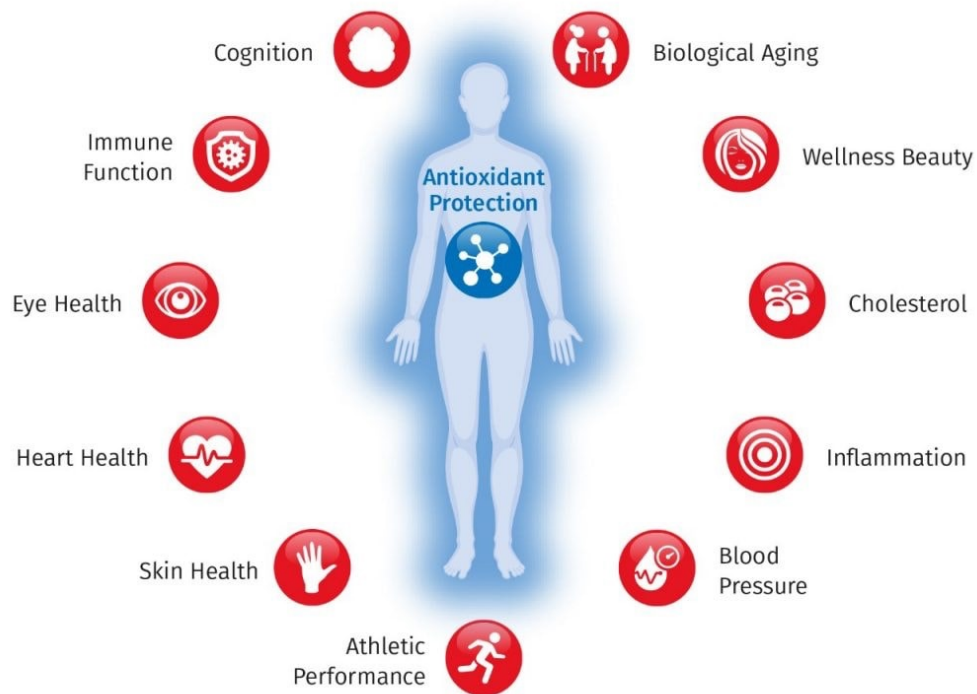


Gandalf Astaxanthin

100% Vegan



Manufactured by VieSun inc Canada

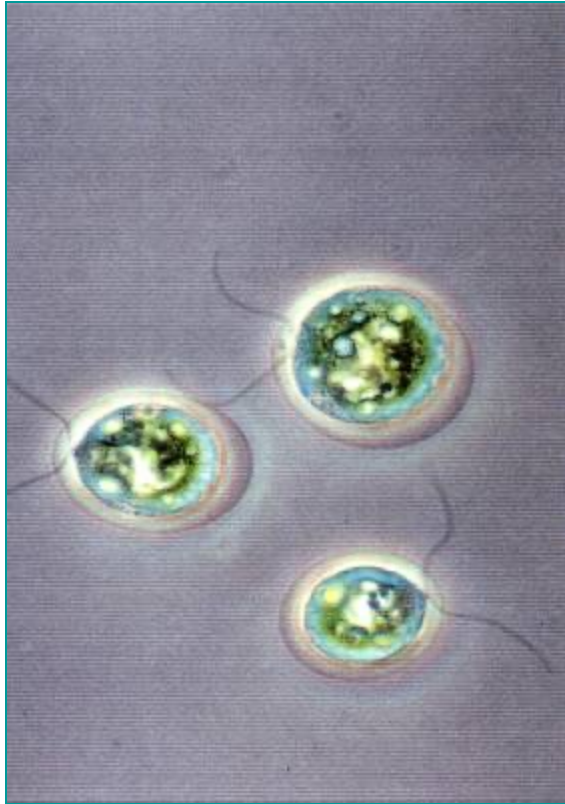


All Natural Process

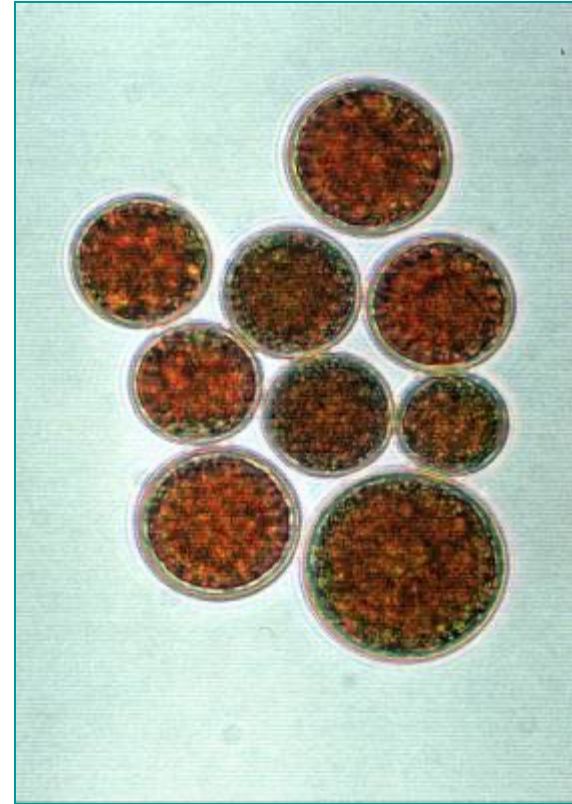
- Pesticide & Herbicide Free
- GMO Free
- Non-irradiated
- Solvent Free
- 100% Vegan SoftGels
- 4mg pure astaxanthin
- Canadian company
- Gandalf 30 years quality



Haematococcus Cells



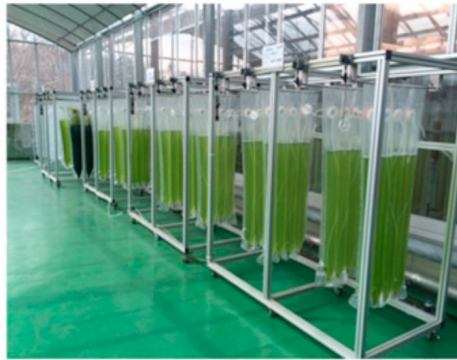
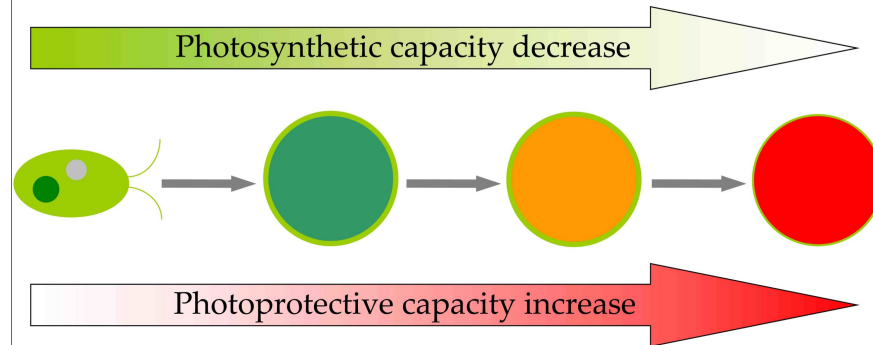
Mobile, green cells



