Diet and nutrition have a tremendous influence on health and disease. Dietary constituents can affect health and have been known to supplement with essential nutrients, minerals, and calories for physiological homeostasis. However, diet can also affect gene expression through epigenetic reprogramming or by altering the level of micronutrients. While a nutrigenomics study has delineated this causal link, a recent study published in EMBO Molecular Medicine by Grant et al., went a step further to establish that maternal intake of dietary fibers can alter the fetal gut microbiome, influencing the diversity of the intestinal bacterial flora, thereby affecting the gut-brain axis. Although the relationship between diet and fertility in males and females has been reported, the effect on postnatal life is not well documented. In this study by Grant et al. at the (Luxembourg Institute of Health, Esch-sur-Alzette, Luxembourg), the authors reported that selected feeding of fiber-free diets to pregnant mice alters the gut microbiome composition of their neonate pups depriving them of protective and beneficial commensal, Akkermansia muciniphila, a mucin-foraging bacterium. Further, these animals exhibited heightened immune activity by enriching defense response pathways and IL-22 expression. Therefore, the protective role of A. muciniphila is associated with its protection against chronic inflammation through TLR4 signaling. The author’s study has far-reaching conclusions on improving human health outcomes by the rational choice of food, drugs, and lifestyle to prevent gut dysbiosis and colonization of the right microbiome.

**REFERENCES**

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