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Prebiotics may keep students healthy during stressful periods

By Stephen Daniells, 26-May-2011

Related topics: Probiotics and prebiotics, Gut health, Immune system, Research, Prebiotics

Daily supplements of prebiotic fibers may boost the immune system and gut health during periods of heightened stress, suggests a new study with students at exam time.

A daily dose of 5.0 grams of the commercially available Purimmune prebiotic product from GTC Nutrition was associated with a 40 percent reduction in the number of days with cold or flu, according to findings published in the *American Journal of Clinical Nutrition*.

In addition, the prebiotic supplement – based on galactooligosaccharides – was also associated with a reduction in the occurrence of gut upsets in students around the time of fall final exams.

"This study provides new information on the benefit of galactooligosaccharides on gastrointestinal and immune health outcomes in apparently healthy young adults undergoing an academic stress," wrote researchers from the University of Florida.

"To our knowledge this was the first study to show a benefit of galactooligosaccharides, a prebiotic, on modulating stress-induced gastrointestinal dysfunction in adults," they added.

Prebiotics

The study adds to the ever-growing body of science supporting the potential health benefits of prebiotics, defined as *"non-digestible (by the host) food ingredients that have a beneficial effect through their selective metabolism in the intestinal tract"* (Gibson et al. 2004).

The new study was funded by GTC Nutrition, a business unit of Corn Products International, and the company also provided the ingredient tested.

The Purimmune branded ingredient was launched in 2008. The ingredient is a 90 percent prebiotic GOS and is said to be *"stable in extreme processing conditions"*, including high temperature and low pH.

Juilana Zeiher, business development manager, Purimmune, Corn Products International, told NutraIngredients-USA that the company was *"excited by the results"*.

"This study with Purimmune GOS is the first demonstration of GOS efficacy to support the immune system in a stressed, adult US population," added Zeiher.

"These results may have significant relevance for those companies formulating foods or beverages to support the immune system ."

Study details

Led by UFL's Bobbi Langkamp-Henken, PhD, RD, the researchers recruited an impressive 427 college students to participate in their prospective, randomized, parallel, double-blind, placebo-controlled trial.

Students were randomly assigned to receive 0, 2.5, or 5.0 grams of the prebiotic supplement for eight weeks before, during, and after final exams.

Results for the 419 people who completed the study showed that symptoms of gastrointestinal problems, including diarrhea, constipation, indigestion, and abdominal pain were significantly reduced following prebiotics supplementation.

While a 40 percent reduction in days with cold or flu was observed for normal-weight individuals receiving the 5.0 gram prebiotic supplement, no effect was observed in overweight or obese individuals.

Commenting on this observation, the researchers note that studies have shown that the gut microbiota differs between obese and lean individuals, with obese individuals reported to have fewer bifidobacteria, for example.

"If galactooligosaccharides improved gastrointestinal and immune function by changing the microbiota, then it is possible that we would observe different effects in individuals within different [body mass index] categories," said the researchers.

"Future studies should determine the mechanisms by which galactooligosaccharides improve health outcomes within the brain-gut-enteric microbiota axis, because these findings may have wide applicability beyond academic stress," they concluded.

Source: *American Journal of Clinical Nutrition*

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"Galactooligosaccharide supplementation reduces stress-induced gastrointestinal dysfunction and days of cold or flu: a randomized, double-blind, controlled trial in healthy university students"

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