

Pigment in the eye found to be key between obesity, vision loss

April 26 2013, by Alan Flurry

"Eat your veggies" has been an admonition of parents through the ages, but newly published brain research from the University of Georgia provides one of the best reasons why.

Lutein, the organic pigment that gives [fruits and vegetables](#) their color, is a powerful antioxidant that concentrates highly in the [human brain](#) and retina, particularly in the eye's macular area. Lutein prevents the oxidation of fat in these areas to maintain the health of the brain and eyes while its absence leads to [macular degeneration](#), the leading cause of blindness in the U.S.

This [symbiotic relationship](#) is documented in a new study from the Vision Sciences Laboratory in the Franklin College of Arts and Sciences department of psychology published in the journal *Nutrients* in March.

"For years people have forgotten that our brain, along with the rest of our bodies, is composed of our diet," said Billy Hammond, a UGA professor in the brain and [behavioral sciences](#) program and the study's co-author. "Diet and exercise have a very big influence on how the brain ages and many other basic processes that encourage degeneration, and how our brain protects itself from that is by concentrating antioxidants like lutein in these particular areas."

Hammond, who has published extensively on the nutritional issues of vision development and function, says the relationships between body fat, the brain and antioxidants remain very poorly understood, including

highly publicized benefits of fatty acids like omega-3.

"Humans are the great symbiotes of nature, and our biology is based on symbiosis with other microorganisms," he explained. "Basic processes like oxidative stress and inflammatory stress occur very largely in the brain, so even these [polyunsaturated fatty acids](#) like omega-3 need to co-localize with an antioxidant like lutein."

The wider messages of intuitive connections between diet, function and aging are both long-held truths and among the most difficult to reconcile with modern life, he said.

"From protecting nervous tissue to preventing degenerative conditions in our brain and other organs, diet and vigorous exercise have by far the most influence on preventing late stage diseases as we age as well as making enormous changes to our biology right now," Hammond said.

More information: www.mdpi.com/2072-6643/5/3/750

Provided by University of Georgia

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