

Beating blindness with vegetable oil

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Scientists working at the Research Center on Aging at the Health and Social Services Centre—University Institute of Geriatrics of Sherbrooke (CSSS-IUGS) have been studying strategies for protecting retinal pigment epithelium (RPE) cells. Dysfunction of the RPE is found in retinopathy and age-related macular degeneration, which is the leading

cause of blindness of elderly people in developed countries.

Findings published today in the *Canadian Journal of Physiology and Pharmacology* suggest that incubating [retinal cells](#) with vegetable oils induces biochemical and biophysical changes in the cell membrane, which may have a beneficial effect in preventing or slowing the development of retinopathy.

"Membrane fluidity, which refers to the viscosity of the lipid bi-layer of a cell membrane, is a marker of the cell function," explained Prof. A. Khalil, professor at the Université de Sherbrooke and principal investigator of the study. "A decrease of membrane fluidity can affect the rotation and diffusion of proteins and other bio-molecules within the membrane, thereby affecting the functions of these molecules. Whereas, an increase in membrane fluidity makes for a more flexible membrane and facilitates the transmission of light through the eye."

The researchers discovered that vegetable oil fatty acids incorporate in [retina cells](#) and increase the plasma membrane fluidity. They concluded that a diet low in trans-unsaturated fats and rich in omega-3 fatty acids and olive oil may reduce the risk of retinopathy. In addition, the research suggests that replacing the neutral oil used in eye drops with oil that possesses valuable biological properties for the eye could also contribute to the prevention of retina diseases.

More information: This article "Effects of vegetable oils on biochemical and biophysical properties of membrane retinal pigment epithelium cells" is published today in the *Canadian Journal of Physiology and Pharmacology*. [DOI: 10.1139/cjpp-2013-0036](https://doi.org/10.1139/cjpp-2013-0036)

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