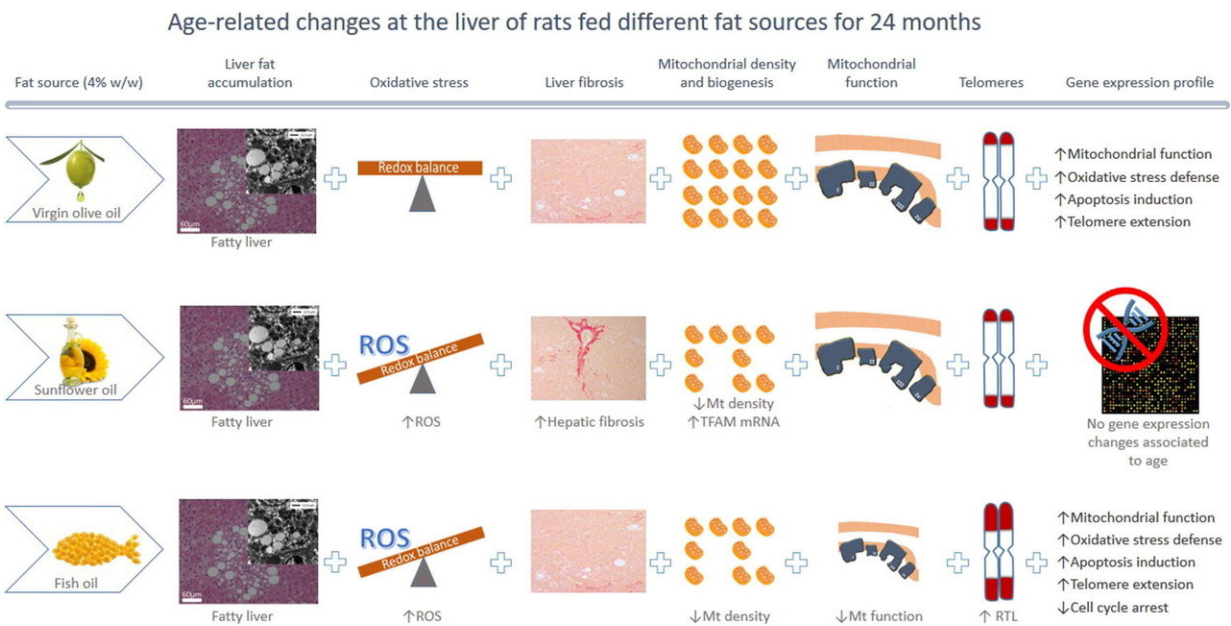


Long-term consumption of sunflower and fish oils damages the liver

January 31 2018



Credit: University of Granada

An international group of scientists led by the University of Granada (UGR) has demonstrated that the long-term intake of sunflower or fish oils damages the liver and can give rise to non-alcoholic steatohepatitis (NASH).

NASH, which causes inflammation of the [liver](#) that is not caused by alcohol abuse, is a very serious condition and can act as a catalyst for the

onset of other diseases such as cirrhosis and [liver cancer](#). Its prevalence in the general population increases with age. It affects 1 percent to 3 percent of children, 5 percent of teenagers, 18 percent of those aged between 20 and 40, 39 percent of those aged between 40 and 50, and more than 40 percent of those over 70.

The research, recently published in the *Journal of Nutritional Biochemistry*, analysed how the long-term consumption of dietary fat sources such as olive, sunflower and [fish](#) oil affects the livers of rats. UGR researchers conducted a series of comprehensive analyses, including studies of pathological anatomy, ultrastructural analyses using electron microscopes, sophisticated bioenergy techniques, [telomere length](#) measurements, and oxidative stress. Most importantly, they conducted a comprehensive study of the liver genome in order to establish how it evolved in line with the consumption of the different oils.

As José Luis Quiles Morales, Full Professor of Physiology at the UGR explains: "[the research] demonstrates that fat accumulates in the liver with age, but the most striking finding is that the type of fat accumulated differs depending on the oils consumed, which means that regardless of this accumulation, some livers age in a healthier way than others, and with a greater or lesser predisposition to certain diseases."

Three dietary fats ([virgin olive oil](#), sunflower oil and fish oils) were studied, and virgin olive oil was shown to be the best of the three for preserving the liver throughout life. The research also revealed that [sunflower oil](#) induced fibrosis, ultrastructural alterations, gene expression blockades and high oxidation. Meanwhile, [fish oil](#) intensified oxidation associated with aging, lowered mitochondrial electron transport chain activity and altered relative telomere length. Telomeres are the ends of chromosomes, the shortening of which can cause cell ageing and the lengthening of which can cause cancer.

"The alterations caused by the long-term consumption of sunflower and fish oils make the liver susceptible to non-alcoholic steatohepatitis, a very serious [disease](#) that may act as a catalyst for other liver diseases such as cirrhosis and liver cancer," Prof. Quiles notes. In light of the results, he also says, "Virgin olive oil is the healthiest option, which has already been proven in relation to diverse aspects of health."

According to Prof. Quiles, the most innovative aspect of this study is "how it reveals the mechanisms by which virgin olive oil provides these benefits and why the over-consumption of other [dietary fats](#) is dangerous. We believe that this study will be very useful in preventing and treating diverse liver diseases."

More information: Alfonso Varela-Lopez et al. Gene pathways associated with mitochondrial function, oxidative stress and telomere length are differentially expressed in the liver of rats fed lifelong on virgin olive, sunflower or fish oils, *The Journal of Nutritional Biochemistry* (2017). [DOI: 10.1016/j.jnutbio.2017.09.007](https://doi.org/10.1016/j.jnutbio.2017.09.007)

Provided by University of Granada

Citation: Long-term consumption of sunflower and fish oils damages the liver (2018, January 31) retrieved 27 April 2024 from <https://medicalxpress.com/news/2018-01-long-term-consumption-sunflower-fish-oils.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
