gut or other issue) then revisit the reintroduction.
  - ✓ **Remember**
    - you don't have to reintroduce
    - increased CHO can be a part of the reintroduction



***Most Tolerated***

- Gluten free products
- Potatoes
- Sweet potatoes
- Night shades
- Beans & legumes

- Eggs
- Nuts
- Higher carb intake

***Most Problematic***

- Gluten containing grains
- Dairy
- Soy

# Recognizing food intolerances *visually*

## Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. <b>Entirely Liquid</b>



# Step 1 optional add-ons

- Digestive support
  - HCl, enzymes, bile
  - Digestzymes from Designs for Health 1-3 with each meal
- Probiotic
  - Lacto/Bifido blend
    - TherBiotic Complete powder OR VSL#3 at 100-900 billion per day
  - S. Boulardii
    - 500-1,000 mg per day
- Adrenal Support
  - ✓ Adaptogenic herbs: Rhodiola Rosea, Eleutherococcus senticosus, Ashwagandha, Panax Ginseng, Licorice Root,
  - ✓ Adrenal glandular extracts: bovine adrenal extract
  - ✓ Pregnenolone & DHEA
  - ✓ Vitamin C and B vitamins



There are no *magic* supplements



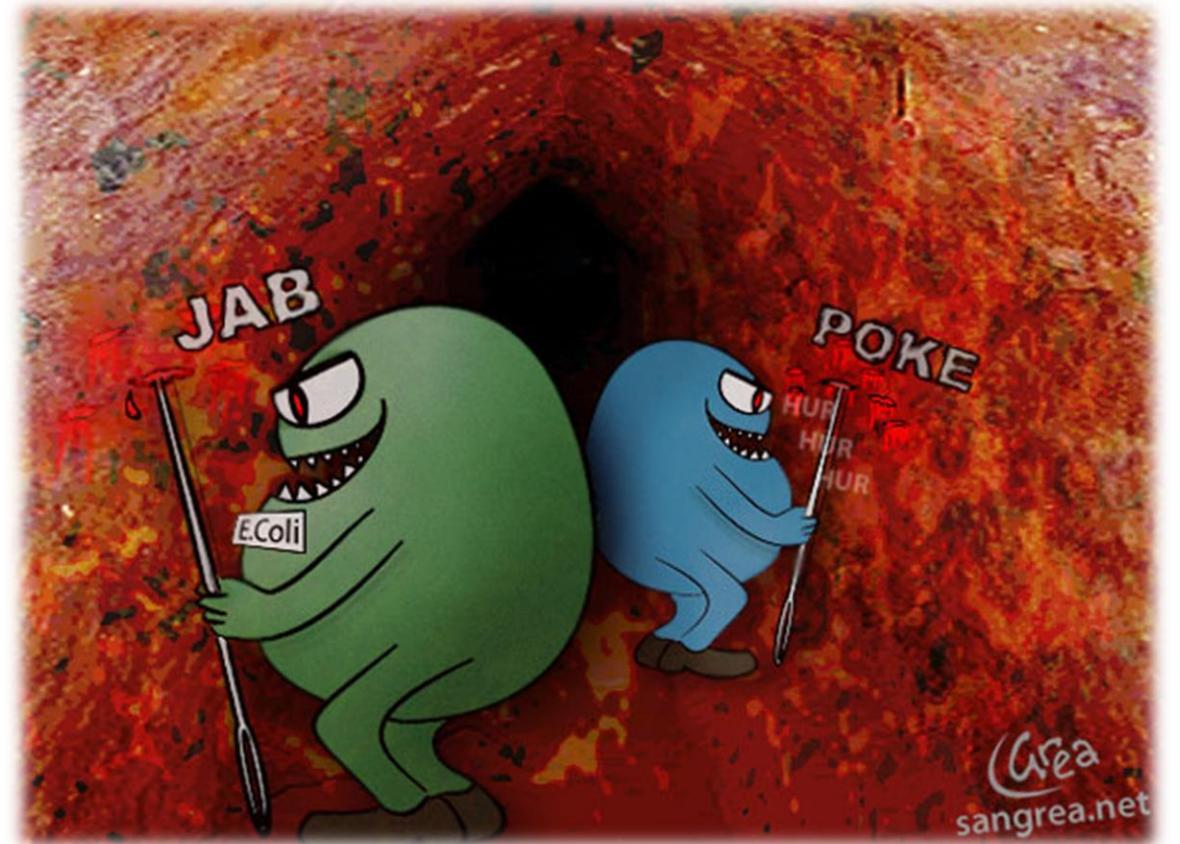
But you may see a disappearing act





# My clinical observations

- If diet, pro and/or HCl/enzymes doesn't fix the problem
- There is likely a gut infection, overgrowth or imbalance
- This is why caution is warranted with ***prebiotics*** until.....



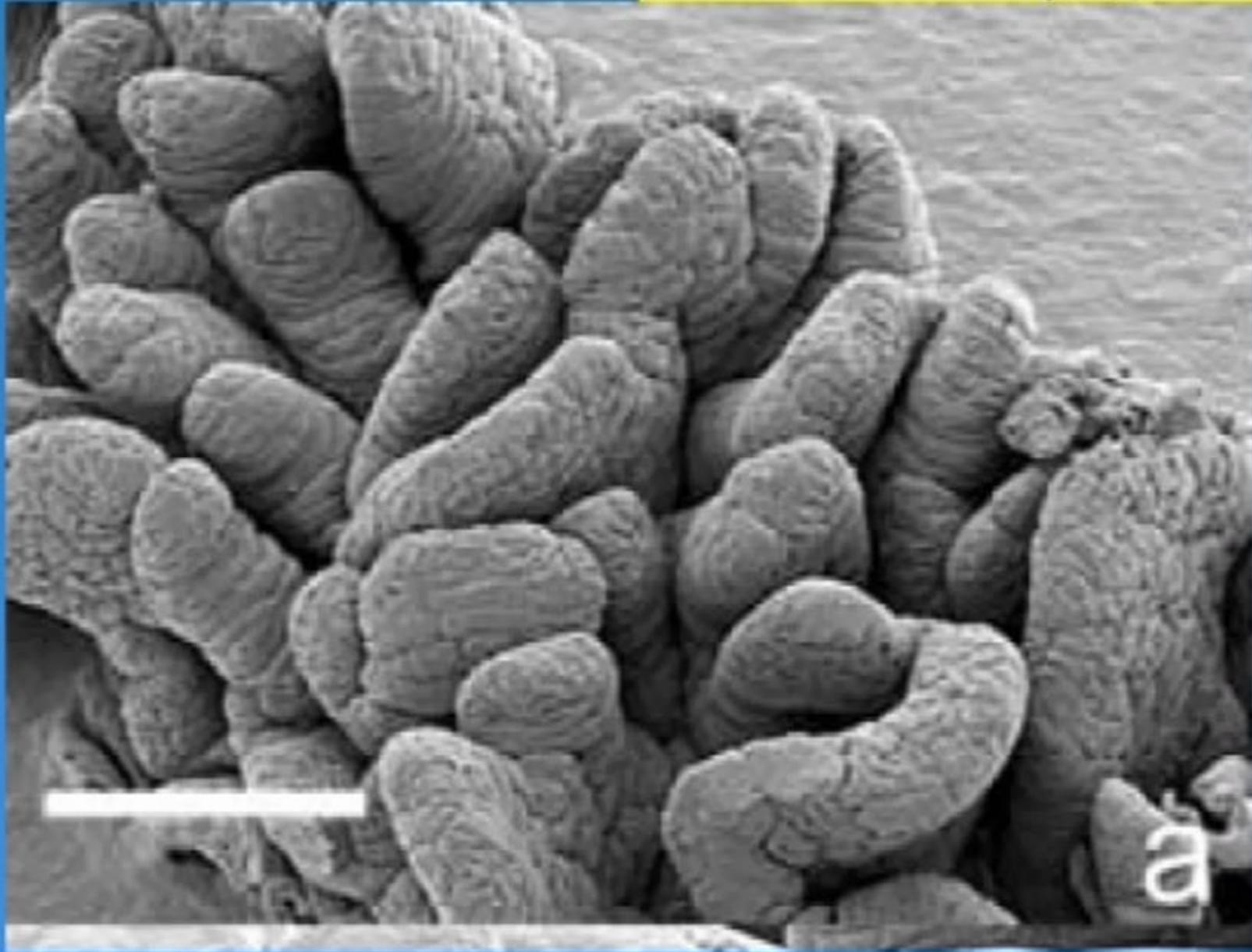
## Other factors can sabotage improvements normally seen on a gluten free diet

