

Benefits of Omega-3 Polyunsaturated Fatty Acids to Older Patients with Oral or Metabolic Diseases

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Abstract

Omega-3 fatty acids cannot synthesized in the body and need to be obtained from the diet. There are three types of omega-3 fatty acids essential for human body, namely α -linolenic acid (ALA), docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA). Although studies have shown that omega-3 fatty acids cannot prevent or treat diabetes or heart diseases, they do help improve the condition of insulin resistance and the level of triglycerides in the body. It is well known that overweight leads to insulin resistance, which in turn leads to metabolic syndrome. Many animal experiments have confirmed that long-chain omega-3 polyunsaturated fatty acids (n-3 PUFA) are beneficial in promoting insulin sensitivity. They inhibit nuclear transcription factor kappa B (NF κ B), a key transcription factor for the gene expression of inflammatory cytokines. On the other hand, studies have also found omega-3 polyunsaturated fatty acids incapable of improving the function of kidney's endothelial cells and high blood pressure in patients with type 2 diabetes.

(*Taiwan Geriatr Gerontol* 2023; 18(3): 171-177)

Key words: Long-chain omega-3 polyunsaturated fatty acids, metabolic disorders, periodontitis, insulin resistance, eicosapentaenoic acid, docosahexaenoic acid.

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Ω-3 多元不飽和脂肪酸對口腔或代謝性疾病 高齡患者助益

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摘要

Omega-3 脂肪酸人體無法自行製造，必需從飲食中攝取；人體所需 Omega-3 脂肪酸有三種： α -亞麻酸、二十二碳六烯酸與二十碳五烯酸；目前文獻認為 Omega-3 脂肪酸無法預防或治療糖尿病或心臟病，但是對於體內的胰島素阻抗及三酸甘油脂有改善的功效；肥胖會導致胰島素阻抗，這部分是導致代謝症候群的發生機制之一，許多動物實驗研究均證實長鏈 omega-3 多元不飽和脂肪酸 (n-3 PUFA) 對促進胰島素敏感性是有助益的；Omega-3 PUFA 能抑制核轉錄因子 kappa B (NF κ B)，NF κ B 是發炎細胞因子 (cytokine) 中基因表達的關鍵轉錄因子；但研究也指出 omega-3 多元不飽和脂肪酸對改善第 2 型糖尿病患的腎臟內皮細胞功能、高血壓等並無幫助。

(臺灣老年醫學暨老年學會雜誌 2023；18(3)：171-177)

關鍵詞：代謝異常、血糖異常、胰島素阻抗、心血管疾病、長鏈 omega-3 多元不飽和脂肪酸。

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