

## ICELANDIC ASTAXANTHIN

Icelandic Astaxanthin includes 8 mg of our natural Astaxanthin which supports the protection of our cells when they are under oxidative stress. Astaxanthin from SagaNatura is produced in a sustainable way using high-tech green houses, renewable hydroelectric energy and pure Icelandic water.

- Suitable for people coming out of injury
- Suitable for endurance and strength training
- For joints, recovery and stamina
- This product is vegan
- This product is produced in a sustainable way
- Help maintain healthy heart, vision and brain activity
- It protects the skin against UV rays and harmful environmental pollutants
- Maintains moisture within the skin
- Maintains the structure of the skin to prevent it from breaking down and forming wrinkles
- It keeps the skin strong, healthy, soft, supple and reduces wrinkles considerably



**Astaxanthin** is one of nature's most powerful antioxidants, with a multitude of potent effects. Our bodies rely on antioxidants to relieve oxidative stress and help heal damaged cellular structures. Put simply, antioxidants fight the process of oxidation and free-radical induced oxidative stress, both of which lead to cellular breakdown over time.

Skin, muscles, ligaments, tendons, eyes, internal organs, the cardiovascular system, and nervous system are all receptive to Astaxanthin, making it uniquely active among antioxidants.

The purest, natural source of astaxanthin is micro-algae, primary producers of food for other organisms and animals, and a plant-based source of nutrients at the very bottom of the food chain. SagaNatura uses astaxanthin from freshwater micro algae *Haematococcus Pluvialis*. Unlike synthetic options made from petrochemicals, our astaxanthin is natural, sustainably produced and suitable for use by those following a vegan diet.



# Astaxanthin effects on Strength and Endurance

## Studies show that Astaxanthin can improve strength and endurance

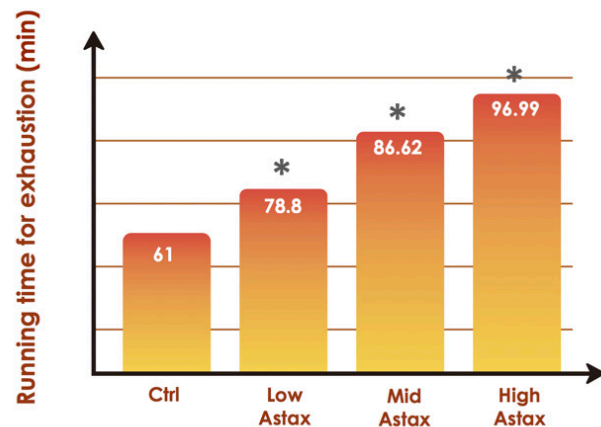
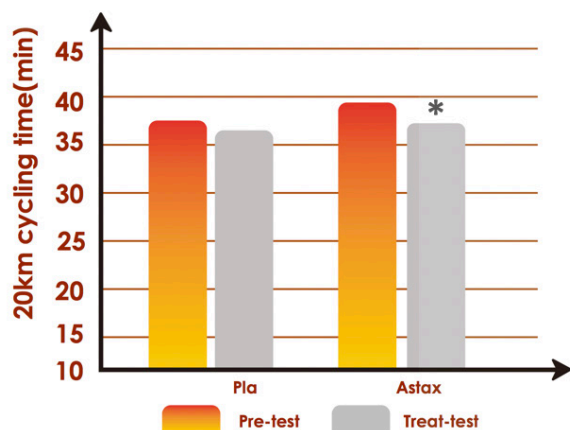
Boosts muscle endurance and recovery, lowers lactic acid and fatigue and increases muscle strength

Animal model - Study by Fan (2017)

### Increased running time to exhaustion

The study suggests that Astaxanthin administration can significantly improve running time and endurance.

Agro Food Industry Hi Tech. 2017 Apr; 28(2):73-76



Human trial – Study by Earnst et al. (2011)

### Cyclists improved time performance

Study results suggest that Astaxanthin can improve cycling performance. The Astaxanthin group improved time by 5.1% versus 0.8% for the control group.