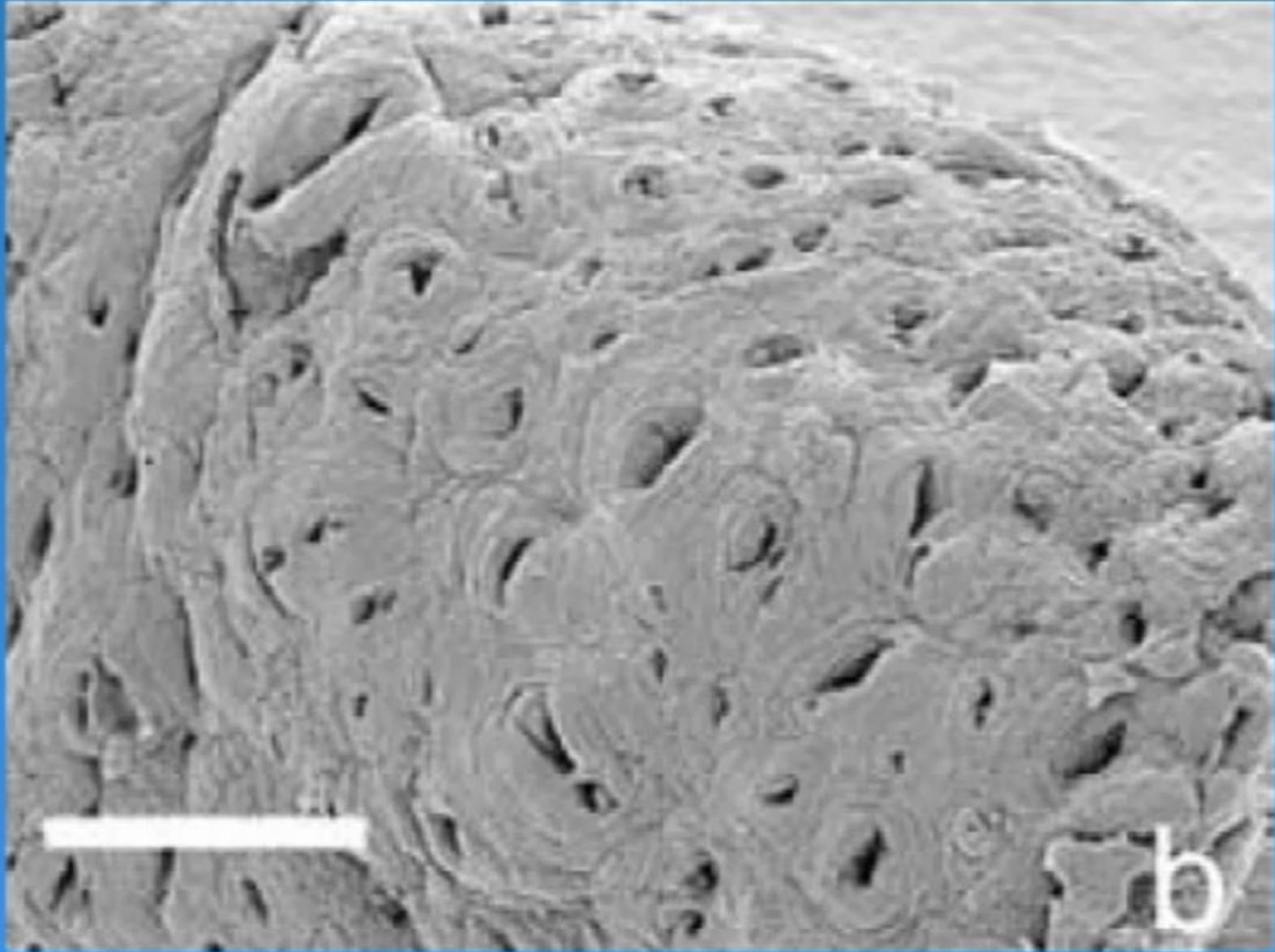
- Eating gluten when intolerant
  - Improper gluten free diet
- Other food allergies/intolerances
  - Dairy, eggs, nuts, soy...
- SIBO, dysbiosis and/or infections
- Poor secretion of digestive acids/enzymes

### Non-responsive to GF Diet

**Pediatric and adult celiac disease: similarities and differences.**

Indian J Gastroenterol. 2013 May 29. PMID: 23715643





Ref. Dr. Thoman O'Bryan, D.C. **Flattened Villous Architecture**

# ***There are many reasons why food allergy testing is not very helpful***

- There is more to food reactions than just the immune system. There is also how much certain foods feed bacteria and fungus. These are people who do better on the low FODMAP or SCD diets, as we will discuss more in a moment. This is not tested by food allergy testing
- How a food effect your blood sugar - not tested by food allergy testing
- If you have gut inflammation, infections or excessive stress this will cause leaky gut. Once you have leaky gut you will react to many foods. These are false allergies and they will go away once your gut heals. When I had my parasite, I had 23 food allergies! Once I fixed my leaky gut they all went away.
- Food allergy test results can change based upon if the test is using raw or cooked foods! <http://www.ncbi.nlm.nih.gov/pubmed/19435515> A certain lab is excited about this because they now offer both cooked and raw allergy testing.... For over \$1,000! I appreciate that the lab is trying to offer more comprehensive test, but this is a lot of money for a test that has questionable clinical utility.

# ***There are many reasons why food allergy testing is not very helpful***

- Testing is not always accurate. I would roughly estimate that 50% of the time, the food my patients knew they reacted to came back as OK on their food allergy test. And vice versa, 50% of the time foods they really seemed to feel good on, came back as “allergic”.
- We already mentioned that excessive intake of histamine can be a problem; causing brain fog, insomnia, irritability, etc... - histamine is not tested on food allergy testing
- High consumption of D-lactate rich foods may be a problem for children – this not tested on food allergy testing
- Finally, those who have gut inflammation may be made worse if they consume high amount of fiber or raw foods, as we will discuss shortly also.

