

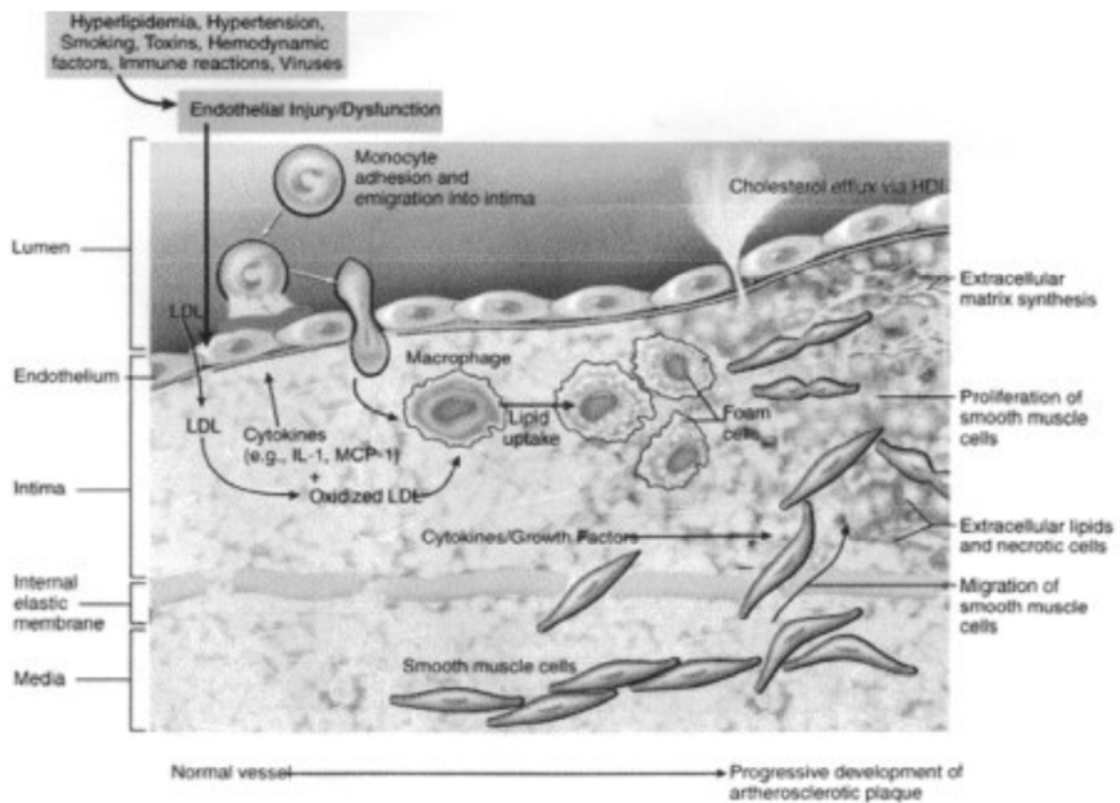
## BENEFITS OF THE CONSUMPTION OF EXTRA VIRGIN OLIVE OIL

Extra virgin olive oil (AOVE, based on its initials in Spanish), an integral part of the Mediterranean diet, plays a major role in lipid oxidation, preventing the development of atherosclerosis.

Low-density lipoproteins (LDL) are responsible for transporting cholesterol in the blood. The oxidation of lipids (of the LDL lipoprotein bound to cholesterol) favours the formation of atheroma plaques in the arteries and leads to the hardening and obstruction of these blood vessels, decreasing cardiac or cerebral blood flow.

Polyphenols (substances with one phenol group per molecule) are minor components of AOVE. They reduce the oxidation of lipids and protect from atherosclerosis, safeguarding the LDL from oxidative damage. The Picual olive variety has the highest concentration of polyphenols.

In atherosclerosis, lipid peroxidation occurs, affecting the macrophage and monocyte receptors with cholesterol deposits, and causing an inflammatory reaction and a proliferation of smooth muscle cells of the wall. This leads to the formation of atheroma which result in a narrowing of the arterial lumen (see the figure below).



Pathogenesis of atherosclerosis. Robbins & Cotran. Structural and Functional Pathology (4)

Therefore, the benefits of AOVE are well-known:

Decrease of cardiovascular risk

Reduction of LDL cholesterol oxidation (bad cholesterol) and increase of HDL cholesterol (good cholesterol), given its antioxidant action

Decrease in blood pressure

Decrease in thrombosis and inflammation

Protects from cognitive degeneration

Reduces the incidence of certain cancers

Therefore, it has been verified that the Mediterranean diet with AOVE produces chemoprevention in experimental breast (2, 5) and colon (1) cancer. Also, AOVE has an inhibiting effect on experimental cancer, induced by dimethyl benzantracene (DMBA) in the mouth mucosa, oesophagus and stomach of hamsters (6). Menéndez et al. demonstrated that the AOVE polyphenols inhibit ErbB2 malignant transformation of human breast epithelial cells. Owen et al. (3) highlight the importance of the phenolic compounds isolated in olive oil as an antioxidant and their anti-carcinogen potential.

Dr. Ortega Medina

Titular Professor. Seville University. Spain

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