Encysted cells produce large amounts of astaxanthin

(6 – 8 day cycle)

Cell transformation and astaxanthin accumulation

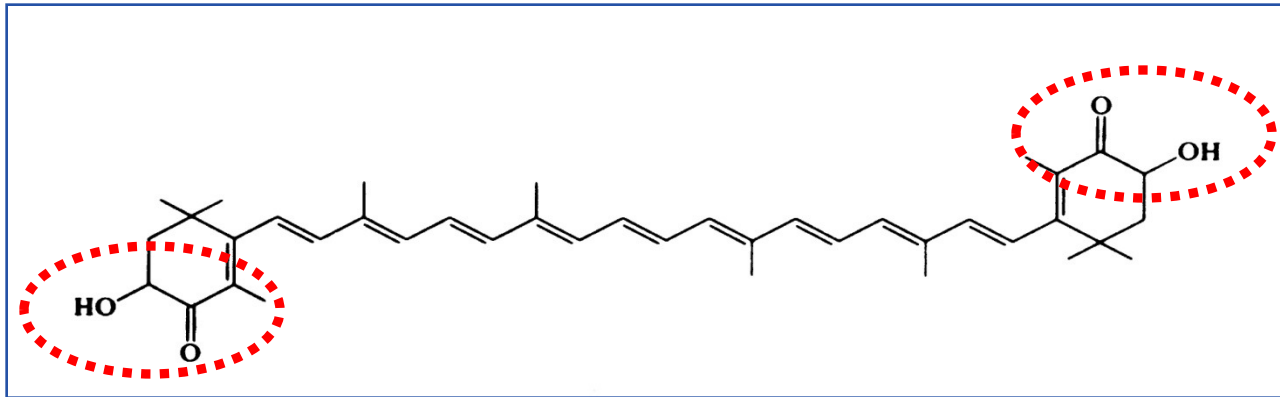


**Astaxanthin is found in foods
such as salmon, lobster and shrimp**

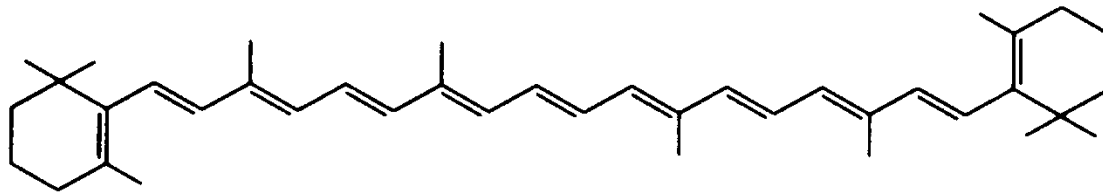


Microalgae is nature's richest source of astaxanthin

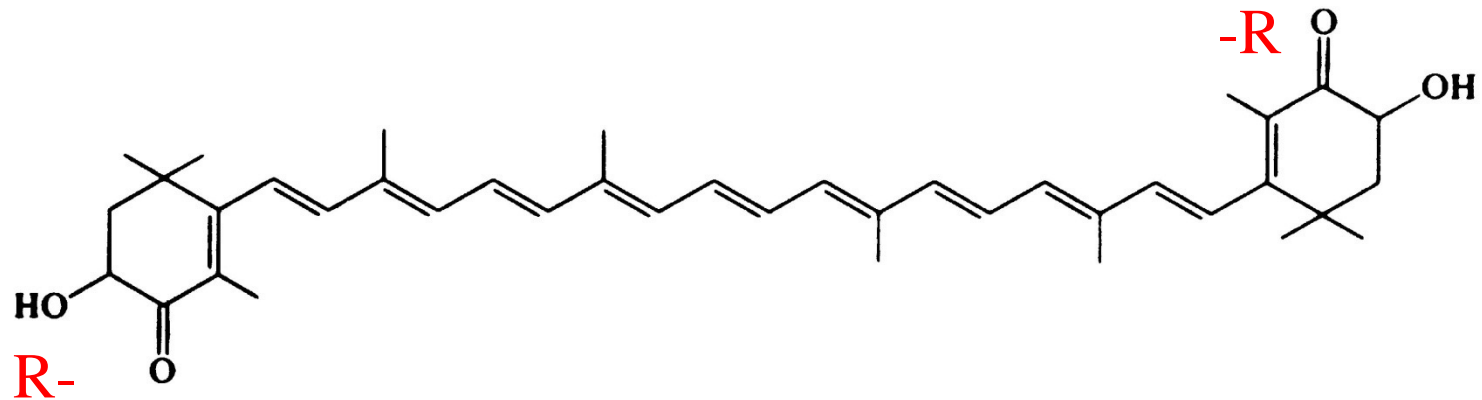
Structural similarity to beta-carotene, but strong functional difference