**Questions**



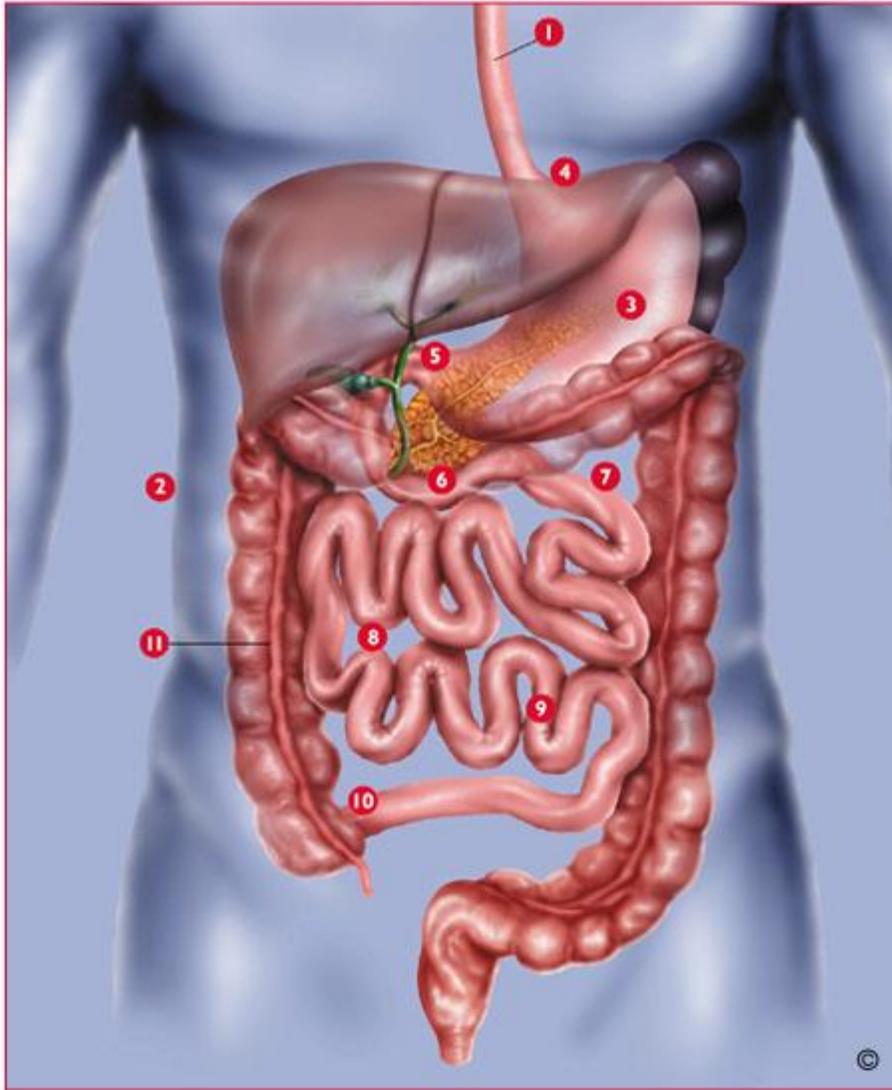
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# Small Intestinal Bacterial Overgrowth (SIBO)

