

Celiac Disease: The Gut, Brain & Body Connection

Evidence-Based Wholistic Gut Health

What is Gut Health?

5 criteria for a healthy GI system

- Effective digestion and absorption of _____
- Absence of GI _____
- Normal & stable _____
- Effective immune status
- Status of well-being

Our microbiome and intestinal barrier make up how we describe gut health – they work together to:

- Digest (and produce!) _____
- Promote a functioning _____
- Manage endocrine hormone production and secretion
- Keep our digestive tract & microbiome healthy

Signs of Gut Health Issues

- Diarrhea, constipation, or both
- Bloating and/or distension
- Gas
- Abdominal pain
- Unintentional weight loss
- Clay colored or mucousy stools
- Blood in stools

The Gut-Brain Connection

Celiac Disease & Mental Health

- Distress severity significant predictor of mental health
 - Better predictor of post-diagnosis well-being than: adherence, symptoms, and disease state
- Celiac disease
 - 2x increased risk of clinical depression
 - 6x increased risk of clinical anxiety
- Effects of chronic GI illness → visceral hypersensitivity

Self-Compassion

- Self-kindness vs. self-criticism
- Mindfulness vs. over-identification
- Common humanity vs. isolation

Celiac Disease: The Gut, Brain & Body Connection

Evidence-Based Wholistic Gut Health

Self-compassion tools that can help me when I am feeling distressed:

- The self-compassion break made me feel...

- Key words/phrases that help me during a self-compassion break...

Gut-Brain-Body Connection

- Microorganisms that inhabit an environment
- 100 trillion in human gut, over 1000 species
- Healthy gut = stable community + diverse microorganisms
- Gut health associated with chronic disease
- Influenced by diet, physical activity

Take Home Message

Gut-Brain Connection

- Practicing self-compassion on a regular basis can help you effectively cope with chronic digestive issues AND improve long-term well-being

Gut-Body Connection

- Regular exercise can improve digestive health (specifically reduce GI pain among adults with celiac), promote effective coping with chronic digestive issues and optimize long-term vitality

Wholistic Strategies to Cope During Difficult Times

1. Practice self-compassion
2. Movement
3. Activate your vagus nerve
4. Connect with doctor and/or dietitian
5. Work with a health coach

Celiac Disease: The Gut, Brain & Body Connection

Evidence-Based Wholistic Gut Health

Vagus Nerve Activation Strategies

1. Breath work
2. Salivating
3. Salamander

What do you want to try?

I will try/start/practice _____ to help me feel _____.

When will you start this practice? _____

How will you start this practice? _____

Who will hold you accountable? _____

Resources

- Self-compassion break
 - www.justinedowd.ca
- Meditation support
 - Self-compassion.org
 - Apps: Insight Timer, Calm
- Books
 - Gifts of Imperfection – Brene Brown
 - The Loving Diet – Jessica Brown
 - Self-compassion workbook – Dr Kristin Neff

Celiac Disease: The Gut, Brain & Body Connection

Evidence-Based Wholistic Gut Health

References

- Campbell, S. C., & Wisniewski, P. J. (2017). Exercise is a novel promoter of intestinal health and microbial diversity. *Exercise and sport sciences reviews*, 45(1), 41-47.
- Cook, M. D., Allen, J. M., Pence, B. D., Wallig, M. A., Gaskins, H. R., White, B. A., & Woods, J. A. (2016). Exercise and gut immune function: evidence of alterations in colon immune cell homeostasis and microbiome characteristics with exercise training. *Immunology and cell biology*, 94(2), 158-163.
- Codella, R., Luzi, L., & Terruzzi, I. (2018). Exercise has the guts: How physical activity may positively modulate gut microbiota in chronic and immune-based diseases. *Digestive and Liver Disease*, 50(4), 331-341.
- Chandrakumaran, H., Safdar, A., Sager, M., Nazli, A., & Akhtar, M. (2016). Regular exercise shapes healthy gut microbiome. *J Bacteriol Mycol Open Access*, 3(3), 251-253.
- Claesson et al. (2012). Gut microbiota composition correlates with diet & health in the elderly. *Nature*, doi:10.1038/nature11319
- Clappison, E., Hadjivassiliou, M., & Zis, P. (2020). Psychiatric manifestations of coeliac disease, a systematic review and meta-analysis. *Nutrients*, 12(1), 142.
- Codella et al. (2017). Exercise has the guts: How physical activity may positively modulate gut microbiota in chronic and immune-based diseases. *Dig Liver Dis*, 10.1016/j.dld.2017.11.016
- Dowd, A. J., & Jung, M. E. (2017). Self-compassion directly and indirectly predicts dietary adherence and quality of life among adults with celiac disease. *Appetite*, 113, 293-300.
- Dowd, A. J., Tang, K. T., Chen, M. Y., Jung, M. E., Mosewich, A., Welstead, L., & Culos-Reed, S. N. (2023). Improvements in self-compassion after an online program for adults with celiac disease: Findings from the POWER-C study. *Self and Identity*, 22(2), 197-226.
- Lima-Ojeda et al. (2017). "I Am I and My Bacterial Circumstances": Linking gut microbiome, neurodevelopment, and depression. *Frontiers in Psychiatry*, doi.org/10.3389/fpsy.2017.00153.
- Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of clinical psychology*, 69(1), 28-44.
- Neff, K. D. (2023). Self-compassion: Theory, method, research, and intervention. *Annual review of psychology*, 74, 193-218.
- Sánchez, B., Delgado, S., Blanco-Míguez, A., Lourenço, A., Gueimonde, M., & Margolles, A. (2017). Probiotics, gut microbiota, and their influence on host health and disease. *Molecular nutrition & food research*, 61(1), 1600240.
- Schmidt. (2015). Mental health: Thinking from the gut. *Nature*, 518, S12-S15. doi:10.1038/518S13a
- Schultz, M., Atherton, I., & Watson, A. (2015). Mindfulness-based cognitive therapy for inflammatory bowel disease patients: findings from an exploratory pilot randomised controlled trial. *Trials*, 16, 1-13.
- Thakur, E. R., Holmes, H. J., Lockhart, N. A., Carty, J. N., Ziadni, M. S., Doherty, H. K., ... & Lumley, M. A. (2017). Emotional awareness and expression training improves irritable bowel syndrome: A randomized controlled trial. *Neurogastroenterology & Motility*, 29(12), e13143.
- Tortora et al. (2015). Metabolic syndrome in patients with coeliac disease on a gluten-free diet. *Aliment Pharmacol Ther*. 41(4), 352-359. doi: 10.1111/apt.13062.
- Wilder-Smith et al. (2004). Brain functional magnetic resonance imaging of rectal pain and activation of endogenous inhibitory mechanisms in irritable bowel syndrome patient subgroups and healthy controls, *Gut*, 53(11) doi.org/10.1136/gut.2003.028514
- Wang, B., Yao, M., Lv, L., Ling, Z., & Li, L. (2017). The human microbiota in health and disease. *Engineering*, 3(1), 71-82.
- Warbeck, C., Dowd, A. J., Kronlund, L., Parmar, C., Daun, J. T., Wytsma-Fisher, K., ... & Culos-Reed, S. N. (2021). Feasibility and effects on the gut microbiota of a 12-week high-intensity interval training plus lifestyle education intervention on inactive adults with celiac disease. *Applied Physiology, Nutrition, and Metabolism*, 46(4), 325-336.