β -Carotene



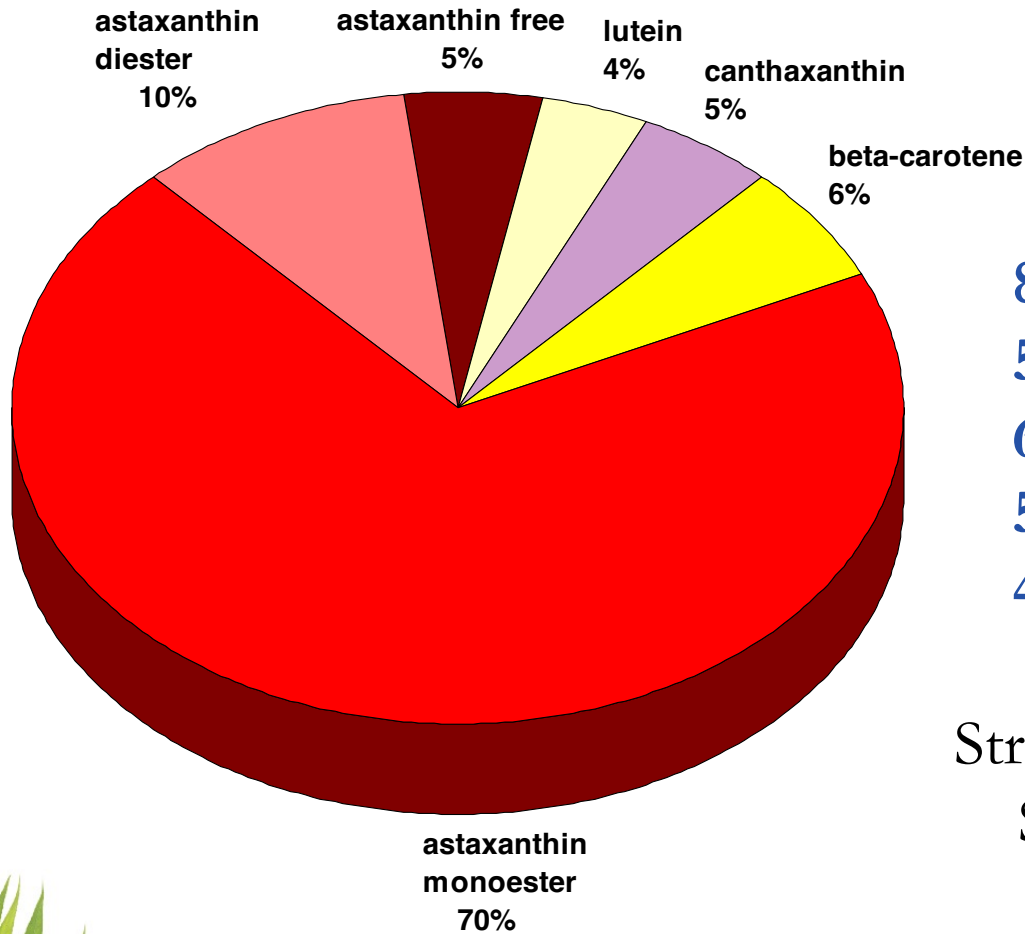
Unique Chemistry of Natural Astaxanthin



1. Molecule spans cell membranes
2. Crosses blood-brain barrier
3. Bonds with muscle tissue

- *Beta-carotene and lycopene cannot do these things*

A Natural “Carotenoid Complex”



80% Esterified Astaxanthin
5% Free Astaxanthin
6% Beta-Carotene
5% Canthaxanthin
4% Lutein

Structurally different from
Synthetic Astaxanthin

Astaxanthin Research

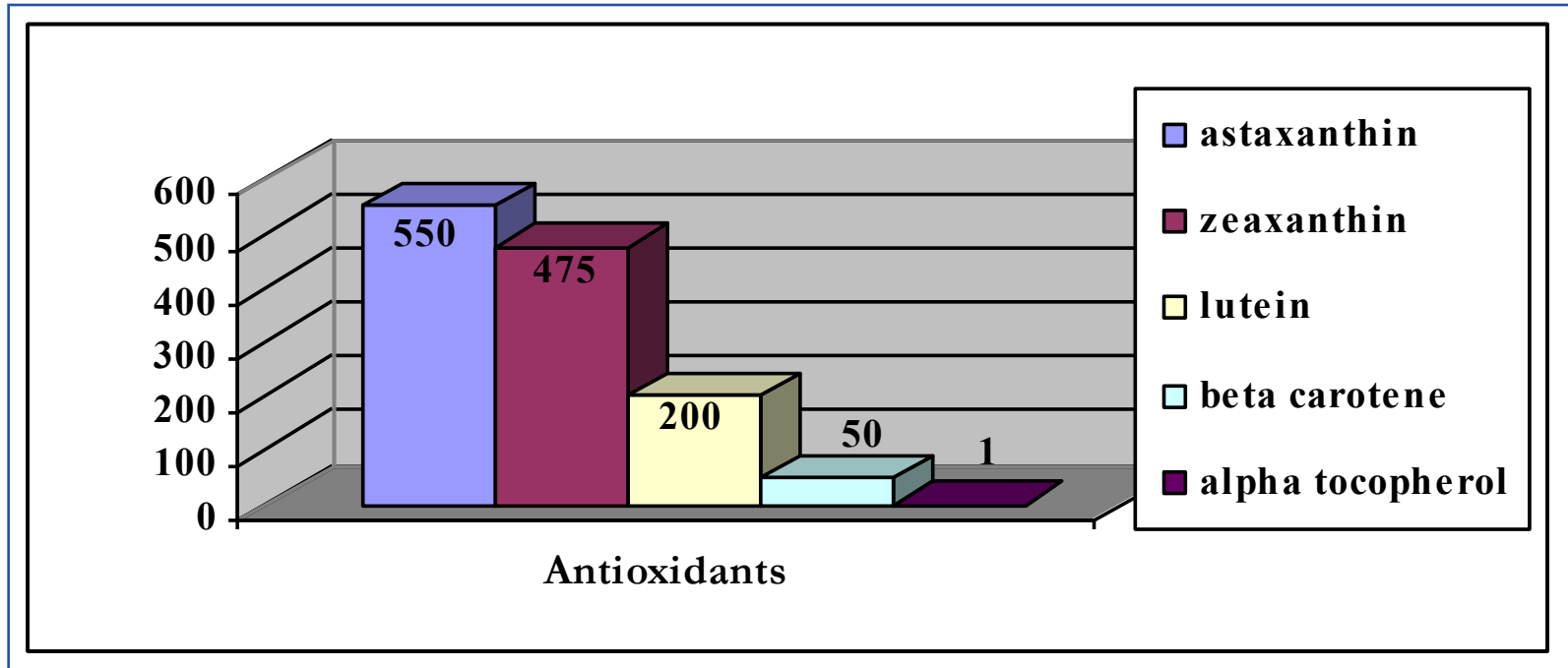
1. World's Strongest Antioxidant
2. Excellent Anti-inflammatory
3. Rheumatoid Arthritis
4. Carpal Tunnel Syndrome
5. C-reactive protein
6. Tennis elbow (tenonitis)
7. Internal Sunscreen
8. Prevents joint and muscle soreness after exercise
9. Improves exercise recovery
10. Immune System Enhancer
11. Brain and Central Nervous System
12. Macular Degeneration and Visual Acuity
13. Blood Lipids and Cholesterol
14. Skin and Beauty Applications
15. Ulcers
16. Strength and Endurance
17. Improves Semen Quality in Infertile Men
18. Inhibits Carcinogenesis (animal studies)
19. Diabetes Applications (animal studies)



