



## Type 1 Diabetes Associated Autoimmune Diseases: Autoimmune thyroid disease Celiac Disease

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## Type 1 Diabetes and other Autoimmune Diseases

- T1DM patients are at an increased risk for additional autoimmune diseases
- Among these, the most common are:
  - Autoimmune thyroid disease
  - Celiac disease

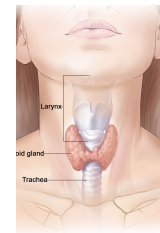


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## Autoimmune Thyroid Disease

- Most common autoimmune disease in those with T1D
- Up to 50% of individuals with T1D have thyroid autoantibodies.
  - ~50% of those with antibodies develop thyroid disorders within 3 to 4 years
- Includes:
  - Graves' disease
  - Hashimoto's thyroiditis




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## Hashimoto's Thyroiditis Symptoms


<p>Hypothyroidism</p> <ul style="list-style-type: none"> <li>• Fatigue</li> <li>• Weight gain</li> <li>• Pale or puffy face</li> <li>• Feeling cold</li> <li>• Joint and muscle pain</li> </ul>	<ul style="list-style-type: none"> <li>• Constipation</li> <li>• Dry and thinning hair</li> <li>• Depression</li> <li>• Slow heart rate</li> </ul> <p>Women</p> <ul style="list-style-type: none"> <li>• Heavy menstrual flow or irregular periods</li> <li>• Fertility problems</li> </ul>
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## Hashimoto's – diagnosis and treatment

- Diagnosis
  - Thyroid function tests (TSH, T4, T3)
  - TPO (thyroid peroxidase antibodies)
- Treatment
  - Medication: levothyroxine (Synthroid)




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## Grave's Disease Symptoms



<ul style="list-style-type: none"> <li>• <b>Hyperthyroidism</b> <ul style="list-style-type: none"> <li>• Irritability</li> <li>• Muscle weakness</li> <li>• Sleeping problems</li> <li>• Fast heartbeat</li> <li>• Poor tolerance of heat</li> <li>• Diarrhea</li> <li>• Weight loss</li> </ul> </li> <li>• <b>Thickening of the skin on the shins (pretibial myxedema)</b></li> </ul>		<ul style="list-style-type: none"> <li>• <b>Eye symptoms (25-80%)</b> <ul style="list-style-type: none"> <li>• Bulging</li> <li>• Dry eyes</li> </ul> </li> <li>• <b>Goiter</b></li> </ul>
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## Grave's Disease – diagnosis and treatment

- Diagnosis
  - Thyroid function tests (TSH, T4, T3)
  - Measurement of thyrotropin receptor antibodies
    - (TRAb, also called TSI, TBII, or TBI)
  - Radioactive iodine uptake
  - Ultrasound
- Treatment
  - Medication: Methimazole (in adults also Propylthiuracil (PTU))
  - Radioablation
  - Surgery

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## Celiac Disease

- Associated with other autoimmune diseases (type 1 diabetes, autoimmune thyroid disease)
- Celiac disease can develop at any age, but often presents in childhood
- Affects at least 1% of the general population
- 10% of people with type 1 diabetes will get celiac disease



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## What is Celiac Disease?

- Autoimmune disease, triggered by gluten that results in injury to the small intestine
- Certain genes (HLA-DR3) increase the risk of celiac disease
- Overall, the risk of celiac disease in a family member is about 10%
- It is recommended that all first-degree relatives get screening for celiac disease



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## Classic presentation: Gastrointestinal Manifestations (aka Gut symptoms)

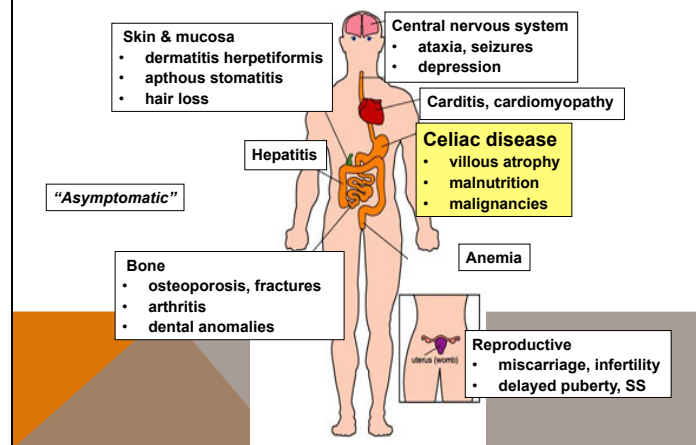
- Chronic or recurrent diarrhea
- Abdominal distension, pain
- Anorexia
- Failure to thrive or weight loss
- Vomiting, constipation
- Irritability



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## CELIAC DISEASE IS MORE THAN JUST A GUT PROBLEM



## Diagnosis of Celiac Disease

- Screening is done by an autoantibody test in the blood:
  - tissue transglutaminase autoantibody (tTG)
  - very sensitive test to screen for the *presence* of celiac disease or the likelihood of *developing* celiac disease
- Diagnosis is confirmed by endoscopy and biopsy of the small intestine



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## How is Celiac Disease treated?

- Celiac disease is treated by avoiding gluten in everything you eat:
- Strict avoidance (no “holidays” from the diet)
  - Lifelong treatment
  - Requires education by a skilled dietician
  - Requires follow-up by your doctor to monitor for response to the diet and for possible long-term complications



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## Conclusions

- People with T1D have a significant risk of other autoimmune disorders
- Providers should be on the lookout for symptoms
- Regular screening is recommended
- Treatment is available for these conditions and can prevent further complications



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