



## Asta-X-Krill™

### Recommended Use:

- Chronic inflammation
- Arthritis, osteoarthritis and pain
- Cardiovascular and circulation conditions
- Hypertension
- PMS and dysmenorrhea
- ADHD (adult)
- Hypercholesterolemia and hyperlipidemia
- Muscle endurance and recovery
- Eye fatigue
- Wrinkles (UV induced)
- Dyspepsia and gastritis
- Type II diabetes

Asta-X-Krill is a combination of Neptune Krill Oil (NKO®) and AstaREAL® astaxanthin. NKO® krill oil, harvested and purified from Antarctic Krill (*Euphausia superba*), has the highest naturally-occurring Omega-3 levels of EPA and DHA and contains esterified astaxanthin. In addition, Asta-X-Krill has the greatest percentage of added astaxanthin, a carotenoid antioxidant sourced from naturally occurring microalgae (*Haematococcus pluvialis*). Compared to other krill and fish oils, Asta-X-Krill has the highest bioavailability, absorption and assimilation of Omega-3s (DHA and EPA).

Omega-3s, categorized as alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA), are polyunsaturated essential Omega-3 fatty acids. They are widely known for their cardiovascular and anti-inflammatory properties in addition to supporting the normal development of the brain, eyes and nerves. NKO® krill oil has recently emerged as a superior source of Omega-3s, due to a patented composition containing proprietary Omega-3 phospholipids.

Phospholipids are the major component of all cell membranes and are essential for all vital cell processes. Phospholipids are one of the principle constituents of high density lipoprotein (good cholesterol) and play an important role in transporting cholesterol in the blood.

Neptune Krill Oil®'s novel phospholipids carry and functionalize the polyunsaturated Omega-3 fatty acids EPA and DHA, while being stabilized by potent antioxidants. This combination allows the Omega-3 fatty acids (including DHA and EPA), to be directly absorbed into the blood and reach the end point of usage, thus optimizing the Omega-3s therapeutic benefits. In contrast, Omega-3s derived from fish oils are transported by triglycerides, which are digested and assimilated much differently. The fish oil Omega-

3s are first transported into the lymphatic system, which becomes a much longer and slower absorption route to reach the end point of usage.

The antioxidants (astaxanthin, Vit. A and Vit. E) found in Asta-X-Krill prevent free radical cellular damage, a common pathway for cardiovascular disease and inflammation as well as neurodegenerative disease. The presence of astaxanthin stabilizes the Omega-3s in the krill oil and provides powerful antioxidant protection, a property that does not exist in any fish oil or pharmaceutical Omega-3 product. This



### Medicinal Ingredients:

Each gelatin capsule contains:

Neptune Krill Oil (NKO®) ( <i>Euphausia superba</i> )	500 mg
• Total Omega-3 fatty acids	150 mg
• EPA (Eicosapentaenoic acid)	75 mg
• DHA (Docosahexanoic acid)	45 mg
Haematococcus pluvialis (AstaREAL® L10*)	60 mg

\*10% Astaxanthin, equivalent to 6 mg Astaxanthin

**Non-medicinal Ingredients:** Gelatin, glycerine, water.

**Caution/warnings:** Consult a health care practitioner if you are pregnant or breastfeeding, or if you have a clotting or bleeding disorder, or are taking anticoagulants or other medication before taking this product.

**Contraindications:** Individuals allergic to marine products (fish, crustaceans, mollusks, and other seafood) should not take this product.

**Recommended Dose (Adult):** Take 1 - 2 caps daily with food or as directed by a health care practitioner.

protection is attributed to the molecular structure (lipid soluble polyene chain with polar ends) that spans the bilayer of the cell membrane to protect both the lipid centre layer and aqueous outer layers. This configuration is unique to astaxanthin and ensures that fatty acids do not go rancid, scavenge singlet oxygen species, and provide protection from oxidation, free radical damage and lipid peroxidation.