Gandalf Astaxanthin® is exceptionally powerful in singlet oxygen quenching

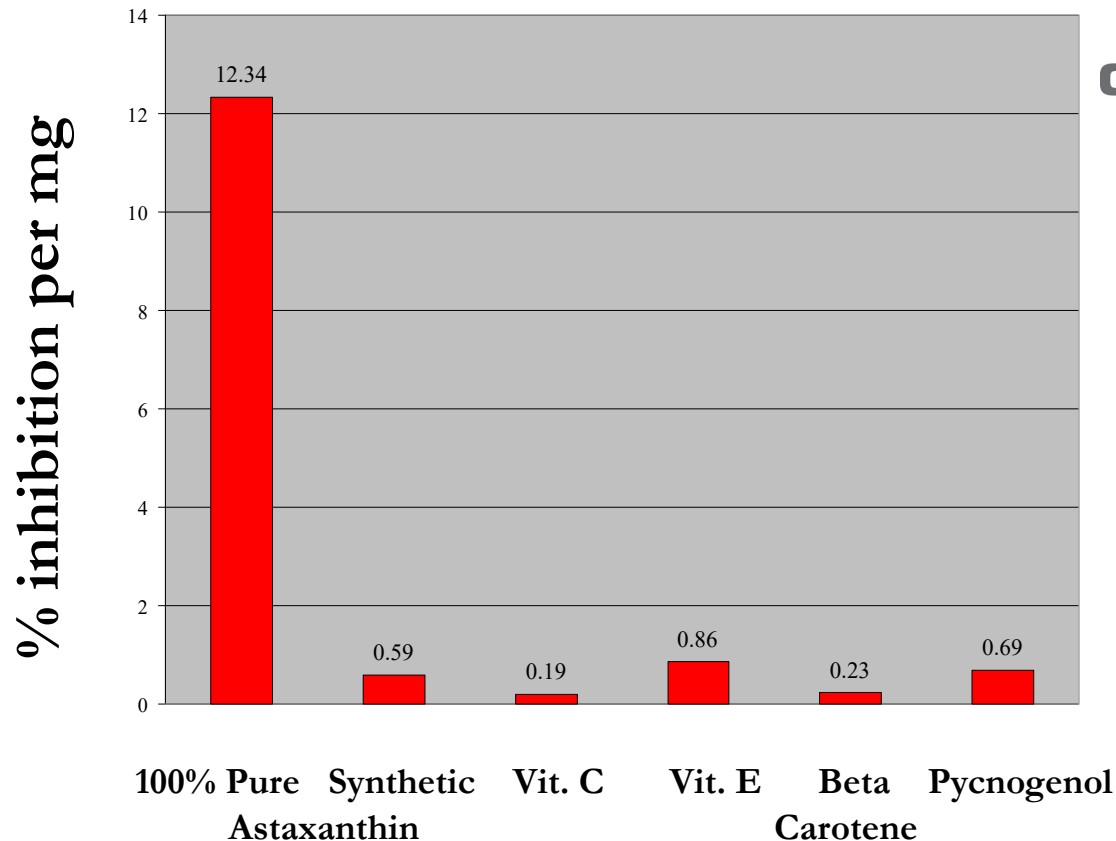
singlet oxygen is a metastable state (state of being stable)

Astaxanthin neutralizes singlet oxygen twice as effectively as beta-carotene



- 550 times stronger than vitamin E
- 11 times more powerful than beta-carotene

Also exceptionally strong in Oxygen Free Radical Scavenging



ASTAXANTHINE™
GANDALF
ASTAXANTHIN

20X – 60X
stronger
than all
other
antioxidants
in free radical
scavenging


D. Bagchi, 2002, Creighton University

Latest Antioxidant Research


Singlet Oxygen Quenching Comparison

- **Astaxanthin** 800X stronger than COQ10
- **Astaxanthin** 550X stronger than Green Tea Catechins
- **Astaxanthin** 75X stronger than Alpha Lipoic Acid
- **Astaxanthin** 6000X stronger than Vitamin C!!!

Nishida, et al, 2007



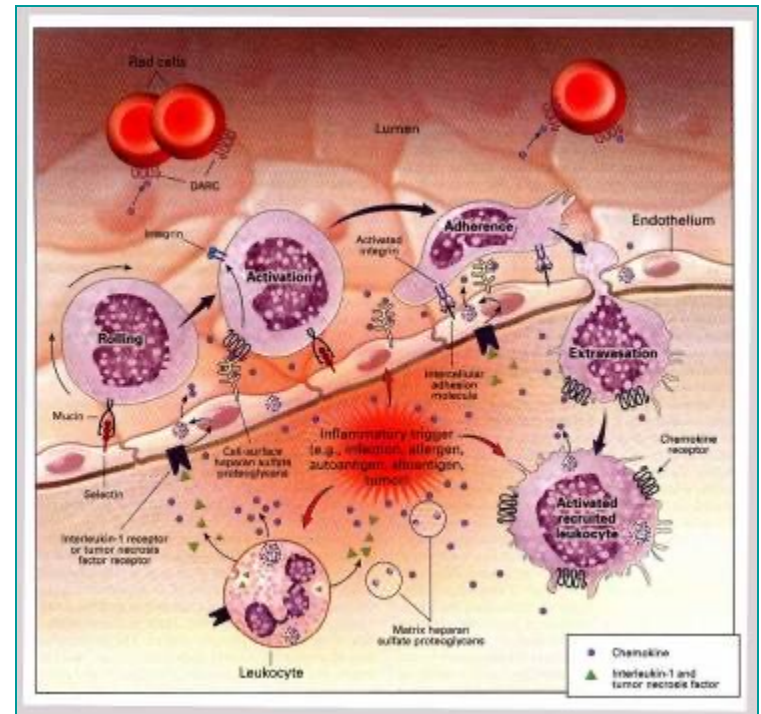
Astaxanthin is never a “Pro-oxidant”

- Some antioxidants can have a negative, pro-oxidant effect under certain conditions and cause oxidation in the body
 - Beta carotene, lycopene, zeaxanthin, Vitamins C and E can become pro-oxidants
 - Astaxanthin never becomes a pro-oxidant
- 

Inflammation

Inflammation is the cause of many life-threatening diseases



- Astaxanthin works through multiple pathways by inhibiting 5 causes of inflammation:
 1. Prostaglandin E-2
 2. Nitric Oxide
 3. Cox-1 and Cox-2 enzymes
 4. Interleukin 1 β
 5. Tumor Necrosis Factor-A





C-reactive protein (CRP)

A normal C-reactive protein value should be less than about 6 mg/liter depending on ethnicity