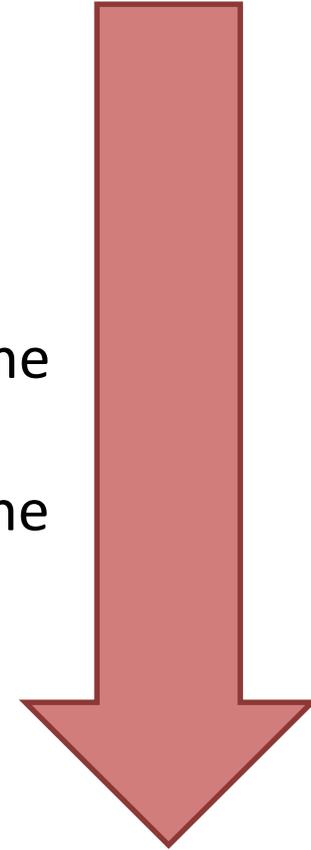


# Small Intestinal Bacterial Overgrowth (SIBO)

The Human Digestive System

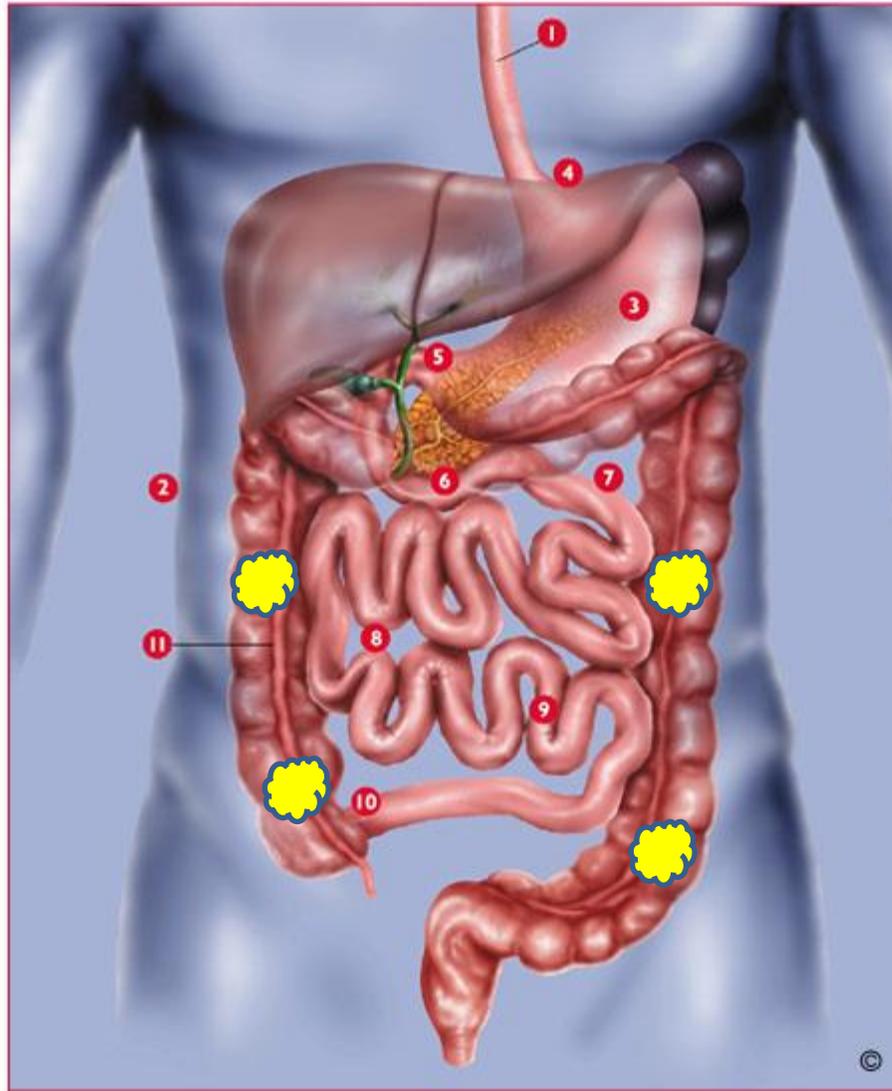


1. Mouth
2. Stomach
3. Small Intestine
4. Large intestine
5. Rectum



# Small Intestinal Bacterial Overgrowth (SIBO)

The Human Digestive System



1. Mouth

2. Stomach

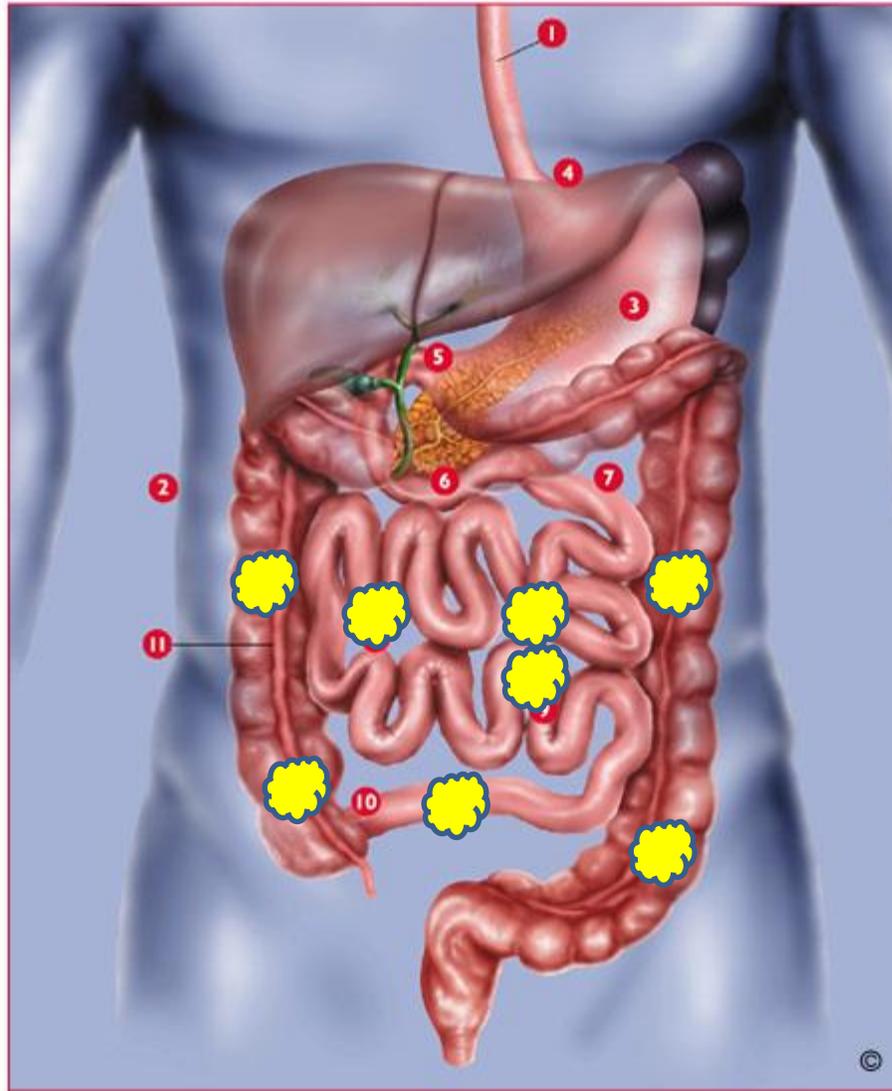
3. Small Intestine

4. Large intestine  Healthy Bacteria

5. Rectum

# Small Intestinal Bacterial Overgrowth (SIBO)

The Human Digestive System



1. Mouth

2. Stomach

3. Small Intestine

4. Large intestine

5. Rectum



Healthy  
Bacteria

# Small Intestinal Bacterial Overgrowth (SIBO)

- Signs and Symptoms
  - Gas and/or bloating after meals
  - Abdominal pain/discomfort
  - Diarrhea and/or constipation
  - Weakness & fatigue
  - Weight loss, muscle loss
  
  - Others.....? YES

# How can we treat SIBO

- Herbs
- Antibiotics
- Liquid diet
- Probiotics

# IBS and SIBO

- How common is IBS?
  - Around 15% of population
- Common causes?
  - Diet
  - IBS - up to 84% of cases may be caused by SIBO
  - SIBO is often times responsible for non-responsiveness to gluten free diet
  - Parasites are a common cause of IBS



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Gut Health

Thyroid  
Solutions

Autoimmune  
Solutions

Paleo  
Diet

Healthy  
Lifestyle

# Beating SIBO – A Patient Follow Up

Dr. Ruscio 15 Comments

Small Intestinal Bacterial Overgrowth, aka SIBO, is a common cause of digestive symptoms; gas, bloating, constipation/diarrhea, reflux and abdominal pain. It is also a common cause of IBS. This case reviews how you can become symptom free after treating SIBO. Also, and possibly more important, is that we do not always need to reach a "true negative" on the breath test to be symptom free and feeling great. If you need help with diagnosis or treatment of SIBO,



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# Is there more than SIBO?

- Yes, 2 high quality stool tests can help identify if other problems are present
  - Candida, yeast, fungus
  - H. Pylori, Yersinia
  - Giardia, cryptosporidium,
  - Toxoplasmosis, blasto
  - Worms, parasites
- BioHealth 401H, Diagnostechs GI only panel, Doctors Data Comp. stool with Parasitology 3x, GI-MAP Diagnostic Solutions
- Treatment options?

# A Real World Example

- Jen
  - Could not lose weight and wasn't sleeping great
  - Low carb paleo, great exercise, sleep and lifestyle
  - Suspected hypothyroid
  - Referred from another doctors who thought she was too smart



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# Candida Biofilm Treatment for Weight Loss

Dr. Ruscio  7 Comments

This is a patient conversation from a few years ago but I thought it was worth sharing. It illustrates the importance of treating biofilms in stubborn cases of candida. It also illustrates how fairly remarkable weight loss can be achieved by improving your gut health. If you would like to test for candida, click here [Subscribe to Dr. Ruscio's YouTube account](#) Candida Biofilm Treatment for Weight Loss Dr. Michael Ruscio: Hi, this is Dr. Ruscio, and I'm here with Jen. She ... [\[Read more...\]](#)



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**Questions**



# In My Humble Opinion

- Your FM doc does not replace your conventional doc
- Beware packages, dogmatism and lofty claims
- More isn't always better
- Things I have found unnecessary
  - Adrenal testing
  - Food allergy testing
  - Robust autoimmune panels
  - Other hormone testing – hormone don't work well if your GI is off
- Find a doctor your trust and then give them time, don't jump ship
- Don't become neurotic over diet, gluten, etc...

# Thyroid Overview

- 2 general factors to assess
  - Are you truly hypothyroid and require Rx
  - Is your thyroid normal but your thyroid hormone isn't working correctly
- Either way you need to optimize diet, lifestyle and gut health
- Available treatments
  - Autoimmunity and conversion
    - Elimination diet (Whole 30)
    - Addressing any GI infections or imbalances
    - Vitamin D, Selenium (CoQ10 and Zinc)
  - Conversion and thyroid support
    - Thyroid glandulars, ashwghanda, guggulu



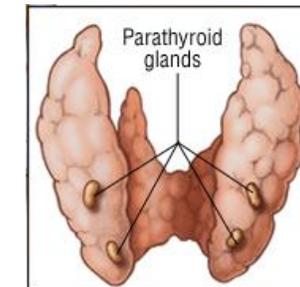
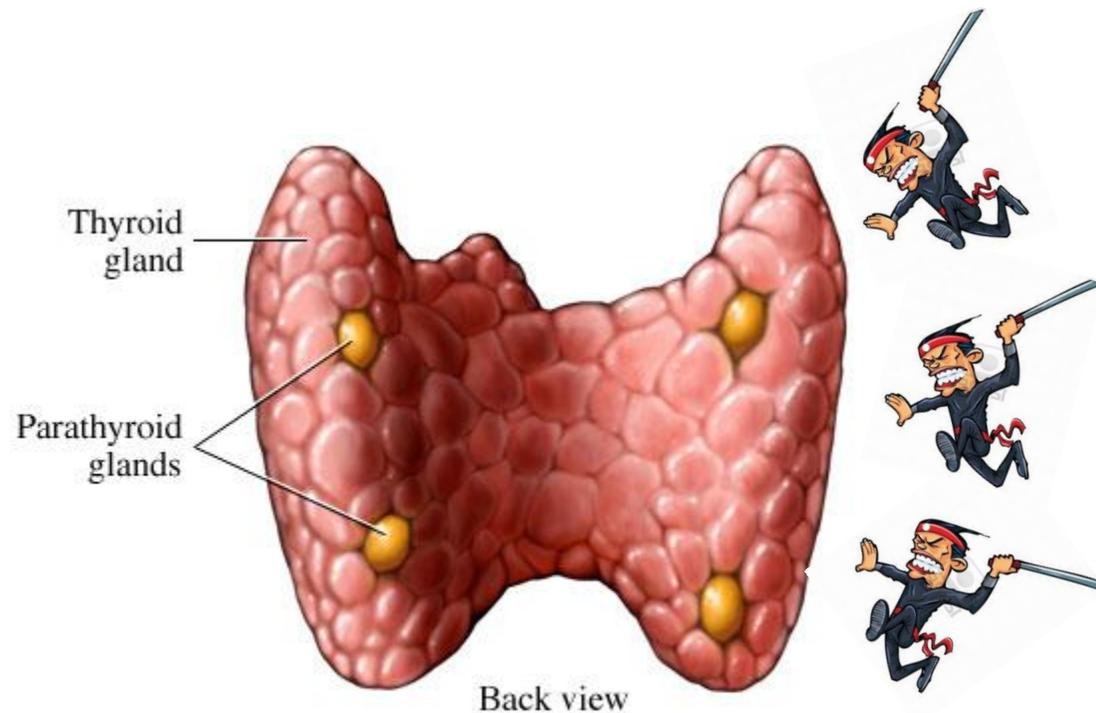
• “Hashimoto’s is the most common cause of hypothyroidism in the united states”

