Omega-3s are a sub-category of polyunsaturated fats that exist within the larger umbrella of dietary fats. Although the term ‘fat’ is typically spoken of within a negative context, omega-3 fatty acids are important, healthy fats that should be included and encouraged in the diet.

From a nutritional and health-related perspective, there are three omega-3 fatty acids that have beneficial roles in the body and they include alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA).

ALA is a short-chain omega-3 polyunsaturated fatty acid that is naturally found in plant sources like flaxseeds, walnuts, olive oil and tofu. It is considered an essential fatty acid because it cannot be synthesized in the body and must be obtained through the diet. EPA and DHA are long-chain omega-3 polyunsaturated fatty acids that are mainly supplied to the diet from marine-based sources like salmon, sardines and algae. Although ALA can be converted to EPA and DHA, this process is extremely inefficient making EPA and DHA supplements and/or increased fish intake very beneficial. Although ALA can be converted to EPA and DHA in the body, this process is extremely inefficient.

Why Do I need Omega-3 Fatty Acids?
Omega-3s are critical to human health and provide the structural integrity for all human cells. ALA, EPA and DHA are incorporated into cell membranes and are necessary for effective cell function, normal growth and proper development. Another reason why omega-3s are so important is because they tend to be inadequately consumed in the American diet. Most people don’t consume the recommended two to three servings of oily fish per week, and even the plant-based sources of ALA aren’t a widespread staple. Moreover, omega-6 fatty acids—found in safflower oil, corn oil, and other vegetable oils that are commonly used in processed foods—are consumed in abundance. This imbalanced intake ratio of omega-6s to omega-3s may be as high as 20:1 for some, and has been associated with some serious health risks.

How do we know Omega-3s are Good for our Health?
To date, a considerable amount of research supports the beneficial effects of EPA and DHA for cardiovascular health. In fact, the relationship between omega-3s and heart health is so strong that the FDA approved a qualified health claim that states that supportive but not conclusive research shows that consumption of EPA and DHA may reduce the risk of coronary heart disease. While the role these omega-3s play in heart health is by far the most extensively studied, more and more findings point to the potential role of omega-3s in skin, joint, brain and eye health.

How Much Omega-3s Do I Need?
Understanding how much omega-3s you need can be a little tricky. Currently, a Dietary Reference Intake (DRI) exists for ALA (1.6 grams/day for males; 1.1 grams per day for females), but does not exist for...
EPA and DHA. To provide guidance for consumers and practitioners, many experts and expert groups have spent a good deal of time vetting the research in order to propose intake guidelines for EPA and DHA. These groups recommended a total of 500 mg of EPA and DHA per day for the general adult population and 1000 mg per day for individuals with heart health concerns. Under doctor supervision only, greater amounts are recommended for individuals with high triglycerides. While it is useful to learn about these recommendations, all patients are encouraged to consult their primary health care professional regarding proper dosing.

Omega-3 Supplements
Fish oil, flaxseed oil and krill oil appear to be the three main omega-3 supplements available on the market. Below is a description of all three.

**Fish Oil:** Fish Oil is a strong, natural source of the omega-3s EPA and DHA. Fish oil formulas are available in a variety of strengths and can be specially coated with an enteric coating to reduce a fishy flavor or aftertaste that some people experience. Salmon, anchovies and sardines are among the most common sources used for fish oil.

**Krill Oil:** Krill Oil, which is extracted from the small crustacean, is also a natural source of EPA and DHA. Additionally, it contains a small amount of an antioxidant called Astaxanthin, and is recognized for having no fishy aftertaste or odor. However, compared to fish oil, Krill Oil has a much lower EPA and DHA content—usually between 70 and 90 mg per capsule.

**Flaxseed Oil:** Flaxseed Oil is a great plant-based source of the omega-3 fatty acid ALA, and is especially convenient for people who avoid fish and shellfish in their regular diet.

Triglyceride vs. Ethyl Ester Fish Oil
Fish Oil supplements are available in either the triglyceride or ethyl ester form depending on the molecular structure of the oil. Fish Oil in the triglyceride form is the form found in nature, and is made up of three fatty acids bonded to a glycerol backbone. Fish oil products in the natural triglyceride form will deliver at or around 300 mg EPA and DHA per capsule.

Ethyl ester fish oil is a processed form in which the glycerol backbone is chemically removed in order to concentrate the fatty acids. Products that deliver a highly concentrated formula, some containing as high as 800 mg EPA plus DHA per capsule, are made using the ethyl ester form.

Omega-3 Safety
Omega-3 supplements like fish oil, flaxseed oil and krill oil should be used with caution among pregnant or nursing women. Due to the slight blood thinning effect of such oils, individuals taking blood thinning medication, facing surgery, suffering from bleeding problems or undergoing any other treatment which may affect the ability of blood to clot should consult their physician before supplementing.

REFERENCES