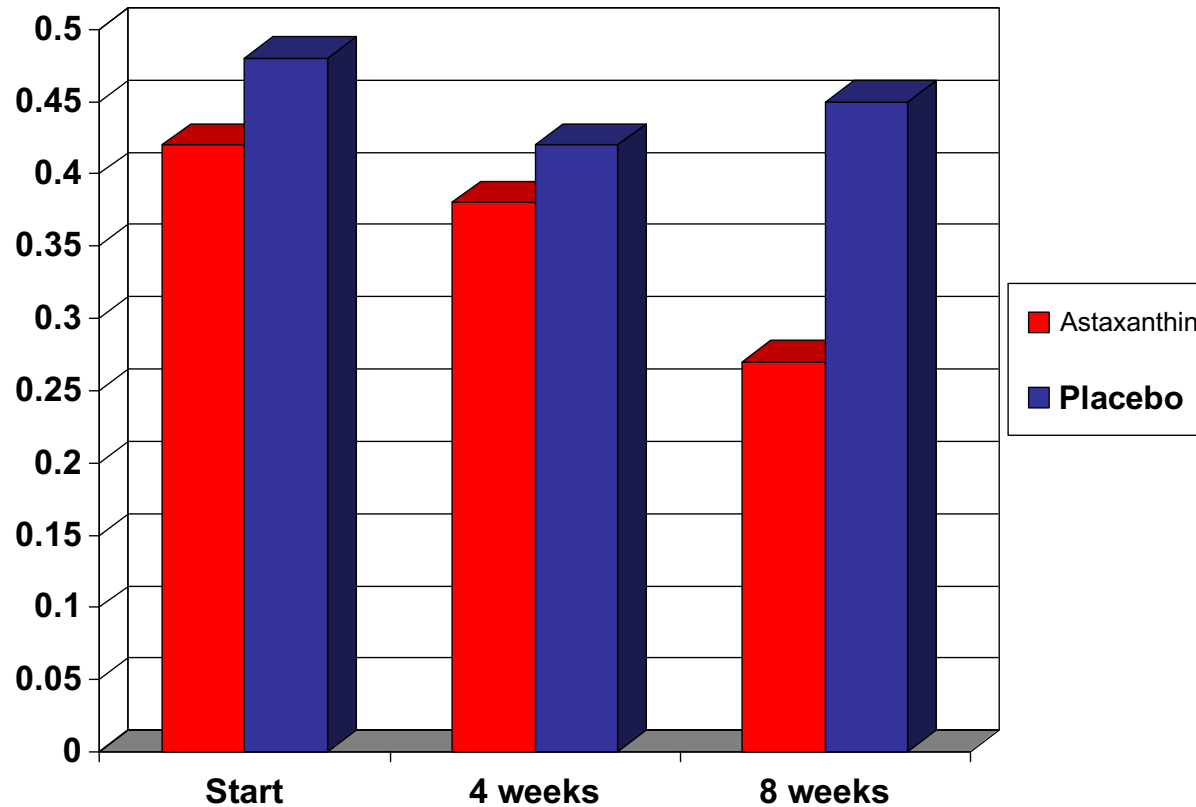
- **Marker for “silent inflammation”**
 - **American Heart Association claims CRP is a key indicator of heart disease**
 - **Root cause of many life-threatening illnesses**
 - **Gandalf Astaxanthin[®] shown to reduce CRP by over 20% in only 8 weeks**
- 
- 

Rheumatoid Arthritis

- Much more difficult to treat than Osteo-Arthritis
- Double blind, placebo controlled clinical trial showed excellent results with Astaxanthin



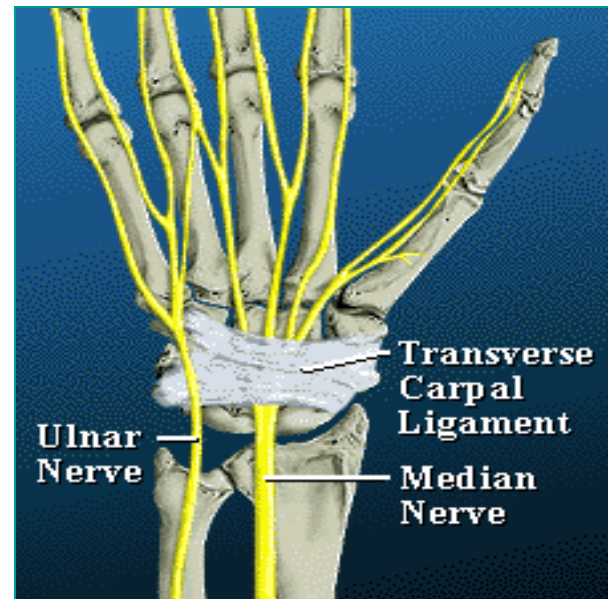
Rheumatoid arthritis pain scale



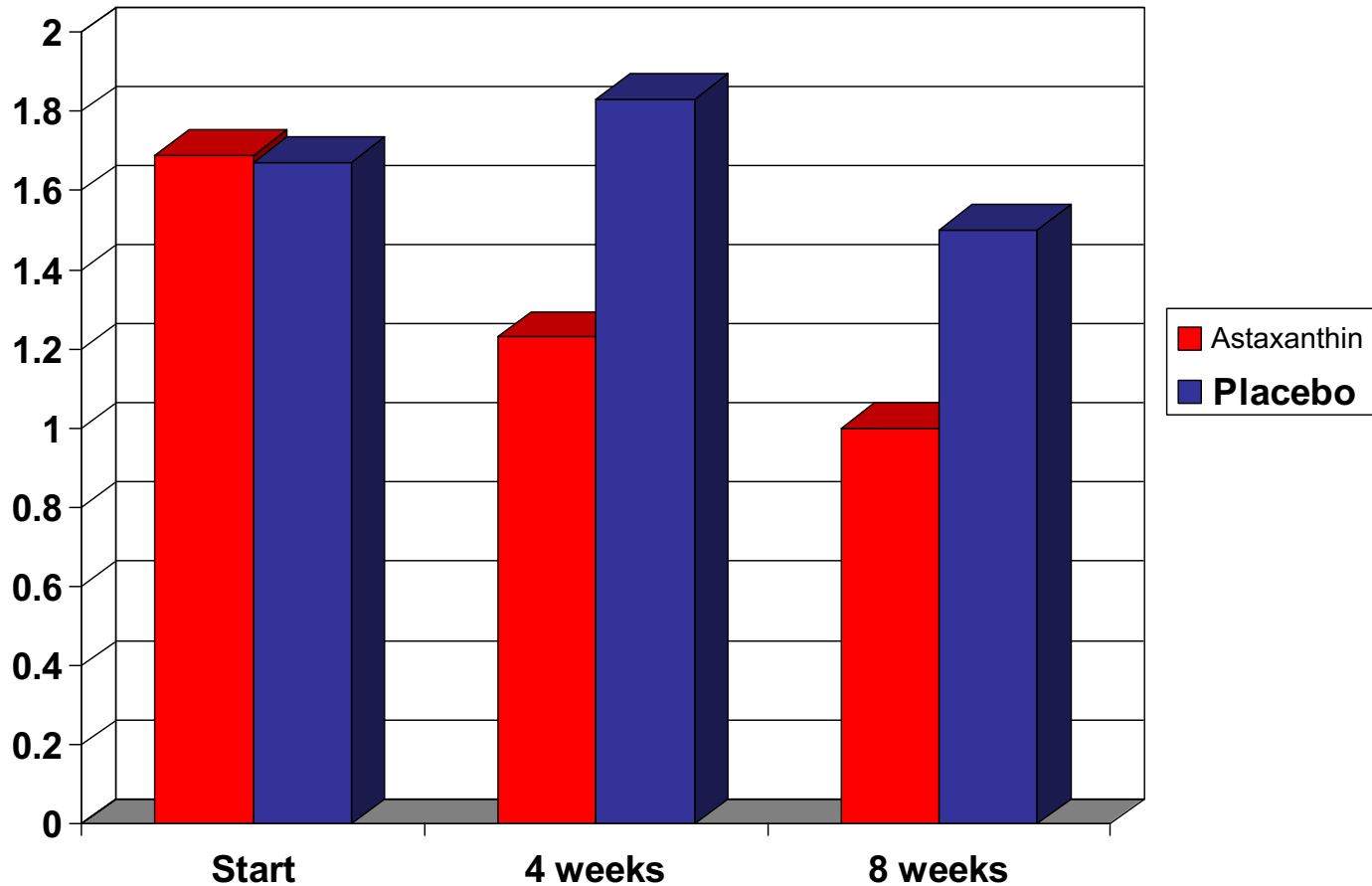
Statistically significant decrease in pain

Carpal Tunnel Syndrome (Repetitive Stress Injury)

- Approximately 2% of the US population has CTS
- No Cure:
Splints/Surgery only
options for most patients
- Positive clinical results:
Improvement in mobility
and reduction in pain



CTS daytime pain rate



Positive trend in decreased pain

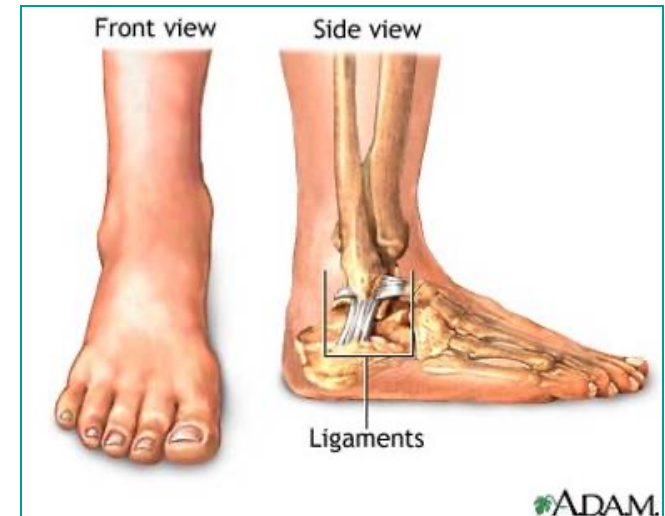
Tennis Elbow (Tendonitis)



Astaxanthin improved grip strength (without pain) of tennis elbow sufferers by **93%** in 8 weeks

Joint Soreness After Exercise

- University of Memphis
Clinical Study
- Double blind, Placebo Controlled
60 subjects
- Placebo group showed joint
soreness for 48 hours, experimental
group had no soreness



Consumers *Feel* the Difference

Gandalf Astaxanthin® in Canada

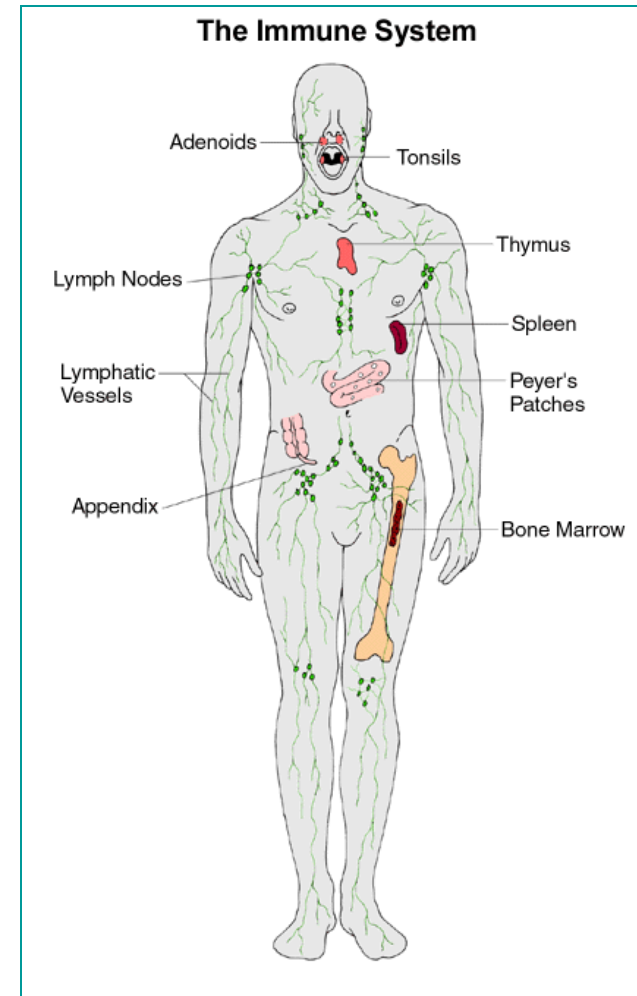
User Survey in USA

- 83% of users experienced less pain
- 60% experienced increased mobility
- 75% found that astaxanthin works the same or better than over-the-counter medications
- 60% found that astaxanthin works the same or better than prescription anti-inflammatories



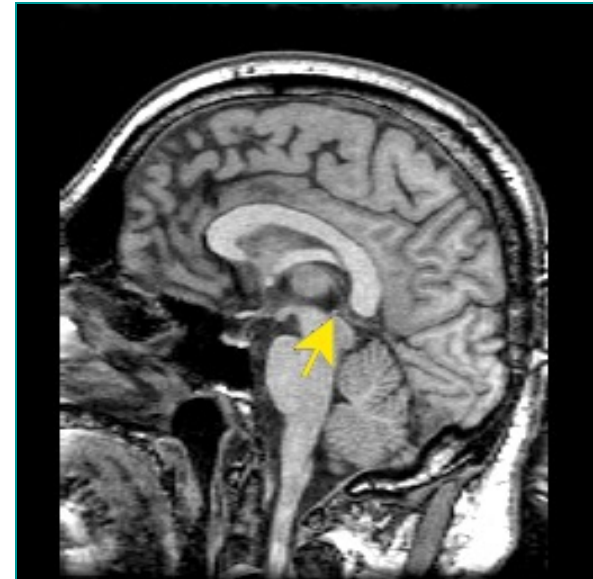
Immune Enhancement

- Clinical trial at various dosages
- Excellent immune system enhancement at dosages as low as 2 mg per day
- User survey: 80% experienced improved immunity or resistance to colds & flu



Central Nervous System

- Astaxanthin can cross the blood/brain and blood/retinal barriers
- Provides antioxidant protection to the brain, eyes and central nervous system
- Many carotenoids and antioxidants cannot effectively cross the blood brain barrier

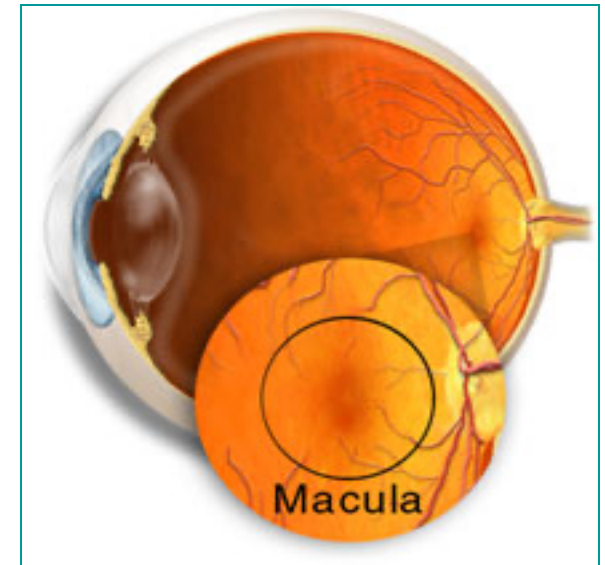


Eyes and Astaxanthin

Several Areas of Research

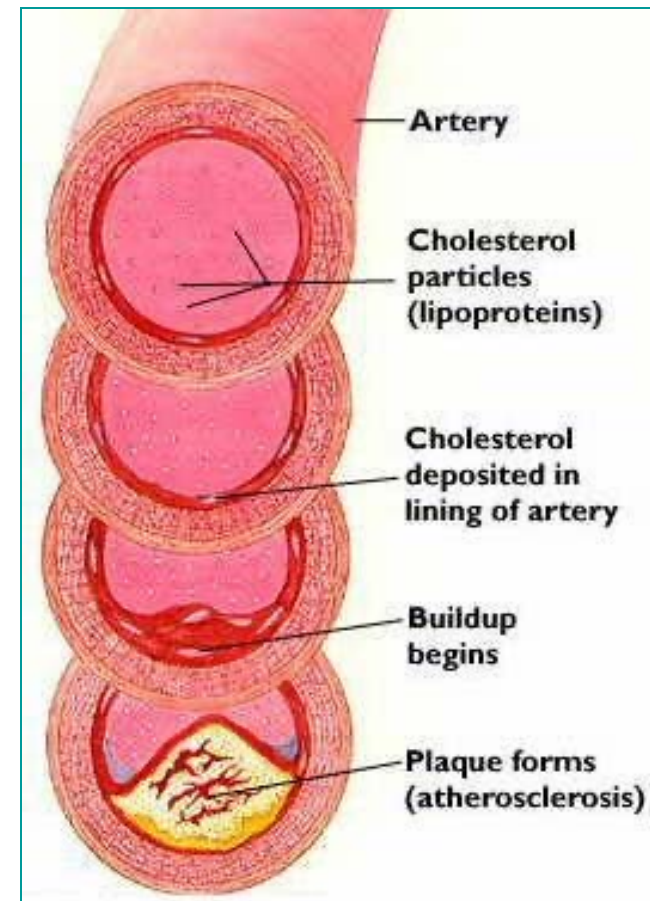
Top areas include:

- Protects eyes from light-induced damage
- Eye strain and fatigue (nine positive human clinical trials)
- Visual acuity (ability to see fine detail)




Blood Lipids and Cholesterol

- Studies done in Japan and Eastern Europe
- Significant improvement in cholesterol and triglyceride levels





Additional Cardio protective Properties

- **Prevents Ischemia (brain damage from stroke) in rodent models**
 - **Improves plaque stability in the arteries (rabbit model)**
 - **Prevents atherosclerosis (human study)**
 - **Improves blood flow (human study)**
 - **Completely negates the “Pro-Oxidant” effect of Vioxx**
- 

Oral Sunscreen

- Sunburn is inflammation of the skin
- 4 mg/day for only two weeks
- Results show significant increase in the amount of time to redden the skin




Skin and Beauty Use

- Four studies: Japan, Canada and Switzerland
- One on pure Astaxanthin
- Three with 1 – 2 other ingredients
- Consistent results—Improvements in:
 - Reduction of wrinkles and fine lines
 - Elasticity
 - Moisture levels
 - Smoothness
 - Spots and freckles





Ulcers

- **Inflammatory condition**
 - **Effective in reducing H. Pylori, a bacteria that causes ulcers**
 - **Human and animal studies**
- 

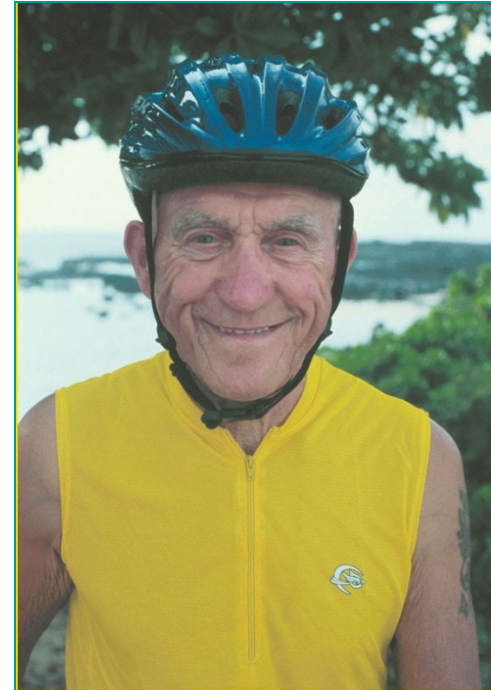
Nature's Aquatic Marathon

- Highest concentration of Astaxanthin is present in salmon's muscles
- Scientists theorize that the high levels of Astaxanthin allow salmon to make their heroic upstream swim