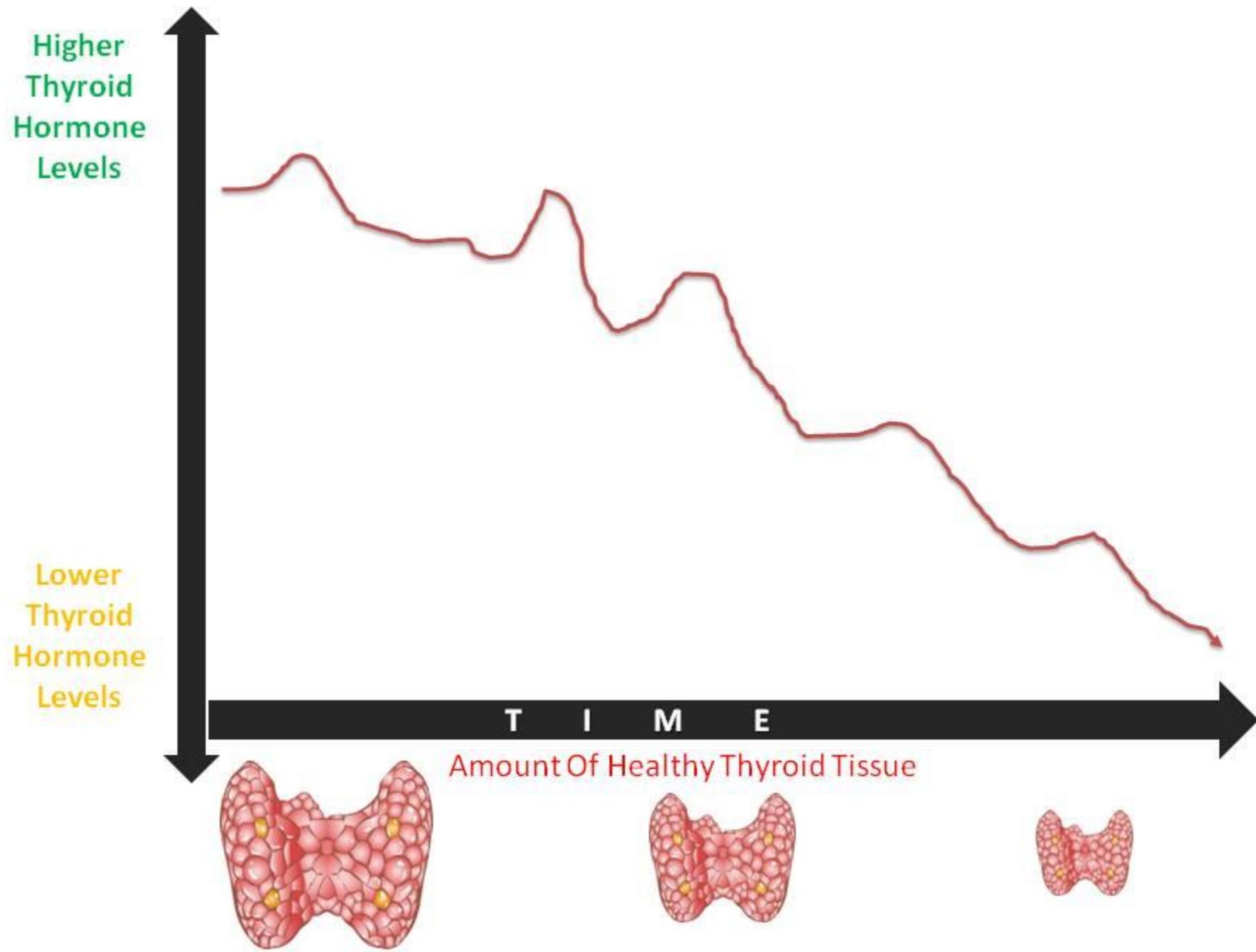
- Mayo Clinic - <http://www.mayoclinic.com/health/hypothyroidism/DS00353/DSECTION=causes>
- J Surg Res. 2008 Nov;150(1):49-52. Epub 2007 Oct 29. PMID: 17996901
- Clin Nucl Med. 1993 Apr;18(4):302-6. PMID: 8386991
- Clin Dermatol. 2006 Jul-Aug;24(4):247-55. PMID: 16828405



## Understanding Hashimoto's Autoimmunity

- It is a process in which your body produces immune cells that attack and damage your thyroid aka Hashimoto's
- Risks? (PGAS)







## National Institutes of Health's Autoimmune Diseases Coordinating Committee, regarding autoimmune disease

- “collectively they are thought to affect approximately 5 to 8 percent of the United States population – 14 to 22 million persons.”
- “To provide a context to evaluate the impact of autoimmune diseases,
  - cancer affected approximately 9 million people in the United States in 1997
  - and heart disease affected approximately 22 million people in the United States in 1996”

# Hypothyroidism Types

## Functional

Aka Euthyroid Sick Syndrome

•thyroid is ok, but your thyroid is not making enough hormone or body is not using thyroid hormone properly.

## Autoimmune

Hashimoto's or (Graves)

•thyroid is being damaged and other parts of the body may be experiencing damage also.

