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# The Fountain of Youth

## How "Good" Fats may make you feel younger!

Aging is a fact of life that cannot be denied. Despite our best efforts to discover the "fountain of youth," there is no magic drink, potion or pill that will halt the aging process entirely. There are, however, many dietary modifications that will help attenuate some aging-related diseases and chronic conditions.

The U.S. Department of Agriculture (*USDA*) reports that there is an overall decline in the diet quality of Americans aged 65 and over <sup>(1)</sup>. Moreover, the Healthy Eating Index classifies the diet quality of older adults as "needs improvement" <sup>(1)</sup>. This decline in diet quality may be due to a lack of understanding by the elderly that their nutrient needs change as they age. Most importantly, as we age the number of individuals with chronic medical conditions will increase continuously <sup>(2)</sup>. Therefore, ensuring proper nutritional intake is vital to increasing longevity and improving quality of life as one ages.

The scary thing is that just by aging we are at an increased risk form many disease states <sup>(4)</sup> and the typical American diet is making things worse! There is a real concern for diet-related conditions and their association with aging, such as: cardiovascular disease, type II diabetes, hypertension, obesity, physical disabilities, osteoporosis, cancer and various alterations to mental well-being <sup>(3)</sup>. The good news is that there are numerous adjustments and improvements that can be made to one's diet to increase overall diet quality and health.

One well researched area relates to the ingestion of polyunsaturated fatty acids (*FA's*) or "good" fats (*as opposed to saturated and trans fats*) and their role in combating many diet and age related medical conditions. While "good" fat intake, especially omega-3 *FA's*, will not lead to immortality, they may serve as a way to increase quality of life for older adults: specifically by combating the age-associated medical conditions of cardiovascular disease, inflammatory diseases and cognitive decline.

### "Good" fats

Both omega-3 and omega-6 *FA's* are considered essential fatty acids because our bodies don't make them, so they must be obtained from the diet <sup>(5)</sup>. Both of them, however, regulate many important physiological and developmental functions within the body including lipid metabolism, immune function and cell membrane integrity <sup>(5,6)</sup>. Thus, optimal intake of PUFAs is required for good health.



Unfortunately, this is not usually the case and many aging adults have what amounts to a "good" fat insufficiency <sup>(6)</sup>. Researchers have shown that 32% of hospitalized elderly patients in their study had omega-6 intakes below that recommended by the National Research Council and 86% received less than 0.5% of energy from omega-3 fatty acids. This is troublesome because "good" fats are recommended to elderly patients to limit many age-related problems <sup>(6)</sup>.

### Omega-6 Fatty Acids (*Linoleic Acid*)

Omega-6 *FA's* increase our body's inflammatory responses, while omega-3 *FA's* help counteract that inflammatory response <sup>(5)</sup>. Therefore, a proper balance between omega-6 and omega-3 *FA* consumption is crucial for many physiological processes <sup>(5)</sup>.

Omega-6 *FA's* make up the overwhelming majority of PUFAs in the diet, especially in the American diet (*table 1*) <sup>(7)</sup>. With omega-6 *FA's* available in many foods, especially western foods, it is not surprising that westernized people have a dietary ratio of roughly 20:1 omega-6 to omega-3 *FA's* when the recommended ratio is only 4:1 <sup>(5,7)</sup>. The adequate intake (*AI*) values, for older adults age 50 and up for omega-6 intake is 14 g/day and 11 g/day for males and females, respectively <sup>(8)</sup>.

Although omega-6 *FA's* are essential for skin integrity and kidney function <sup>(5)</sup>, a diet exceedingly high in omega-6 *FA's* may lead to many inflammatory-related diseases including certain age-related complications such as arthritis, cardiovascular disease, depression, and other autoimmune diseases <sup>(7)</sup>. Therefore, research has been focused on the health impact of improving the ratio of omega-6 to omega-3 *FA's* in the diet.

### Omega-3 Fatty Acids (*Linolenic Acid*)

Omega-3 *FA's*, on the other hand, are not as prevalent in the diet as are omega-6 *FA's*. Omega-3 *FA's* can be found in certain plant sources and from fish and fish oils (*table 1*) <sup>(9)</sup>. The *AI* values for linolenic acid, as recommended by the committee on Dietary Reference Intakes, for people ages 14 years and up, are 1.6 g/day and 1.1 g/day for male and females, respectively <sup>(8)</sup>. Specifically, the omega-3 *FA's* in fish have been associated with a protection from heart disease <sup>(4,7,9)</sup> and their anti-oxidant properties result in many other beneficial effects <sup>(12)</sup>.

Omega-3 *FA's* have been linked to a multitude of health benefits related to aging including reduced risk of cardiovascular disease, inflammatory and autoimmune diseases, increased cognitive ability and a decreased risk for certain cancers. Indeed, one researcher said, "the 'omega-3' story may someday be viewed as one of the most important in the history of modern nutritional science" <sup>(13)</sup>.

Source of Omega-6 Fatty Acids	Sources of Omega-3 Fatty Acids
Vegetable Oils	Salmon
Salty Snacks	Trout
Fruit/Vegetables	Tuna
Desserts and Sweets	Herring
Grain Products	Walnuts
Meat	Canola Oil, Flax Oil

Table 1. Common sources of omega-6 and omega-3 fatty acids <sup>(4,10)</sup>