Use in Sports

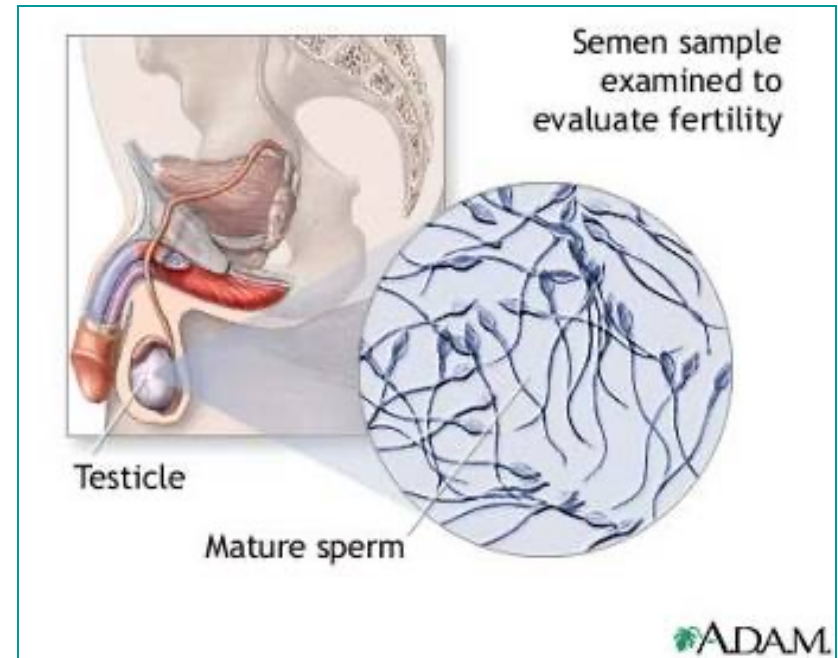
- **Double-blind human clinical in Sweden with 40 subjects**
- **Significant improvement in strength and endurance**
 - 4 mg per day for 6 months
 - **Experimental group did 62% more deep knee bends**
 - **Control group did 22% more**



Max Burdick, 78 year old triathlete and avid Astaxanthin user



Improvement in Semen Quality in Infertile Men

- Animal studies: horses and pigs
- Human study on infertile men
- Three month study = 16 mg/day
- 50% of couples in the experimental group conceived within three months





Cancer Deterrence (animal studies)

- No human clinical studies to date
 - Several positive animal and in-vitro studies
 - Astaxanthin has shown to inhibit carcinogenesis or reduce tumors in various organs including:
 - Liver
 - Bladder
 - Oral Cavity
 - Colon
- 
- 



Diabetic Benefits (animal studies)

Two rodent studies done in Japan on Diabetic mice showed improvements in:

- **Glucose tolerance levels**
 - **Blood glucose levels**
 - **Blood insulin levels**
 - **Renal (kidney) cell damage**
 - **Delayed the development of diabetic nephropathy**
- 

Recommended Dosages

- **Antioxidant** 2 – 4 mg per day
- **Arthritis** 4 – 12 mg per day
- **Tendonitis or Carpal Tunnel Syndrome** 4 – 12 mg per day
- **Silent Inflammation (C-reactive protein)** 4 – 12 mg per day
- **Internal Sunscreen** 4 – 8 mg per day
- **Internal Beauty and Skin Improvement** 2 – 4 mg per day
- **Immune System Enhancer** 2 – 4 mg per day
- **Cardiovascular Health** 4 – 8 mg per day
- **Strength and Endurance** 4 – 8 mg per day
- **Brain and Central Nervous System Health** 4 – 8 mg per day
- **Eye Health** 4 – 8 mg per day
- **Topical Use** 20 – 100 ppm

Product Availability

60 vegan capsules of 4 mg from
100% pure astaxanthin






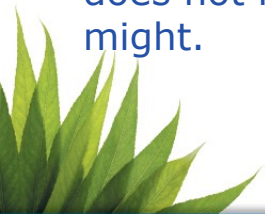
WHY Choose Gandalf

Gandalf's Infused Astaxanthin **The infusion Technology**

The Environment Gandalf's infused Astaxanthin is produced using a proprietary technology based on indoor closed-system bioreactors which are not affected by weather or seasonal changes that regularly impact outdoor algae operations.

The bioreactors used to grow the algae are also impervious to contamination by birds, frogs and other outdoor pathogen vectors. Controlling the algae's competitive environment by reducing contamination frequency and implementing rapid decontamination methods means that the production process is robust and the harvest schedule is predictable. Closed-systems provide consistent production rates, which ensures a constant delivery of high quality product.

Gandalf's infused Astaxanthin is extracted by cracking the plant cells at low temperatures directly from the algae into a carrier oil (e.g., safflower or olive oil). This proprietary process does not require any chemicals or supercritical extraction therefore it can yield Astaxanthin in its most natural state. This gentle extraction process is called infusion and does not require any high-temperature drying of the algae that other extraction processes might.





The Product

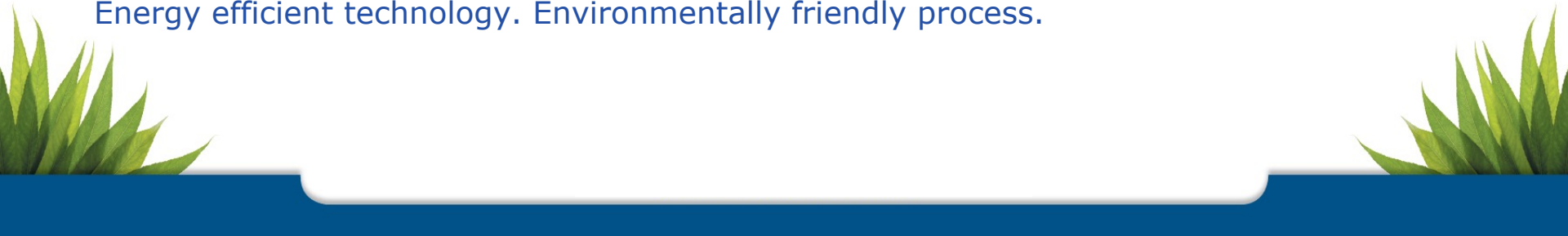
Gandalf's infused Astaxanthin is a 1% astaxanthin product, measured as free astaxanthin in an oily resin. The product's high quality is a result of the production method.

The Environment

Energy efficient LED technology is used to specifically target light absorption spectrum of the algae, thus eliminating 'photon wastage' that is inherent in most light sources (fluorescent, halogen, high pressure sodium (HPS) and even sunlight). Eco-friendly renewable resources are used, including hydro-electric power and geothermal temperature control systems. All production waste products are non-toxic. The algae is grown using spring water which is highly filtered to ensure purity.

The Future

This proprietary technology is modular and fully scalable in order to meet future growing demand. Infusion: a gentle and natural extraction process using edible oils Natural astaxanthin matrix. No drying necessary. Indoor cultivation: no external contamination. Energy efficient technology. Environmentally friendly process.



Optimum Protection Packaging


Our pouches are made with superior quality materials and are composed of multiple layers including aluminum to offer protection from air and light.



GANDALF ASTAXANTHIN



The only Canadian
supplier of
100% vegan
Astaxanthin.



All statements in this document are based on scientific research. Please consult your physician for personalized medical advice. Always seek the advice of a physician or other qualified healthcare provider with any questions regarding a medical condition. Never disregard or delay seeking professional medical advice or treatment because of something you have read on the Gandalf website and documentation.

Please contact us for further information.



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ASTAXANTHIN

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1-844-426-3253

www.GandalfAstaxanthin.com