Not feeling well

No treatment, told its  
in your head..... or  
medication

Cause is not generally  
addressed in either case

No treatment, thyroid  
medication, radioactive  
destruction of thyroid  
gland



# Identifying If You Have Thyroid Autoimmunity and/or Hypothyroid

## Lab markers & imaging

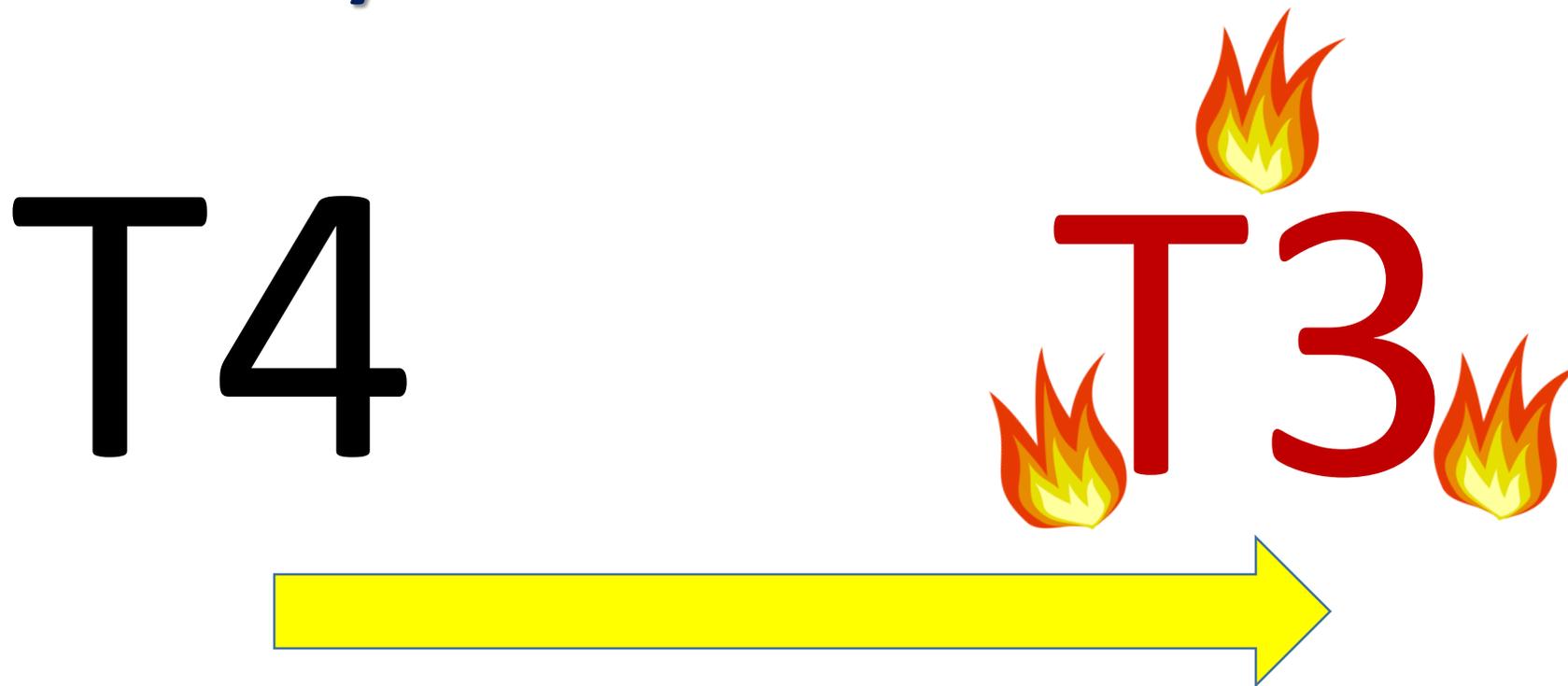
- 2 for Hashimoto's: TPO and TG
- 2 for Graves': TSI and TR
- Imaging via ultrasound

## Hypothyroid

- High TSH, low T4 – according to standard range



# Thyroid Hormone Conversion



T4 has virtually no cellular effect, it must be converted to T3 in order to have an effect.



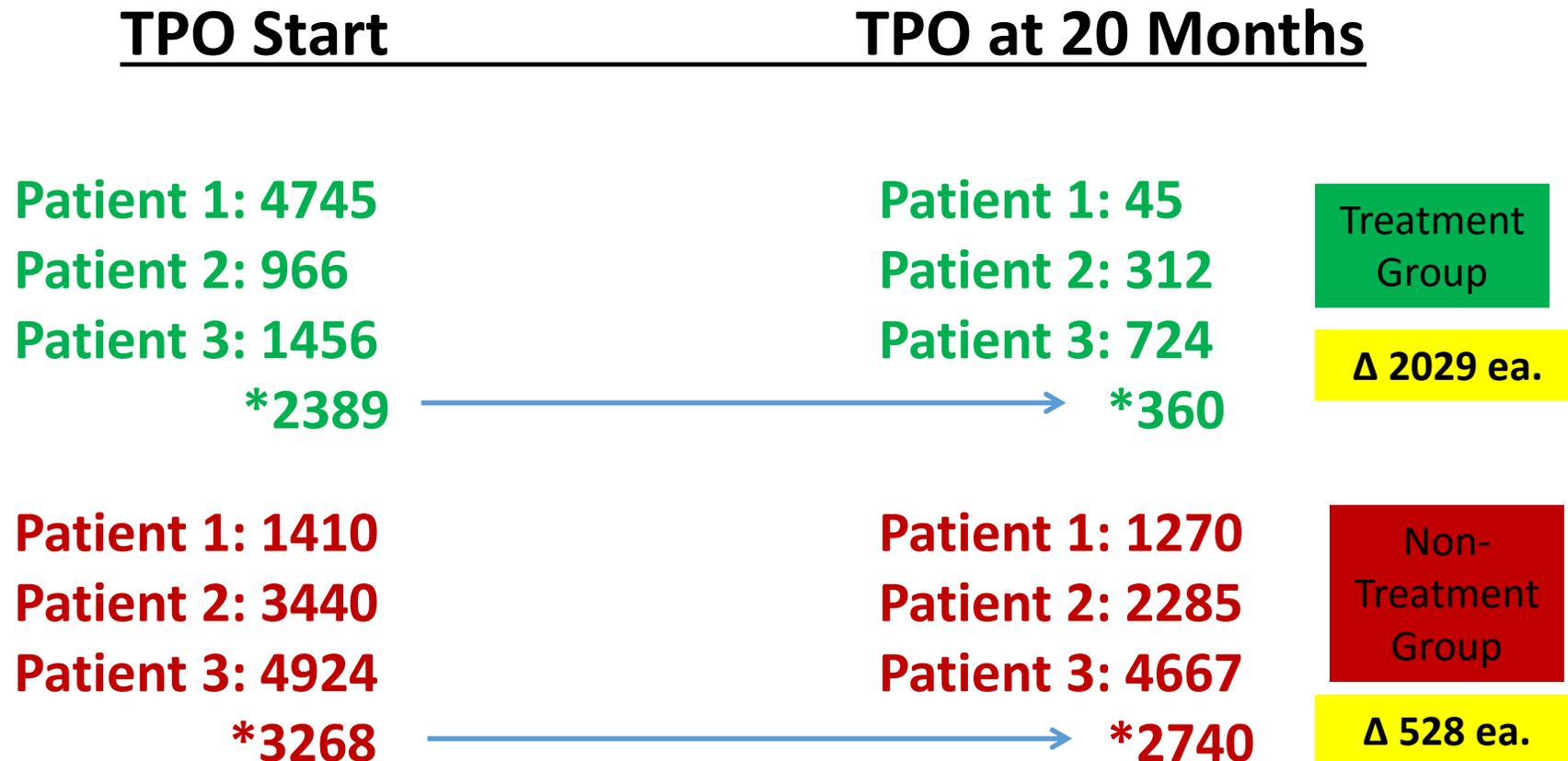
## Infections Known To Cause Thyroid Autoimmunity

- Bacteria; mainly what's known as gram negative bacteria
  - Yersinia enterocolitidis
  - Helicobacter pylori
- Viruses; mainly the herpes family of viruses which includes;
  - Epstein barr
  - Cytomegalovirus
  - Herpes Simplex Virus 1, 2, 6 & 8

