

Research Review

A BODYBIO PRACTITIONER NEWSLETTER

Welcome to the latest issue of the BodyBio Research Review. In line with our ongoing commitment, this carefully curated newsletter aims to keep healthcare practitioners up-to-date with the latest research in cellular health and wellness. Understanding the demands of your professional life, our clinical educators have distilled key insights from significant studies for your convenience. We trust you'll find the information valuable.

The Role of Butyrate in Cardiovascular Disease

In 2023, a phase II, randomized, placebo-controlled, double-blind cross-over trial aimed to find out if a special high-fiber prebiotic supplement called HAMSAB (High-amylose maize starch (HAMS), a type of resistant starch II that can be acetylated (HAMSA) and butyrylated (HAMSB)) could help lower blood pressure in people with untreated hypertension. Once fermented by intestinal flora, HAMSAB can produce large amounts of short-chain fatty acids (SCFAs) in the colon.

The researchers conducted a 3-week experiment with HAMSAB (40 g per day) on patients with essential hypertension and found that it effectively reduced blood pressure, both at home and over a 24-hour period. The supplement also changed the composition of the gut microbiome, increasing the presence of bacteria that produce SCFAs and raising SCFA levels in the bloodstream.

The reduction in blood pressure observed with HAMSAB was comparable to that achieved with traditional anti-hypertensive medications, suggesting that delivering SCFAs through supplementation could be a feasible way to lower blood pressure in people with essential hypertension.

However, the study acknowledges its limitations, such as a small sample size and the need for larger, longer-term trials to confirm these findings.

Another 2023 study looked at how the gut microbiome and its metabolites affect post-myocardial infarction (MI) recovery. The researchers first examined stool samples from 77 ST-elevation MI (STEMI) patients using 16S V3-V4 next-generation sequencing, metagenomics, and machine learning. Their analysis discovered an enriched population of butyrate-producing bacteria within one to three days of cardiac infarction.

During the study's next phase, researchers sought to validate this finding in eight non-human primates using a cardiac ischemia/reperfusion model. The researchers profiled the changes in the primate microbiome and discovered once again an increase in butyrate-producing bacteria. The investigators then proposed the hypothesis that butyrate may influence post-MI cardiac repair.

The researchers go on to test this hypothesis by inoculating mice with butyrate-producing bacteria and find that these mice can produce beta-hydroxybutyrate, a ketone body that can support cardiac function post-MI.

This was further confirmed using HMGCS2-deficient mice* which lack the endogenous ability to perform ketogenesis and generally have poor outcomes after cardiac insult. Inoculation with butyrate-producing bacteria increased plasma ketone levels and provided significant cardiac protection post-MI.

The researchers further elucidate this hypothesis by supplementing the mice with butyrate directly. Supplementing the mice with butyrate not only reduced post-MI infarct size, but also improved cardiac mechanical properties.

The study concludes that understanding the connection between gut bacteria, butyrate, and ketone bodies could be crucial for improving outcomes after an infarction, and these findings may be useful for future therapies.

The authors acknowledge several study limitations, including the relatively small human cohort size upon which they trained the machine learning model and the absence of patient dietary records highlighting the need for additional trials to confirm these initial findings.

HMGS2-deficient mice are deficient in endogenous ketogenesis and lack β -hydroxybutyrate. Therefore, any plasma β -hydroxybutyrate must be derived from the microbiota.*

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References:

1. Chen HC, Liu YW, Chang KC, et al. Gut butyrate-producers confer post-infarction cardiac protection. *Nat Commun.* 2023;14(1):7249.
2. Jama HA, Rhys-Jones D, Nakai M, et al. Prebiotic intervention with HAMSAB in untreated essential hypertensive patients assessed in a phase II randomized trial. *Nat Cardiovasc Res.* 2023;2(1):35-43.

FEATURED PRODUCT:

BodyBio Butyrate— Butyrate is an essential end product of a healthy microbiome. Primarily, it fuels your gut cells, strengthening the gut lining and healing leaky gut.* BodyBio Butyrate is available in two unique formulations: Calcium/Magnesium Butyrate and Sodium Butyrate.

Sodium Butyrate's Effect on GLP1 Signaling

Tune into Episode 121 of the Dr. Tyna Show featuring BodyBio's Chief Marketing Officer, Jessica Kane Berman, for an enlightening conversation on cellular membrane health and the natural enhancement of GLP1 production through Sodium Butyrate. In this podcast episode, they explore the critical importance of robust cellular health and its extensive impact on overall well-being. Discover the transformative power of BodyBio's supplements in promoting healthy blood sugar levels and metabolic vitality, and learn about the crucial need for cellular resilience in our increasingly toxic world. The discussion also navigates the intricate connection between gut and brain health and emphasizes the importance of a balanced diet for maintaining holistic health. Finally, dive into the world of essential fatty acids and understand their indispensable role in supporting cellular structure and function. Don't miss out on this compelling episode—[listen to the podcast here.](#)

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Have you or your patients experienced positive results from using BodyBio products? We'd be thrilled to hear your insights. By sharing your direct experience, you can assist others in reaching their health aspirations and supporting their wellness goals. Please email Ashley Palmer, NTP at apalmer@bodybio.com to share your testimonial.

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*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease