

Sugar and Macular Degeneration

What we eat affects our health and our vision. Certain foods are designated as 'eye healthy' because they contain useful nutrients to the eye like the omega 3 found in salmon, or the beta-carotene in spinach.

Other foods increase the risk for and progression of disease. Foods high in carbohydrates or sugar have become the focus of eye researchers. The glycemic index (GI) indicates how fast blood glucose is raised after consuming a carbohydrate-containing food. Diabetes and other medical conditions occur when the blood glucose is too high (hyperglycemia). Macular degeneration (AMD) also seem to be affected by the blood glucose variability.

Nutrition scientists fed one group of mice likely to develop AMD a high-GI diet while another group was fed a low-GI diet. Mice fed the high-GI diet developed signs of retinal disease, and when their diets were switched to low-GI, signs of AMD were reversed. In mice, low-GI diets seemed to offer protection against AMD, and the researchers proposed that humans could also benefit from some simple diet modifications.

Senior scientist Dr. Allen Taylor, PhD, studies the effect of sugar and carbohydrate intake on eye health at the Laboratory for Nutrition and Vision Research at Tufts University. As digestion takes place, the gut breaks down food, producing useful compounds like glucose which are absorbed into the bloodstream. When food that has a high concentration of sugar or

starch (a high glycemic diet) is broken down in the stomach, sugar is delivered very quickly into the bloodstream. Scientists have suggested that the 'sugar rush' that comes from these glycemic peaks may cause retinal damage and be a factor in AMD. In a low glycemic diet, the gut needs to work harder to break down the meal. Digestion takes longer and so there is no spike of glucose released into the bloodstream.

What are some of the foods to avoid? Processed foods and starchy foods like french fries, white bread, white rice, and sugary foods like donuts, cakes, and sodas.

What are some elements of a low glycemic diet? Brown rice, rye or whole grain bread, corn, lentils, sweet potatoes and rolled or steel cut oatmeal.



Dr. Taylor and his colleagues have suggested that these diet changes are easy to accomplish, “Simple replacement of small amounts of high index foods (such as white bread) with lower-index foods (such as whole grain bread) can significantly reduce glycemic peaks without requiring a change in overall dietary patterns.”

To learn more about a low-glycemic index diet, visit:

<https://www.healthline.com/nutrition/low-glycemic-diet>

Reference: Rowan S et al, Involvement of gut-retina axis in protection against dietary glycemia-induced age-related macular degeneration, Proc Natl Acad Sci USA 114:E4472-4481, 2017.