NKO® and astaxanthin have been rigorously researched with strong scientific validation for proven safety and efficacy. They have clinically proven health benefits and with more than 40 published studies, this astaxanthin is the most extensively studied in the world.

Health Canada claims that have been awarded to NKO® krill oil include:

- Helps maintain cardiovascular health with 2 caps daily.
- Helps reduce serum triglycerides/triacylglycerols (in conjunction with conventional statin therapy) with 4 caps daily.
- Helps reduce the levels of LDL cholesterol and increase the levels of HDL cholesterol (in conjunction with conventional statin therapy) with 2 caps daily.
- Helps relieve symptoms of dysmenorrhea and PMS at 4 caps daily.
- Helps reduce pain associated with osteoarthritis with 1 cap daily.
- Helps reduce blood C-reactive protein levels, a clinical marker of inflammation with 1 cap daily.

### Antioxidant Potency:

Both Neptune Krill Oil® and astaxanthin have proven superior antioxidant potency. Independent testing revealed that the antioxidant power of NKO® is: 300 times greater than vitamins A and E; 48 times greater than Omega-3 fish oil; and 34 times greater than CoQ10 (1). The superior antioxidant activity of astaxanthin is due to its unique configuration that spans the lipid bilayer of cells and has proven to be 1,000 times more effective than vitamin E in lipid oxidation (2) and 500 times more effective than vitamin E in against single oxygen molecules (3).



## Cardiovascular Health and Cholesterol Benefits:

Neptune carried out a clinical trial on 120 patients to assess the effectiveness in hyperlipidemia, which promotes plaque formation and narrowing of the arteries leading to heart attack, stroke and peripheral vascular and neurodegenerative diseases. The results of the clinical, three-month, randomized, double blind clinical study are shown in Fig. 1.

Fig. 1

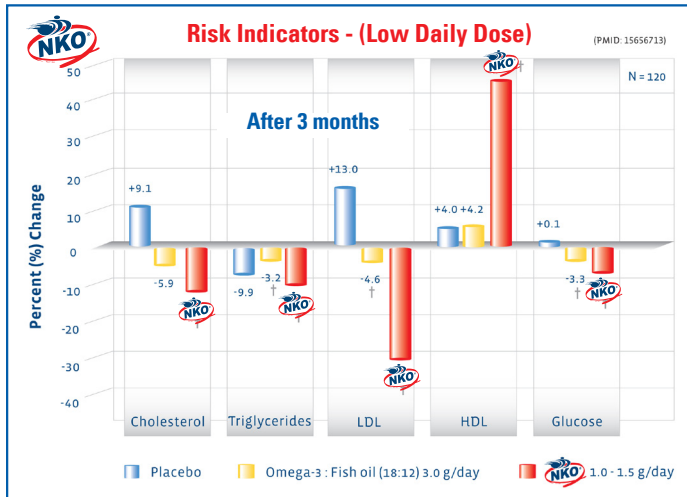


Fig. 1: This study shows that in 3 months, NKO® is effective in controlling hyperlipidemia by significantly reducing total cholesterol (by 13.6%), LDL cholesterol (by 33.9%) and triglycerides (by 11.5%), while increasing HDL cholesterol (by 43.3%). No other Omega-3 or statin can increase HDL and lower LDL to this extent (4).

## Chronic Inflammation and Arthritis:

Evidence has demonstrated the anti-inflammatory properties of EPA and DHA regulate important biological functions including degenerative, arthritic, circulatory, digestive, and brain diseases. NKO® has shown positive effects on chronic inflammation and arthritic symptoms. Supporting this is a randomized double-blind clinical trial (Fig 2) that evaluated the effect of NKO® on C-reactive protein (CRP) with patients suffering from chronic inflammation and arthritic symptoms.

