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Trehalose Sugar Impacts Growth of Baby Chicks

Research shows that Trehalose may improve natural intestinal immunity in baby chicks

Glycoscience Lesson #40

by JC Spencer

How can the sugar Trehalose help weight gain in baby chicks, fat loss in obese men, and lower fats in the liver?

A study published in *British Poultry Science* 2016 March 17 may inch us toward solving the mystery.

In previous Lessons, we have learned how fat cells in obese men are positively affected by Trehalose and the important role that glycolipids play as signaling molecules inside the cell.

Lipids (as high triglycerides) block glucose and fat conversion to energy. However, when certain sugar building blocks are added, glycolipids help transfer glucose and fats through the liver. This results in a healthier liver, superior body functions, and health.

Now comes fascinating research from Tohoku University that indicates Trehalose effects significant growth performance of baby chicks while there was no observed increase in the levels of lipid peroxidation in skeletal muscle, liver, and plasma. Increasing growth while not increasing oxidation of lipids is important because it leads to healthier lean tissue.

It appears to me that lipid peroxidation may be the tipping point for many diseases especially in infants as free radicals damage membrane lipids and eventually tissue. This chain-reaction may implicate many diseases, especially neurological diseases.

Abstract as published: Br Poult Sci. 2016 Mar 17. [Epub ahead of print]

Effects of trehalose supplementation on the growth performance and intestinal innate immunity of juvenile chicks.

Kikusato M¹, Nanto F¹, Mukai K², Toyomizu M¹.

1. Trehalose is composed of two molecules of D-glucose joined by an α, α -1,1 glucosidic linkage, and has antioxidative and anti-inflammatory

effects. The present study investigated the effect of feeding a trehalose-supplemented diet on the growth performance, as well as the oxidative status and the intestinal innate immunity of juvenile chicks. 2. A total of 24 d-old male broiler chicks were used in this study: two groups of 8 birds were fed on a 0% (control) or 0.5% trehalose-supplemented diet for 18 d. 3. The mean body weight of the trehalose group was significantly greater than that of the control group, but feed efficiency was not altered by feeding the trehalose-supplemented diet. No differences in the levels of lipid peroxidation in skeletal muscle, liver and plasma were observed between the control and trehalose-supplemented groups. The mRNA levels of interferon- γ , tumour necrosis factor-like ligand 1A, interleukin-10, NADPH oxidase 4 and inducible NO synthase were significantly reduced by the trehalose supplementation. 4. Our results suggest that dietary supplementation with trehalose after hatching may have beneficial effects on the growth performance of juvenile chicks, probably by improving their intestinal innate immunity.

(End of Abstract)

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Smart Sugars and Your Triglyceride Battle by JC Spencer August 2012
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<http://www.ncbi.nlm.nih.gov/pubmed/?term=Trehalose+obese+men>

Expand Your Mind - Improve Your Brain
<http://www.endowmentmed.org/content/view/826/106/>

Change Your Sugar, Change Your Life
<http://DiabeticHope.com>

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<http://www.GlycoscienceNEWS.com/pdf/Lesson40.pdf>

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