# Decrease in thyroid autoantibodies after eradication of *Helicobacter pylori* infection.

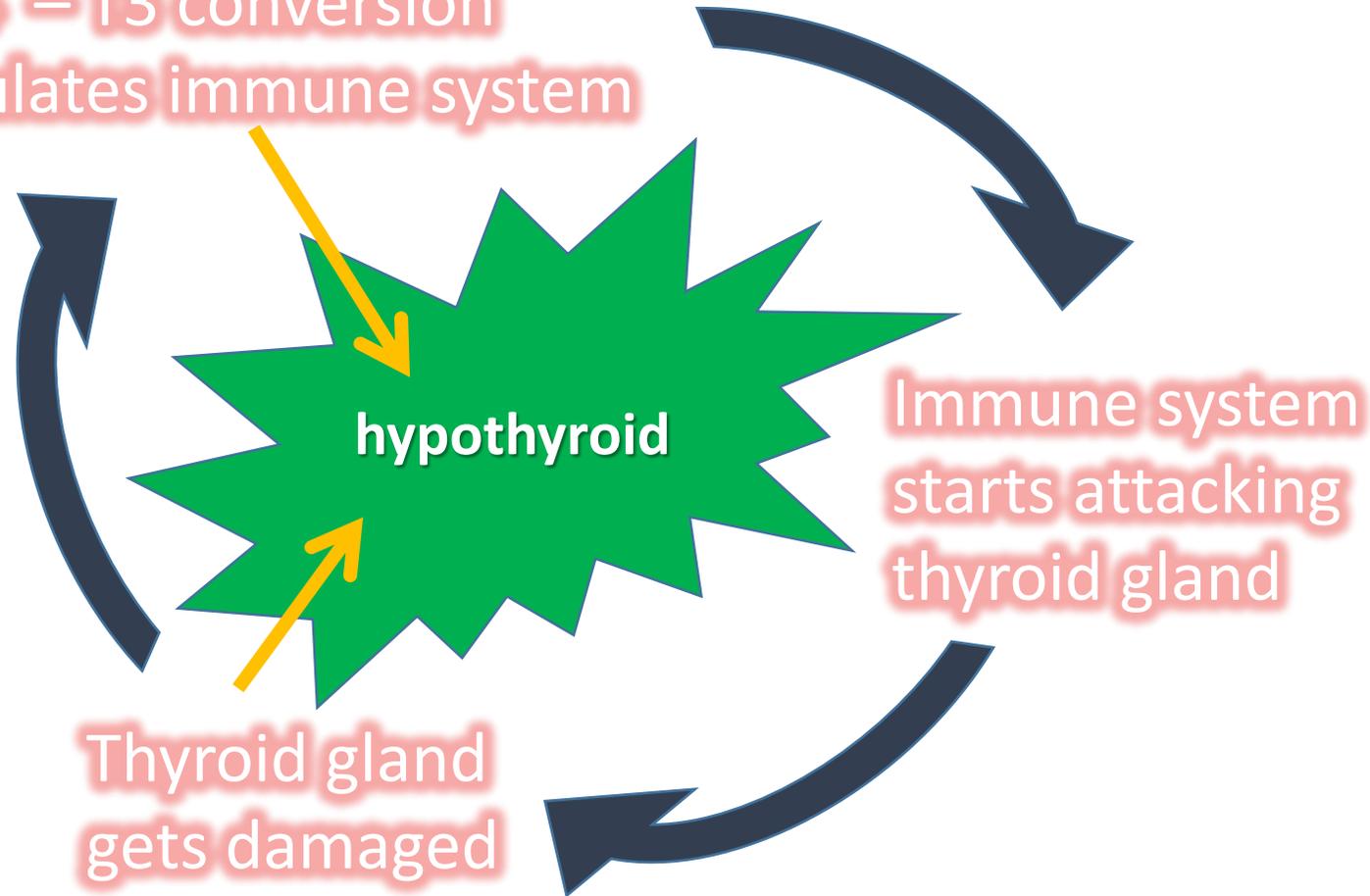
Clin Endocrinol (Oxf). 2004 Nov;61(5):650-2. PMID: 15521972

- 10 patients with Hashimoto's and an *H. Pylori* infection were studied.



## Gut inflammation;

- ↓ T4 – T3 conversion
- stimulates immune system



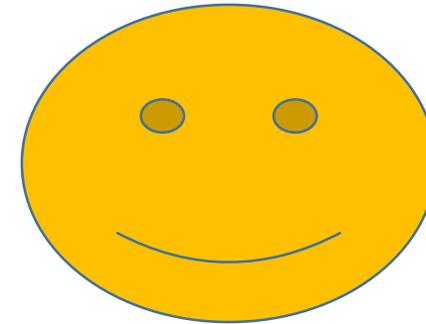
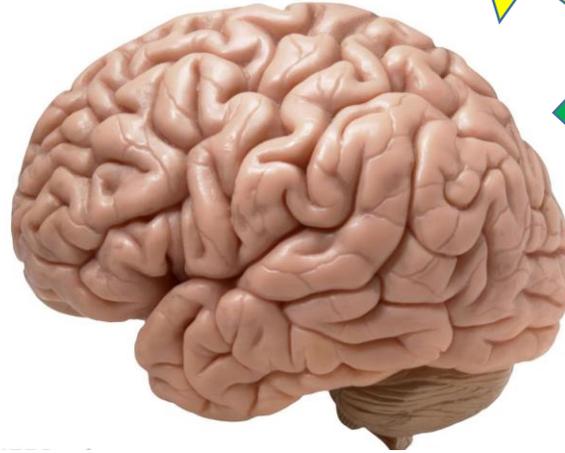


## Am I Inflamed?

The following all increase the chances of being inflamed

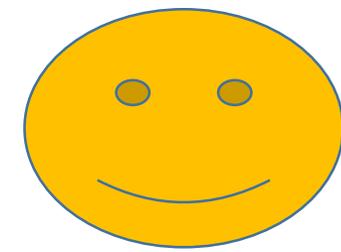
- Joint pain
- Muscle pain
- Any pain
- Gas
- Bloating
- Loose stools
- Depression, anxiety
- Drink too much
- Skin conditions
- Depression
- Headaches
- Get colds often
- Are overweight
- High blood pressure
- Smoke
- Eat junk food

**Tryptophan**



**Serotonin  
needed for  
TSH release**

**Normal Body**



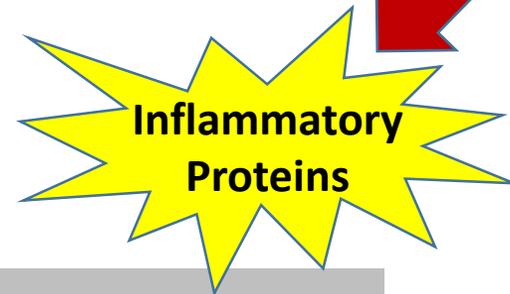
**Tryptophan**



**Tryptophan**

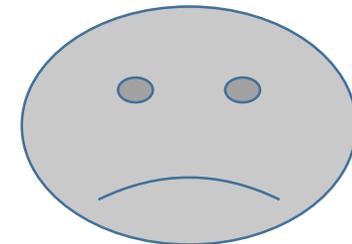


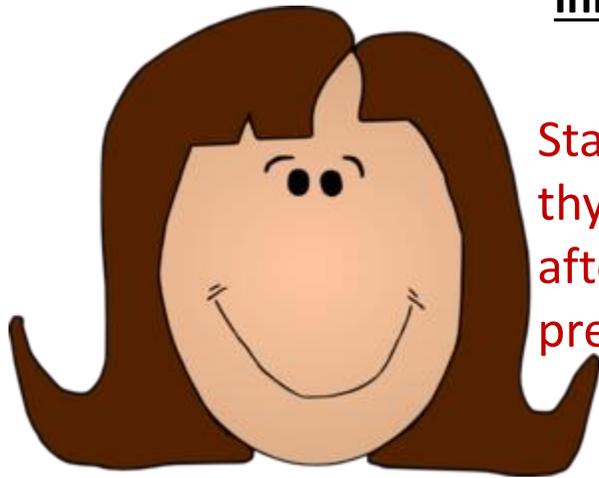
kynurenine



**Inflamed Body**

**Hypothyroid**



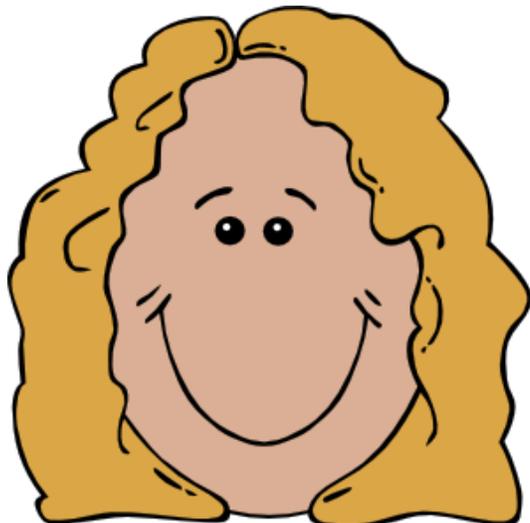


**Sarah - Hypothyroid**

Started having thyroid problems after her second pregnancy

Mentions her digestion is not as good as it used to be; gas, bloating and stomach burning on occasion. Started about 5 years ago.

