Carbohydrate Quality, AMD Vision Loss Linked

New research confirmed early findings that age-related macular degeneration (AMD) and its associated vision loss may be connected to the quality of carbohydrates a person consumes.

A study, published in the *American Journal of Clinical Nutrition*, confirmed earlier findings linking dietary glycemic index with the risk of developing AMD. "Men and women who consumed diets with a higher glycemic index than average for their gender and age-group were at greater risk of developing advanced AMD," said author Allen Taylor, PhD, director of the Laboratory for Nutrition and Vision Research at the Jean Mayer USDA Human Nutrition Research Center on Aging (USDA HNRCA) at Tufts University. "The severity of AMD increased with increasing dietary glycemic index."

The glycemic index is a scale applied to foods based on how quickly carbohydrates are converted to glucose. High glycemic-index foods, such as white rice, pasta, and bread, are associated with a faster rise and subsequent drop in plasma glucose levels. Whole wheat rice, pasta, and bread, on the other hand, have a low glycemic index. Nutrition experts said that whole wheat foods are considered higher quality carbohydrates because they are associated with a slower and less dramatic rise and fall of blood sugar.

"Our results build upon findings from an earlier, smaller study in which we determined that consuming a diet with a high glycemic index, but not one with a high total amount of carbohydrate, increased the risk of developing early AMD," said coauthor Chung-Jung Chiu, DDS, PhD, a scientist in the Laboratory for Nutrition and Vision Research at the HNRCA and an assistant professor at Tufts University School of Medicine.

In the current study, Drs. Taylor, Chiu, and colleagues analyzed data from 4,099 men and women participating in the Age-Related Eye Disease Study (AREDS). Investigators obatined detailed dietary histories at baseline, when participants were aged 55 to 80 years and had varying degrees of AMD. AREDS was designed to assess the effect of high-dose antioxidant vitamins and zinc on the progression of AMD and cataracts, two of the leading causes of vision loss in older adults.

"Although carbohydrate quality was not the main focus in AREDS, we were fortunate that the investigators had collected the dietary carbohydrate information we needed to do our analyses," said Dr. Taylor, who is also a professor at the Friedman School of Nutrition Science and Policy at Tufts and the Tufts University School of Medicine. "Our findings suggest that 20% of the cases of advanced AMD might have been prevented if those individuals had consumed a diet with a glycemic index below the average for their age and gender."

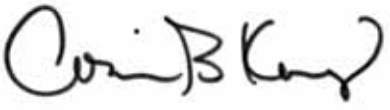
Investigators increasingly believe dietary intervention may delay AMD progression. Identifying modifiable risk factors for AMD is becoming more urgent as the population ages, according to a Tufts news release. Dr. Taylor and colleagues note the number of people in the United States with visually impairing AMD is expected to double and reach 3 million by 2020.

"Our results support our hypothesis that dietary glycemic index, which has been related to the risk of diabetes, is also associated with the risk and severity of AMD," Dr. Taylor said. He speculated that carbohydrates that comprise a high glycemic-index diet may provide eye tissue with too much glucose too quickly, and overwhelm the ability of the eye cells to use the carbohydrate properly.

"It is possible that the type of damage produced by poor quality carbohydrates on eye tissue is similar in both diabetic eye disease and AMD," the investigators said.

Dr. Taylor and colleagues wrote that the risk for AMD may be diminished by improving dietary carbohydrate quality, as defined by dietary glycemic index. This may be achieved by relatively simple dietary alterations, such as replacing white bread with whole grain bread.

"Additional studies are needed before we can recommend dietary carbohydrate management as a prevention strategy for AMD," the investigators said. ■



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