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Happy New Year

The start of the new year is a good time to reflect on ways to change and improve, and we have decided to try a shorter monthly newsletter instead of a long quarterly one. Let us know what you think, and also if there are any topics you would like to see discussed. We want to be responsive to the interests and needs of our readers.

And we hope that the coming year brings improvements and healing to all of us contending with microscopic colitis.



Why Sugar Is a Problem for Microscopic Colitis Patients

Those of us who have been living with microscopic colitis (MC) for years are well aware that too much sugar in our diet can challenge our state of remission. We've long suspected that

this might be due to incomplete digestion of sugar, leading to the fermentation of partially-digested sugar in the colon, causing gas, cramps, and diarrhea.

Unfortunately, it now appears that the problem is much more serious. An interesting study funded by the Canadian Institutes of Health Research, Alberta Innovates, and the Canadian Association of Gastroenterology has been published. (1) Experiments with mice have shown that a diet high in sugar not only causes increased intestinal permeability (aka leaky gut), but it also interferes with the functioning of the immune system. Our experience as MC patients suggests that leaky gut and a compromised immune system are

almost always involved in the initial development of MC. The data from this research clearly indicate that MC patients (and other IBD patients) who eat significant amounts of sugar, may be risking a relapse of their respective disease.

In the experiment, wild-type mice were fed either a normal ration, or a high-sugar diet that contained 50 % sucrose (which is ordinary table sugar) and acetate (a source of short-chain fatty acids). Two days later, they were treated with dextran sodium sulfate (DSS), which is a standard laboratory method for provoking an inflammatory reaction in the colon when researching IBDs. When tissue samples from the colon were analyzed and compared, it was found that the mice on a high-sugar diet had increased intestinal permeability, reduced short-chain fatty acids, a decrease in gut bacteria diversity, and increased susceptibility to colitis. When given oral acetate, their leaky gut status (and their colitis) was significantly reversed.

This suggests that a high-sugar diet quickly promotes susceptibility to colitis, by reducing short-chain fatty acids, and causing leaky gut. Interestingly, this research project also indicated that restoration of short-chain fatty acids may be capable of preventing the increased susceptibility to the development of IBD in the presence of increased sugar in the diet. The fact that acetate alone substantially diminished the laboratory symptoms caused by the high-sugar diet suggests that short-chain fatty acids may play a critical role in how the gut responds to mistreatment patterns that are known to promote inflammatory bowel disease. It's possible that whether an IBD develops or the damaged tissue is simply repaired (by the immune system), may be determined by the level of short-chain fatty acids in the gut at the time of the insult. This appears to an interesting observation that warrants further research.

1. Laffin, M., Fedorak, R., Zalasky, A., Park, H., Gill, A., Agrawal, A., & Madsen, K. (2019). A high-sugar diet rapidly enhances susceptibility to colitis via depletion of luminal short-chain fatty acids in mice. *Scientific Reports* 9, 12294. Retrieved from <https://www.nature.com/articles/s41598-019-48749-2>



"Oh, it's alright. You couldn't know that I'm honey-intolerant."

THANK YOU

A big thanks to all who have contributed to the MC Foundation in the past year through Paypal and Amazon Smile. For those not aware of Amazon Smile, it is an easy way to contribute. Amazon gives 0.5% of any purchase to your designated charity, and the Microscopic Colitis Foundation is on their list.



Here's how to shop AmazonSmile:

1. Visit smile.amazon.com
2. Sign in.
3. Find and then select the Microscopic Colitis Foundation to receive donations.
4. Start shopping!
5. Add a bookmark for smile.amazon.com to make it even easier.

For those who use eBay, the following link can be used to make donations to the Foundation or to attribute the proceeds from designated sales to the Foundation.

<https://charity.ebay.com/charity/Microscopic-Colitis-Foundation/176927>

And finally, if you find that the newsletters are ending up in your spam folder, here is a link on how to "whitelist" and avoid that happening.

<https://www.microscopiccolitisfoundation.org/how-to-make-sure-our-newsletters-dont-go-to-a-spam-filter.html>