**April - Hypothyroid**



Mentions her digestion is not as good as it used to be; gas, bloating and stomach burning on occasion. Started about 5 years ago.

Initial History

Labs & Diagnosis

Treatment

Elevated TPO anti-bodies; hashimoto's

Postpartum autoimmune hypothyroid

H. Pylori infection & high rT3

Infection induced high inflammation resulting in decreased thyroid hormone activation

Balancing of immune system to stop autoimmune attack.

Dietary changes  
Antioxidant therapy  
Vitamin therapy

Removal of infection and repair of gut

Anti-microbial herbs  
Vitamin therapy  
Probiotics

[Display Settings:](#)  Abstract[Send to:](#) [Horm Res.](#) 1999;51(3):124-7.

## Prevalence of coeliac disease in patients with thyroid autoimmunity.

[Valentino R](#), [Savastano S](#), [Tommaselli AP](#), [Dorato M](#), [Scarpitta MT](#), [Gigante M](#), [Micillo M](#), [Paparo F](#), [Petroni E](#), [Lombardi G](#), [Troncone R](#).

CNR, Experimental Endocrinology and Oncology Center (CEOS), Department of Cellular and Molecular Biology and Pathology, University Federico II, Naples, Italy.

### Abstract

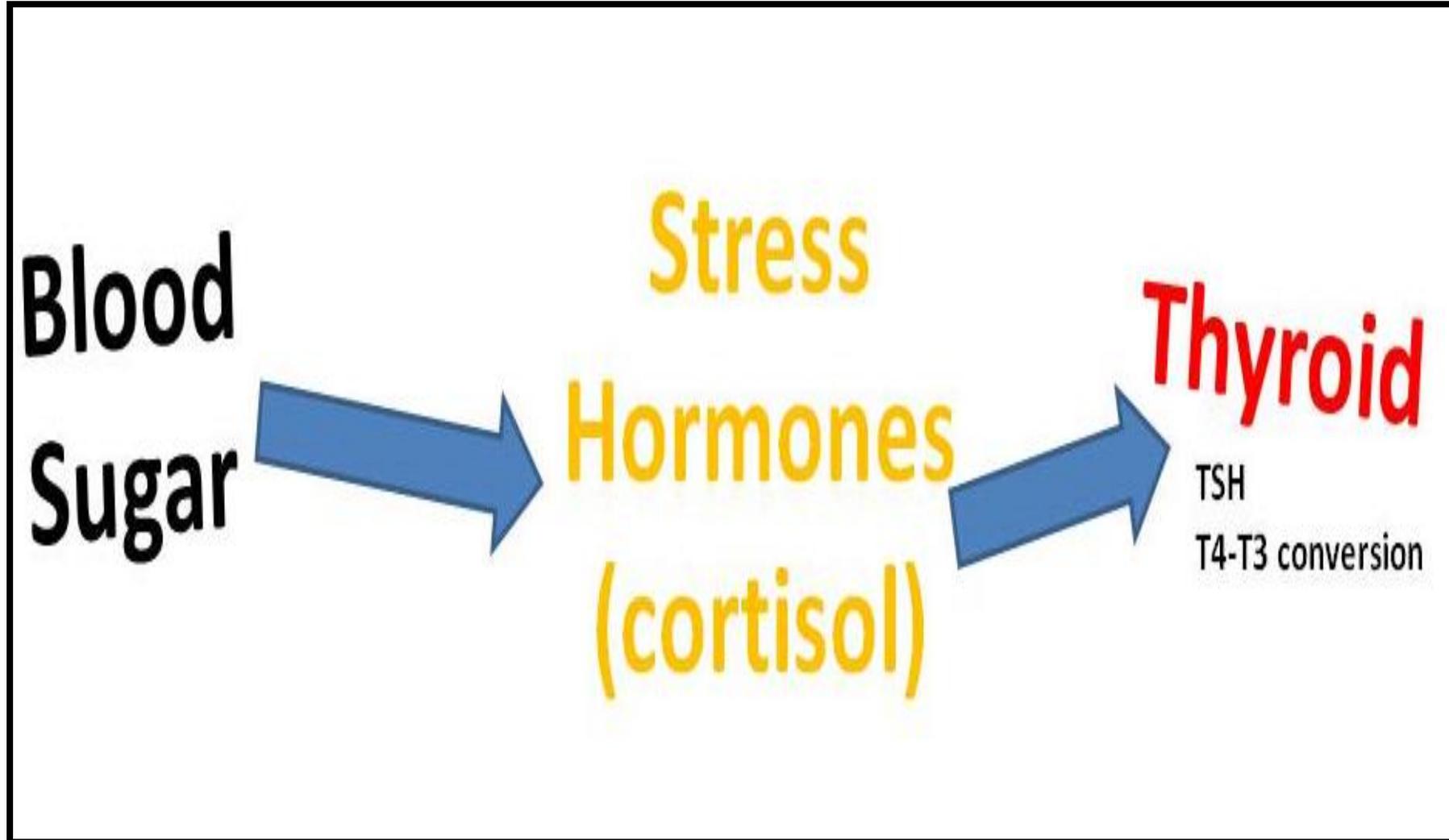
The occurrence of autoimmune thyroid disorders among patients with coeliac disease (CD) is well documented, but the exact prevalence of CD among patients with autoimmune thyroid diseases (ATD) is as yet unclear. We screened 150 newly diagnosed patients with ATD by serum endomysial antibody detection (EmA). In 5 subjects (3.3%) EmA positivity was found; all underwent jejunal biopsy. **On gluten-free diet an excellent clinical and histological response was recorded with an improvement of hypothyroidism and reduction of the thyroxine dosage.** Our data suggest a significant high prevalence (3.3%) of CD in patients with ATD, in particular with Hashimoto's thyroiditis.

PMID: 10461017 [PubMed - indexed for MEDLINE]

**“On gluten-free diet an excellent clinical and histological response was recorded with an improvement of hypothyroidism and reduction of the thyroxin dosage.”**



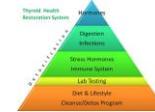
# Blood Sugar - Stress Hormones Connection





## Blood Sugar – Autoimmunity Connection

- High leptin worsens thyroid autoimmunity
  - Journal Clinical Endo & Metabolism 2010
- High leptin will also cause
  - Overeating
  - Weight gain
  - Cravings



## What Can You Do?

- Diet; gluten free and LOW iodine
- Stress hormones
- Sleep
- Clearing any infections (like fungus)
- Exercise
- Managing life stress



<http://www.ncbi.nlm.nih.gov/pubmed/26672672>

Proof of concept of the WOMED model of benign thyroid disease: Restitution of thyroid morphology after correction of physical and psychological stressors and magnesium supplementation.

- A small preliminary study has shown that magnesium, selenium and coenzyme Q10, taken together, can prevent and even reverse the structural damage that is often seen in the thyroid gland with thyroid autoimmunity.

## Is vitamin D related to pathogenesis and treatment of Hashimoto's thyroiditis?

- Vitamin D supplementation caused a significant decreased TPO antibodies. This is a significant finding because the literature on vitamin D supplementation in autoimmune conditions is sparse. Yes, we have association data, but not great treatment data. These results implicate low vitamin D as a cause and therefore potentially a treatment for thyroid autoimmunity.

# Thyroid Medications

- T4 only medications (synthetic)
  - Levothroid, Levoxyl, Synthroid, Unithroid
- T3 only medications (synthetic)
  - Liothyronine; cytometel
- T4/T3 combo medications (synthetic)
  - Liotrix; Euthroid, Thyrolar
- T4/T3 medications (bioidentical/natural)
  - Armour, Nature-Thyroid, Westhroid, Desiccated Thyroid



**Questions**



# Learning more....

- Tomorrow will be a much deeper dive on
  - Gut
  - Microbiota
  - And Thyroid
  
- Tickets available online at [ReFind Health](#)

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