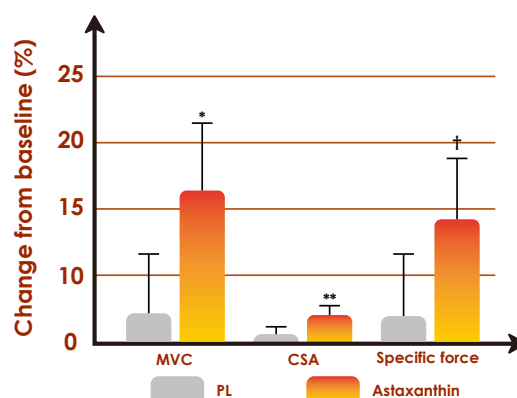
\*Earnst et al: Int J Sports Med. 2011 Nov;32(11):882-8.

Human trial – Study by Liu et al. (2018)

### Astaxanthin improves muscle performance in elderly

Study results suggest that ingesting 12 mg of Astaxanthin along with physical exercise can improve muscle strength and increase muscle mass in elderly subjects.

Changes in muscle properties after 3 months of training in AX formulation and placebo treated elderly subjects. Changes in maximum voluntary contraction (MVC), muscle cross sectional area (CSA), and specific force (MVC/CSA) are shown.



\*J Cachexia Sarcopenia Muscle. 2018 Oct; 9(5): 826–833.



# Astaxanthin effects on Cardiovascular System

## Natural Astaxanthin can improve cardiovascular health

Increases good and lowers bad cholesterol, reduces oxidative stress and enhances blood vessels circulation.



Human model – by Yoshida et al. (2010)

### Astaxanthin lowers blood triglycerides

The clinical trial suggests that Astaxanthin (6 or 12 mg/day for 12 weeks) can reduce circulating triglycerides and elevate HDL cholesterol in subjects with mild hyperlipidemia.

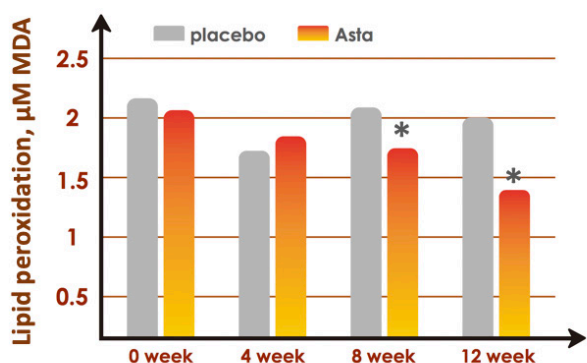
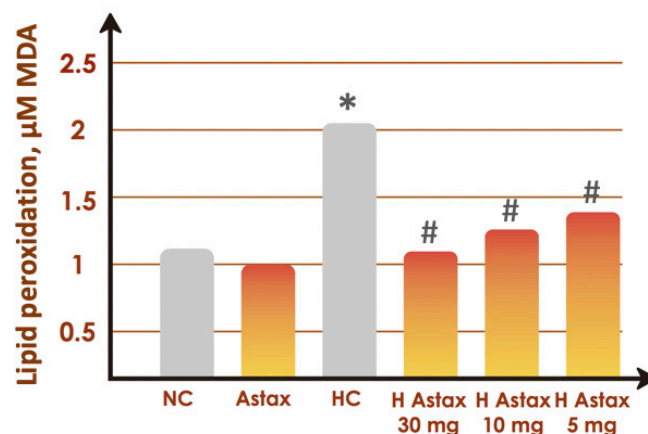
Yoshida et al: *Atherosclerosis*. 2010 Apr;209(2):520-3.

Animal model - by Deng (2016)

### Astaxanthin improves blood lipid profile

The study suggests that Astaxanthin can reduce circulating triglycerides and LDL cholesterol, elevate HDL cholesterol and reduce lipid peroxidation.

Deng: *Pharm Biol*. 2017 Dec;55(1):663-672.



Human model – by Choi et al. (2011)

### Reduction in LDL cholesterol and oxidative stress biomarkers

This 12 week placebo-controlled study suggests that Astaxanthin can reduce LDL cholesterol and significantly affect lipid peroxidation, which is a marker of oxidative stress.

Choi: *Phytother Res*. 2011 Dec;25(12):1813-8.



