

Practice Protocol for Low Akkermansia Levels

Addressing low levels of *Akkermansia muciniphila*

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Disclaimer: The Pendulum team has created these protocols in collaboration with practitioners to help healthcare partners make decisions when building treatment plans. When using this protocol, you understand and accept that the recommendations in the protocol are for educational guidance only. This protocol is not a substitute for medical advice, and is not intended to diagnose, treat or prevent any medical disease. Please consult with your qualified medical professional to determine if this protocol is appropriate for you.

Description

Akkermansia muciniphila has appeared in over 3,000 scientific publications, and abundance has been associated with maintaining intestinal integrity. The primary function of *Akkermansia muciniphila* is to support healthy mucin layer turnover in the intestines, and thus strengthen the intestinal lining. Furthermore, *Akkermansia muciniphila* releases short chain fatty acids such as acetate and propionate, that support the abundance and diversity of other health-promoting microorganisms in the gut.¹

Metabolic dysfunction stems in part from an increase in permeability of the gut barrier, which separates contents of the gut lumen from peripheral circulation. When the gut barrier becomes too permeable, levels of circulating lipopolysaccharide (LPS) from Gram-negative bacteria increase, activating pro-inflammatory cytokines and leading to chronic low-grade inflammation², which is associated with both weight gain and higher fasting glucose levels.³ A major protective factor against gut barrier permeability is the layer of mucus coating the inner wall of the digestive tract, which provides a home for certain mucin-loving bacteria such as *Akkermansia muciniphila*. When *Akkermansia muciniphila* consumes mucin, the host compensates by continuing to produce more mucins, helping replenish this protective layer and thus enhancing the integrity of the intestinal barrier.⁴

Supplement and Dietary Plan

- Supplement with **Pendulum Akkermansia 500 Pro**: 1 capsule, once daily with food
 - For patients with undetectable levels of Akkermansia, continuing for 3-6 months may be necessary to repopulate the gut
- Encourage intake of polyphenols such as pomegranate, green tea, and grape seed⁵
 - Supplement as necessary with **Pendulum's Polyphenol Booster** to boost Akkermansia which may further enhance the benefits
- Encourage intake of prebiotic dietary fibers such as onion, chicory, garlic, asparagus, banana, and artichokes⁶
 - Supplement as necessary
- Consider supplementation with DHA/EPA to promote Akkermansia abundance⁷
- Consider the possibility of intestinal permeability and/or damaged mucosa especially with other microbiome test findings (low IgA, elevated zonulin)
- Consider a classic 5R protocol or 6R protocol

References

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