

## **Health Benefits and Applications of Flaxseed**

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Flaxseed is unique among oilseeds because it contains high concentrations of alpha-linolenic acid (ALA) omega 3 fatty acid, soluble and insoluble dietary fiber as well as phytoestrogenic compounds known as lignans. ALA is converted to longer-chain (n-3) PUFA, such as eicosapentaenoic acid (EPA) and to a limited extent, docosahexaenoic acid (DHA). The efficiency with which this conversion occurs and the factors that may modify it could have important public health implications. Efficacy of the conversion is affected by both amount of ALA fed and the linoleic (n-6) to ALA ratio. ALA plays an important role in growth and development, reproduction and vision; in maintaining healthy skin and cell structure; in the metabolism of cholesterol and in gene regulation. Inverse associations between the intake of ALA and risk of fatal coronary heart disease have been observed. ALA may influence cardiovascular disease risk (CVD) risk by reducing the risk of fatal ventricular arrhythmias and sudden cardiac death and through positive effects on inflammatory biomarkers. Because of limitations in increasing the public's consumption of fish, the use of ALA may be an important source for EPA. Dietary fibers have a well-recognized role in alleviating conditions associated with CVD and diabetes. Flax lignans show anti-estrogenic effects and also act as antioxidants. This presentation will describe the potential health benefits of these important flaxseed bioactives as well as food applications.