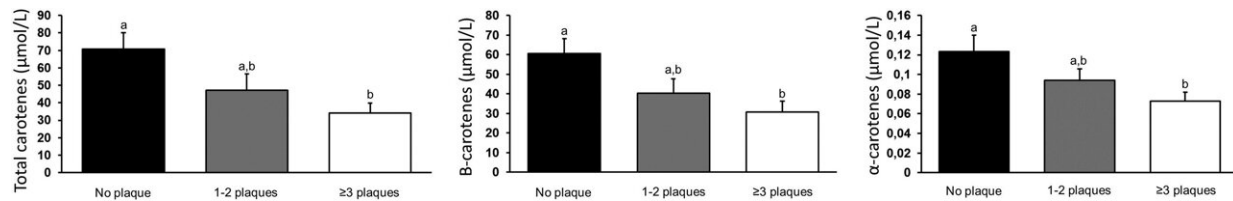


Carotene-rich diet linked to lower fat levels in arteries

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Concentration of plasma carotene according to atherosclerotic plaque burden. Results are expressed as mean + sd. Columns with different superscript letters denote significant differences (from the ANOVA analysis with the Bonferroni post-hoc test). No plaque, n = 70; 1–2 plaques, n = 81; and ≥3 plaques, n = 53. Credit: *Clinical Nutrition* (2023). DOI: 10.1016/j.clnu.2023.05.005

A high level of carotenes in the blood is linked with a lower degree of atherosclerosis in the arteries and thus a lower risk of cardiovascular diseases. These are the conclusions of a new study by a team of researchers from IDIBAPS and the UOC, published as open access in *Clinical Nutrition*.

The work was headed by Gemma Chiva Blanch, of the IDIBAPS Translational research in diabetes, lipids and obesity group, led by Josep Vidal. Chiva Blanch also forms part of the CIBEROBN research center and is an associate professor and researcher at the Faculty of Health Sciences of the Universitat Oberta de Catalunya (UOC).

Atherosclerosis and cardiac risk

Atherosclerosis is the build-up of fat, generally the LDL or "bad" type of cholesterol, on the inner walls of the blood vessels. This build-up, in the form of atherosclerotic plaques, causes a narrowing of the vessel's internal diameter, thereby hindering the blood's circulation.

Furthermore, these plaques can rupture and form clots that obstruct the [blood flow](#), which can lead to myocardial infarctions (heart attacks), when the blood doesn't reach the heart, or ischemic strokes, when it doesn't reach the brain.

The role of carotenes

It's no secret that diet plays a key role in cardiovascular diseases. Carotenes are [bioactive compounds](#) found in yellow, orange and green fruits and vegetables, such as carrots, spinach, lettuce, tomatoes, [sweet potatoes](#), broccoli, cantaloupes, bell peppers, mangoes, papayas, apricots, loquats and pumpkins. Carotenes are potentially capable of checking atherosclerosis.

"However, the studies carried out to date have not been conclusive and it even appears that, when administered as a supplement, they have a prejudicial effect," explained Chiva Blanch.

The article looked at 200 people aged between 50 and 70 forming part of the DIABIMCAP cohort and recruited by the IDIBAPS Primary healthcare transversal research group, led by Antoni Sisó Almirall. The [volunteers](#) taking part in the study were analyzed with regard to two parameters: the concentration of carotenes in the blood and, by means of ultrasound imaging, the presence of atherosclerotic plaques in the carotid artery.

"The study concludes that the greater the concentration of carotenes in the blood, the lesser the atherosclerotic burden, particularly in women. [...] So, we can confirm that a diet rich in fruit and vegetables and thus in carotenes lowers the risk of suffering from cardiovascular diseases," said Chiva Blanch.

More information: Francesc Bujosa et al, Total carotene plasma concentrations are inversely associated with atherosclerotic plaque burden: A post-hoc analysis of the DIABIMCAP cohort, *Clinical Nutrition* (2023). [DOI: 10.1016/j.clnu.2023.05.005](https://doi.org/10.1016/j.clnu.2023.05.005)

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