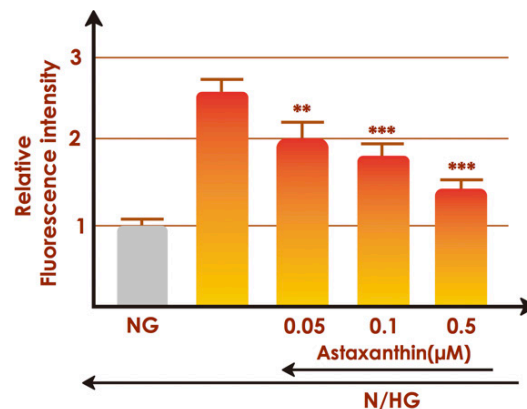
# Astaxanthin effects on Cardiovascular System

*In-vitro Model by Abdelzaher et al (2016)*

## Decreases oxidative stress

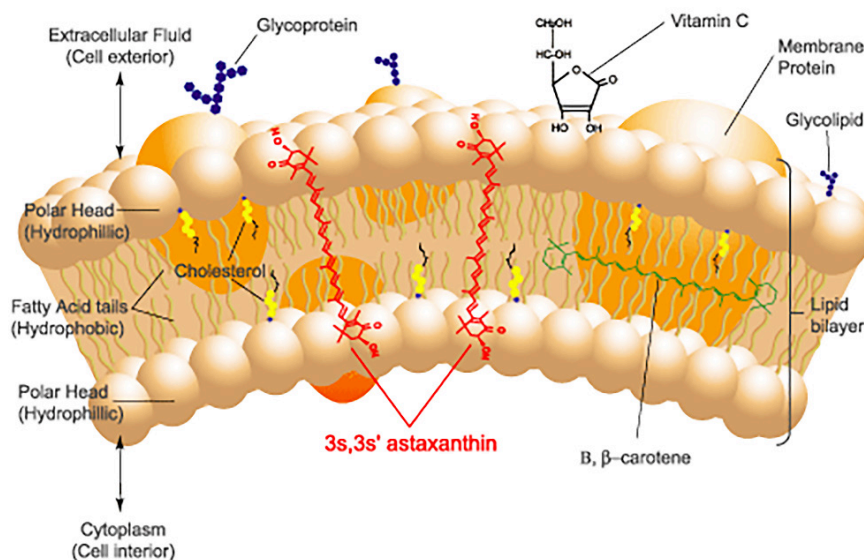
Study suggests that Astaxanthin can reduce oxidative stress induced damage caused by glucose fluctuations in human endothelial cells.

*Abdelzaher: Life Sci. 2016 Apr 1;150:24-31.*



Antioxidants are molecules that fight the damage made by free radicals, by giving electrons to the free radicals and thereby neutralizing them.

## Powerful Singlet Oxygen Quencher & Cell Membrane Protector



**Astaxanthin** is one of nature's most powerful antioxidant.

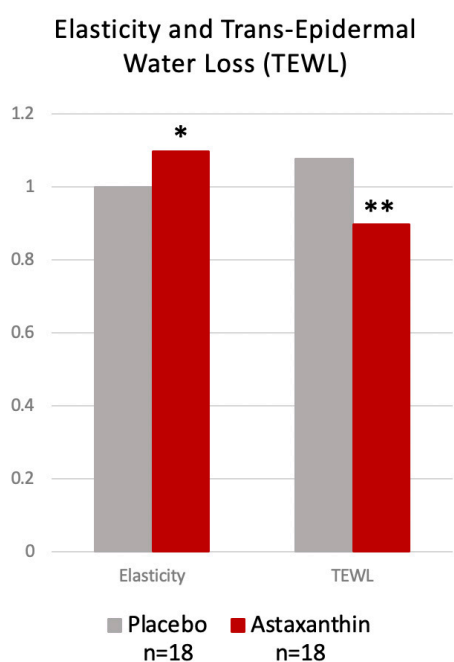


# Astaxanthin effects on skin health

## Studies show that Astaxanthin can reduce damage caused by photo aging

Chronic exposure to ultraviolet (UV) radiation from the sun contributes to skin photo aging,

Which is clinically characterized by dryness, pigmentation, laxity and deep wrinkles.



*Tominga: Acta Biochim Pol. 2012;59(1):43-7.*

*Double blind placebo controlled study of Tominga et al. (2012)*

### Improved crow's feet skin elasticity & protection from TEWL of cheek

The study showed that Astaxanthin intake significantly improved skin elasticity and transepidermal water loss (TEWL) in human subjects.

*Tominga: Acta Biochim Pol. 2012;59(1):43-7.*

*The study of Niwano et al. (2015)*

### Reduced skin inflammation during solar exposure

In vitro study showed that Astaxanthin reduced human cell inflammatory response after UVB exposure, as indicated by reduction in IL-8 secretion.