## References:

- 1) Ou, B. Superior Antioxidant Potency: Oxygen Radical Absorption Capacity (ORAC). US Department of Agriculture. Brunswick Laboratories, 2002.
- 2) Miki, W. Biological functions and activities of animal carotenoids. Pure and Appl. Chem. 1991; 63: 141-146.
- 3) Shimizu, N., et al., Carotenoids as singlet oxygen quenchers in marine organisms. Fisheries Sci, 1996; 62: 134-137. 1)
- 4) Bunea R, El Farrah K, MSc, Deutsch L. Evaluation of the Effects of Neptune Krill Oil on the Clinical Course of Hyperlipidemia. Altern. Med. Rev. 2004;9(4):420-428.
- 5) Deutsch, L. Evaluation of the Effects of Neptune Krill Oil on Chronic Inflammation and Arthritic Symptoms. J. Am. Coll. Nutri., 2007; 26:39-48.



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Fig. 2

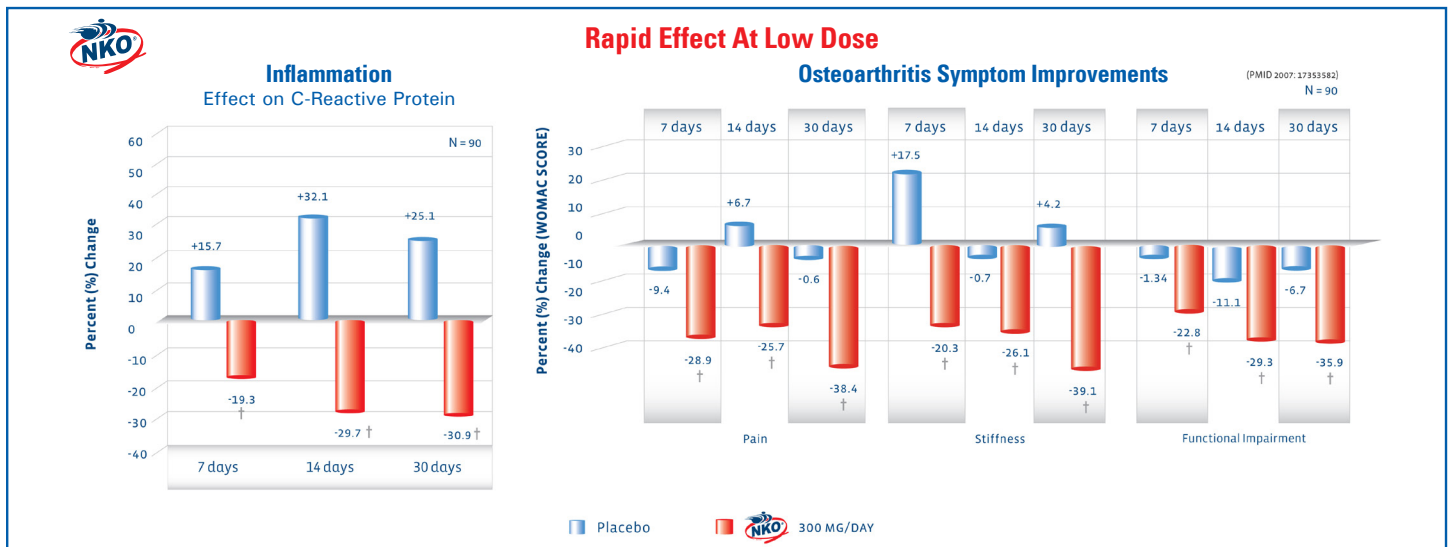


Fig 2: The study results validate the potent anti-inflammatory properties of NKO® in significantly inhibiting inflammation (C-reactive protein) and reducing arthritic symptoms within 7 days. After 30 days, the CRP levels decreased by 30.9% and the pain, stiffness, and functional impairment based on the WOMAC (Western Ontario and McMaster Universities osteoarthritis score) had all decreased by 38.4%, 39.1% and 35.9% respectively (5).