

# Creating Health & Nutrition Fact Sheets

for the StrongWomen™ Program

## Tip

Eat fish several times a week. Canned salmon, tuna, herring, and sardines are good sources of beneficial omega 3 fatty acids.

Omega 3 fatty acids can sell foods and supplements, but the alphabet soup of omega 3, omega 6, DHA, EPA, AA, and AL may be hard to untangle. Here are definitions, information about effects, and recommendations for intake.

## Why Are Fatty Acids Called "Omega 3 Fatty Acids"?

Omega fatty acids are polyunsaturated fats. A fatty acid is a long string of carbon atoms. An unsaturated fat is distinguished from a saturated fat by the presence of a double bond in that carbon string. When fats have more than two

## Omega Fatty Acids

double bonds, they are called polyunsaturated. Scientists have determined that there are two classes of polyunsaturated fats:

- Omega 6—the first double bond from the end of the fatty acid is at carbon atom 6
- Omega 3—the first double bond from the end of the fatty acid is at carbon atom 3

Omega 6 and omega 3 may also be called n-6 and n-3, respectively.

## What Is Special about Omega 3 Fatty Acids?

We cannot make these in our bodies. We have to get them from foods. The three major omega 3 fatty acids are ALA, EPA, and DHA. Their full chemical names are at the end of this fact sheet. We can convert ALA to EPA and DHA, but not very efficiently.

- DHA is the major polyunsaturated fatty acid found in the brain. It is important for brain development and function.
- EPA is converted to hormone-like compounds called eicosanoids.

## What Is Special about Omega 6 Fatty Acids?

We can make some of these fatty acids in our bodies, but one must come from our diet. This is LA (see full name at the end of this fact sheet) and it is converted to a longer fatty acid called AA.

- AA is converted to hormone-like compounds called eicosanoids.

## What Do Eicosanoids Do?

Eicosanoids regulate body functions like cell division and growth, blood clotting, and muscle activity. They affect our response to injury, infection, and certain diseases. The key difference between omega 3 and omega 6 fatty acids is the eicosanoids they form.

- The omega 3 EPA forms eicosanoids that tend to *reduce* inflammation. They protect against heart attacks, strokes, and inflammatory diseases such as arthritis, lupus, and asthma.
- The omega 6 AA forms eicosanoids that *increase* the inflammatory response to injury, stress, infection, and disease. These increase clotting, restrict blood vessel size, and help contain an infection or reduce bleeding.



## What Is the Current Recommended Intake of Omega 3 and 6 Fatty Acids?

Americans get 10 times more omega 6 than omega 3 in their diets. Experts think we should be eating more food sources of omega 3 and fewer sources of omega 6. However, there is no recommended ratio. There is some evidence that high intakes of omega 6 interfere with making EPA and DHA from ALA. The Institute of Medicine has established an adequate intake of ALA and LA at 1.1 to 1.6 grams per day and 11 to 17 grams per day, respectively.

## What Foods Are Good Sources of Omega 3?

Fatty fish are the richest source. Fish like salmon, sardines, mackerel, herring, and tuna are good sources of DHA and EPA. Certain algae make DHA and EPA. The fish eat these algae and store these fats in their bodies. Good sources of ALA are nuts, flaxseed, some green vegetables, and soy and canola vegetable oils.

## What Foods Are Good Sources of Omega 6?

Many of our common vegetable oils, which are high in polyunsaturated fats like safflower, sunflower, corn, and soy, are good sources of LA. Any food made using these oils is also a source of omega 6 fatty acids. Our food system is rich in omega 6 fatty acids.

## What Are Benefits of Eating More Omega 3 Fatty Acids?

- Fish and fish oil supplements reduce sudden death and heart attacks arising from cardiovascular disease.
- Fish oils lower blood triglycerides. Depending on the dose, this can be as much as 33 percent.
- Fish oils have a small but beneficial effect on blood pressure.
- Omega 3 fatty acids can reduce joint tenderness and the need for corticosteroid drugs in rheumatoid arthritis.

## What Proposed Benefits Have Not Been Proven?

So far there is no evidence to support a benefit for the following:

- Asthma
- Inflammatory bowel disease
- Renal disease
- Systemic lupus erythematosus
- Dementia, including Alzheimer's disease
- Bone density
- Diabetes

## Are Omega 3 Supplements Safe?

Fish oil supplements have been used in many research studies. Subjects took doses ranging from 0.3 to 8 grams a day for time spans of one week to seven years. Generally, other than a fishy aftertaste, few side effects were reported. Those reported were mainly gastrointestinal, such as diarrhea. By themselves, they do not appear to increase bleeding events. However, if you are taking Warfarin or aspirin, check with your doctor before using fish oil supplements. Sometimes, these interact to cause bleeding at a wound or in the gastrointestinal tract.

## Examine Your Choices

If you do not eat much fish, look at your choices. Canned fish like salmon, sardines, and tuna are inexpensive choices for lunch. Try adding these to your lunch pattern several times a month. Over time, increase this to once a week.

## Definitions

### *Omega 3*

ALA—alpha-linolenic acid  
EPA—eicosapentaenoic acid  
DHA—docosahexaenoic acid

### *Omega 6*

LA—linolenic Acid  
AA—arachidonic acid

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