Slide 1

THYROID AND THE GUT

Healthy Gut

Slide 2

- Like every other part of the body gut bacteria can affect the thyroid and how it functions
- The information is preliminary
- Much of it is linking thyroid issues with abnormal gut bacteria
- Also, like other areas of the body, the thyroid affects gut function
- So, it is quid-pro-quo relationship

Slide 3

The Gut Affecting The Thyroid

On the simplest level:

- Gut bacteria aids nutrient absorption so they play a fundamental role in ensuring that the thyroid receives what it needs to function
- Bacteria also can compete with the host for nutrients
- Selenium and zinc, essential for the uptake of iodine in the thyroid is also used by gut bacteria for their function
- Must have sufficient in the diet for both microbes and the body

Slide 4

Iodine

- Considered a potent antibacterial when applied topically
- Much speculation that it can kill good gut bacteria
- No evidence of any kind
- What happens outside does not happen inside
- Rat study showed that antibiotics lower thyroid function
- Good bacteria levels were lower after antibiotics as was iodine uptake in the thyroid

Slide 5

T4 to T3

- Active T3 is important
- Gut bacteria produces intestinal sulfatase that can convert T4 to T3
- About 20% of T3 is produced in the gut
- This appears to be well-absorbed into the body but may not be in it's fully active form when this occurs
- Sulfur is a key nutrient for the production intestinal sulfatase (garlic, onions, MSM)

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- The liver can take T4 and T3 for the blood and can return a portion of it back to the gut via the portal vein and attached to bile
- Bile can be converted by gut bacteria to bile metabolites that increase iodothyronine deiodinase essential for the conversion of T4 to T3

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Dybiosis

- LPS (lipopolysaccharide), produced by bad bacteria in the gut and released in the gut and body, affect thyroid hormones.
- Researchers wanted to see how endotoxins such as LPS affect the thyroid
- Eighteen people were injected with an endotoxin to observe the effect on TSH and T4. Although TSH levels were not affected, T4 levels decreased.
- Bad bacteria can take sulfur to produce hydrogen sulfide which plays a role in inflammation, gut motility may play a regulatory role but is dangerous at high levels.

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Thyroid to Gut

- Immune cells have thyroid receptors
- Thyroid hormones are essential to immune function and play a key role in regulating inflammation and cytokines
- They also play a role in maintaining gap junctions
- Lack of thyroid hormones leads to leaky gut and
- Thyroid deficiency has been link to all autoimmune conditions

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SIBO

- SIBO occurs when pathogenic bacteria normally found in the colon proliferates in the small intestines
- Some of this bacteria is found naturally in the ileum because of ileocecal valve
- Many hypothyroid people have symptoms of SIBO
- Constipation due to hypothyroidism may be a factor in SIBO
- SIBO may be a present before hypothyroidism
- Since protocol is not dissimilar to a dysbiosis/Candidiasis protocol

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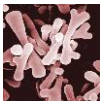
Hyperthyroidism

- In a human study Enterobacteriaceae, Enterococcus, Bifidobacterium, Clostridium, and Lactobacillus strain levels were compared between participants with hyperthyroidism and healthy controls
- Those with hyperthyroidism had lower levels of lactobacillus and bifidobacterium as well as higher levels of enterococcus than controls
- Support the idea that what strains are missing and what pathogenic bacteria are more prevalent determine health issue.



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Hypothyroidism

- Gut issues for lower thyroid function have been discussed
- Many with hypothyroidism have Hashimoto's – an autoimmune condition that is link to hypothyroidism
- Autoimmune has already been linked to poor gut health, dysbiosis and lack of T-Reg cells
- An autoimmune protocol for gut health is important for Hashimoto's along with nutrient and gut support for thyroid function

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Leaky Gut

- Does not lead to autoimmunity and therefore to Hashimoto's or any other auto immune conditions
- By now - we know about zonulin and the true nature of leaky gut
- We also know lack of immune tolerance is the true issue with autoimmunity
- So information linking leaky gut and Hashimoto's is flawed
- Lack of good gut bacteria is the issue

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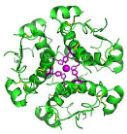
Other Influences

- Insulin and cortisol both have an effect on thyroid function and both have a gut health connection
- Supporting the adrenals and stabilizing blood sugar will be critical to aiding thyroid
- So is liver support
- This requires more typical support plus gut health work.



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Approach

- L. reuteri is one strain that may help support thyroid function but based on animal studies
- A better approach would be a cross-section of strains along with prebiotics as there are many gut factors
- It is important to understand why your client has gut issues (as best you can)
- Client Gut Health Avatar can be helpful

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Gut Issues

- Is it lack of diversity in the diet?
- Early childhood issues?
- Stress?
- Antibiotics or other drugs?
- Combination of factors?
- Important to work on all of these.

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Nutrients For The Thyroid

- Even if working on the gut, nutrients for the thyroid are also important
- Iodine with zinc and selenium
- Multi with Bs, EFAs
- Sea vegetables –arame, nori, dulse, kelp
- Coconut oil (empty stomach 1 tbsp melted in water) x 2/day
- Formulas – Thyroid Response (Innate), Thyrocare Restorative Formulations
- Glandulars – work very well – available in the US but not Canada

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Final Thoughts

- Restoring function to any system takes time
- If we stay focused on systems that are out of balance, then the clients is going to see some benefit
- We cannot at this time know we are restoring gut health sufficiently to change its affect on the thyroid
- We can work on dysbiosis and we can support the production of more gut bacteria
- And this will help