*Niwano: Cytokine. 2015 Jun;73(2):184-97.*



*The study of Nagakima et al. (2012)*

### Fights against skin age-spots

Study demonstrated, in a human epidermal skin equivalent model, that Astaxanthin downregulates the melanocyte master transcription factor (MITF) which is a master regulator of melanogenesis.

*Nagajima: Arch Dermatol Res. 2012 Dec;304(10):803-16.*



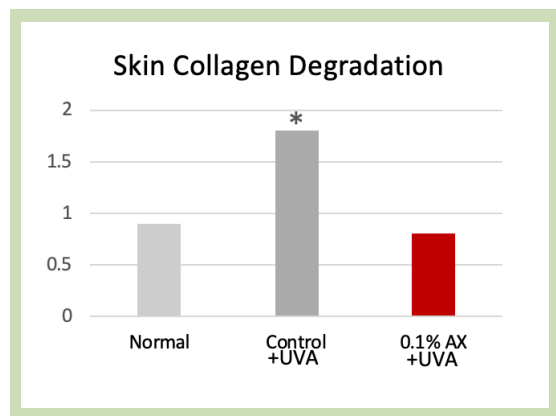
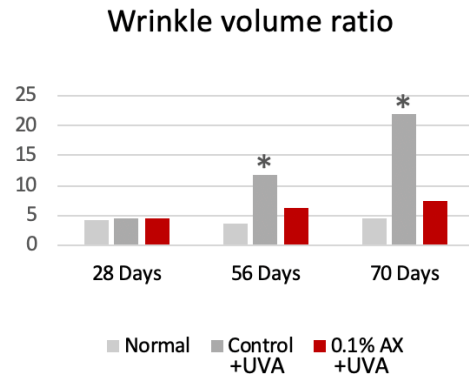
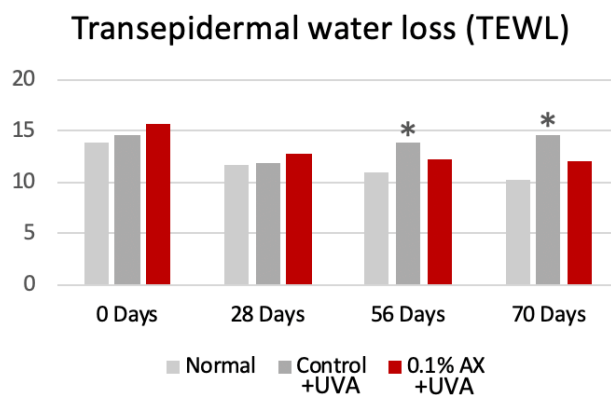
# Astaxanthin effects on skin health

*The study of Komatsu et al. (2017)*

## Protection against UVA light exposure, wrinkle formation and collagen degradation

Hairless mice exposed to UVA light showed that Astaxanthin intake has a positive effect against trans-epidermal waterloss and wrinkle formation.

*Komatsu: PLoS One. 2017 Feb 7;12(2):e0171178.*



To protect cells from free radicals, we have an inbuilt defense mechanism; antioxidants.

## Astaxanthin antioxidant activity



Antioxidants are molecules that fight the damage made by free radicals, by giving electrons to the free radicals and thereby neutralizing them.

**Astaxanthin** is one of nature's most powerful antioxidant.



# ICELANDIC ASTAXANTHIN specification sheet

## Description

Product name	Icelandic Astaxanthin
Brand name	Private label
Suggested dosage	2 per serving
Usage	Oral

## Packaging

Aluminum bottle
60 softgels per bottle
Also available in bulk



## Product specification



Capsule shape, size	Oval, 5a
Appearance	Clear shell with red oil fill
Microbiological quality	Complies with regulation (EC) No. 2073/2005

## Capsule fill composition (1 capsules)

Astaxanthin	4 mg
Sunflower oil	160 mg
Natural tocopherols E306	29 mg
- Vitamin E	4 mg

## EC approved health claims

- Vitamin E contributes to the protection of cells from oxidative stress
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## Capsule shell composition

Modified corn starch
Glycerol
Carrageenan
Sodium carbonate

## Other information

Irradiation	No
GMO	No
Organic	No
Suitable for Vegetarians	Yes
Suitable for Vegans	Yes
Best before date	3 years from production
Storage conditions	Store in dry area at room temperature

