

Echium seed oil: offering optimal heart health for vegetarians and vegans

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September 16, 2011

It's pretty common knowledge that consuming fish or fish oils is beneficial when considering general heart health. However, whilst the omega-3s from marine sources are attributed to a reduced risk of developing heart disease, alpha-linolenic acid (ALA), the main omega-3 found in plant sources such as flaxseed oil, appears to lack such protective qualities according to a recent study from Denmark. This prospective cohort study of 3277 healthy Danish women and men, free of known heart disease at recruitment, followed them for a period of 23 years and investigated the possible link between omega-3 intake in individuals who developed heart disease at the end of the study. The main findings showed that whilst a high intake of marine-derived omega-3 had cardio-protective health benefits, reducing the risk of developing heart disease, intake of ALA had no such benefits. Good news for those who regularly consume fish or fish oils, but not so good for vegetarians and vegans who rely on flaxseed oil as their staple form of omega-3.

For ALA to have any significant benefits for cardiovascular health, it must first be converted by several enzyme-mediated steps to its long-chain derivatives eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), a process at which humans are relatively inefficient. Such inefficiency is reflected in the low concentrations of EPA and DHA within the membranes of red blood cells of vegetarians and even more so in vegans. In fact, the content of EPA combined with DHA, better known as the 'omega-3 index', has been reported as a reliable early cardiovascular disease indicator. An omega-3 index of less than 4% indicates a high risk of developing cardiovascular disease and we should be aiming to achieve an index of around 8% or higher to reduce such risk. Part of the problem for non fish-eaters is that the first step in the production of EPA from ALA is mediated by an enzyme that is known to be 'rate-limiting' in its actions. Highly susceptible to reduced activity due to deficiencies in a number of common vitamins and minerals, this enzyme is also affected by lifestyle and behaviour such as alcohol and caffeine intake, as well nicotine from smoking. For those of us who are constantly feeling stressed, it is worth knowing that the efficiency of this enzyme is also directly affected by cortisol, the main hormone produced when we are faced by stressful situations. As such, finding a way to bypass this step and to literally shuttle past this block would allow the body to produce higher levels of EPA, thereby improving long-chain omega-3 levels and ultimately the omega-3 index.

Vegetarians and vegans need not look too far. Swapping flaxseed supplements for, or including echium seed oil into their diet can offer significant health benefits, including heart health. Echium seed oil, unlike flaxseed oil, contains the unique fatty acid stearidonic acid (SDA) and, as a closer relative to EPA, bypasses the rate-limiting block, allowing higher incorporation of long-chain omega-3 into cell membranes, thus improving the omega-3 index. As such, echium seed oil, whilst relatively unfamiliar to many vegetarians and vegans, is gaining increasing scientific interest as an alternative to current non-marine sources of omega-3. Combined with the additional benefits of omega-6 GLA, and omega-9 oleic acid, echium seed oil efficiently raises the omega-3 index, improves immune function and counteracts inflammation, making it a superior solution for vegetarians and vegans wanting to support cardiovascular, brain, joint and eye health.

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