



WOW Your Customers By Adding Clinically-Proven **AstaReal® Astaxanthin To Your Sports Nutrition Product**

Find out how this flexible ingredient **powers up performance, speeds recovery** and **benefits the whole body.**

A SPECIAL REPORT FROM ASTAREAL |

If you're creating sports nutrition products, you know this market is grabbing an ever-expanding consumer base. It's reaching beyond elite athletes, pulling in gym rats and weekend warriors alike . . . 70-something seniors and 20-something gamers . . . high powered executives and even higher-powered soccer moms.

Every single market research group acknowledges this is a booming market with sales projections as high as \$45.27 billion by 2022.¹ No doubt, the hungry market is out there. Yet, with everyone elbowing in on the action *how can you grab some attention for your products?*

Good ole protein powders and electrolyte drink mixes will continue to hold center stage, as consumers will continue to love these basics. So the breakthroughs will not be found in moving away from these staples.

No, you spark consumer interest when you turbo charge these standard products with strategic ingredient additions.

Consumers are looking for pumped up versions of their tried and true favorites.

So how do you do this?

1st**Deliver results consumers can *feel* tangibly.**

Consumers are looking beyond the science for results they can see for themselves firsthand. In athletics it's easy to measure yourself: You can lift more weights, more times . . . You can run longer or run faster.

Products that will gain new consumers – *and keep them* – will be products that can back up their claims by making a tangible difference.

2nd**Use ingredients that give them everything in one simple solution** – a pre-workout boost, post-workout support, along with whole body benefits.

Consumers want to make nutrition easy. Instead of multiple bottles, pills and powders, they want one, simple product that does it all. They want something that gives them pre- and post-workout support along with whole body benefits like beauty, brain and immunity support.

3rd**Deliver it in a form that matches your consumer's preferred use** – whether it be a snack bar or an effervescent drink mix.

That's why this report can make such a difference to your bottom line. As you will learn in the next few pages,

AstaReal® Astaxanthin is a natural, clinically-proven ingredient that delivers better performance and noticeably faster recovery in as little as 4 weeks.

It also goes beyond exercise to benefit the *entire* body

By adding this one ingredient to your formulation you can inspire your customers to say, “Wow, I’m able to train at a whole new level. I can see a noticeable difference in my performance. *This works!*”

This single ingredient is clinically proven to offer comprehensive sports nutrition support – both pre- and post-workout. But it doesn't stop there . . . It offers whole body benefits covering brain, beauty, energy, heart, vision and immunity.

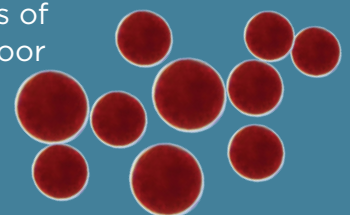
And to top it off,

AstaReal® Astaxanthin is flexible enough to fit in a whole range of sports nutrition products from powders, to bars, to RTD's, to gels.

AstaReal® Astaxanthin Is An Antioxidant Extracted From Algae

One of the nature's antioxidants, astaxanthin's deep red pigment colors krill, shrimp, lobster, flamingos, crab and salmon pink. Algae produce it. Then these animals accumulate astaxanthin as it travels up the food chain.

AstaReal goes straight to the source of this amazing nutrient. We harvest it directly from the freshwater algae *Haematococcus pluvialis*. Unlike most other brands of astaxanthin, AstaReal cultivates the algae in state-of-the-art, indoor photo-bioreactors in the USA.



AstaReal® Astaxanthin: Clinically Proven To Improve Performance, Endurance And Recovery

With over 150 studies under its belt – 60 of them human clinical studies - AstaReal® Astaxanthin has a proven track record.

And when it comes to sports nutrition, professional and amateur athletes alike are discovering AstaReal® Astaxanthin can help transform their training and performance.

In basic terms, athletes want four things from their sports nutrition products . . .

For pre-workout products, they want to pump up their performance. They want

- 1. More sustained energy** – to go further and faster. So you they can put their “all” into their entire workout instead of flagging at the end.
- 2. More power** – the ability to concentrate muscle strength into powerful bursts of energy that result in higher jumps, longer throws and faster sprints.
- 3. More focus** and *mental* stamina.

And when it comes to post-workout, they want

- 4. Less soreness and faster recovery.** So sports nutrition consumers can train harder - day after day - without soreness getting in the way. This kind of consistent training leads to *better results sooner*.

AstaReal® Astaxanthin supports all four of these endeavors. It

- 1. Enhances the body’s energy production at the cellular level** in a targeted way that few nutrients seem to do. This boosts performance as well as activities like muscle building: And
- 2. Provides your body with unmatched protection from the hazardous byproducts of energy production and energy use**, free radicals. Simply put, when troublesome free-radicals are minimized, wear and tear on the body is minimized. This allows muscles to recover faster.

AstaReal® Astaxanthin does this by going right to where your body needs help when it comes to energy production and speeding recovery from a hard workout . . . your cells’ mitochondria.

As world champion trail runner and snowshoe racer **Joseph Gray** points out,

“AstaReal® Astaxanthin has become a vital piece of the puzzle in my work to reach for high level performances. It helps make it possible for me to maintain a heavy workload over long periods of time and then recover quickly so I can get back to training the next day.”



Unmatched, Targeted Support For Your Cells' Powerhouses, The Mitochondria

The mitochondria are tiny organelles found in nearly every cell in your body. Mitochondria transform sugar and fat into ATP, your body's energy currency. Your body uses ATP to energize every single activity it undertakes.

Pre-clinical studies have shown that 35-50% of astaxanthin collects preferentially in the membranes of cells' mitochondria.²

Cells with high amounts of activity, like cardiac muscle cells or skeletal muscle cells, tend to have more mitochondria - *sometimes thousands of them* - in order to fuel all their activity.

When your body is working particularly hard - running, jumping, building new muscles - it's using the energy produced by millions of these tiny power plants.

But there's a catch to this formula . . .

Mitochondria: Ground Zero For Free Radical Damage

Mitochondria "burn" substrates like glucose, or lipids, or even amino acids - breaking them down in a chain reaction. This produces energy your body uses.

But it also produces a lot of free radicals.

As Dr. Mark Miller PhD, nutrition and astaxanthin expert, points out: "Therein lies the problem. Like a little tiny nuclear reactor, it cannot produce energy without also producing free radicals that could kill the cell."

However, your body already has a built-in mechanism for addressing this landmine. "The secret is to use free radical scavengers, especially ones that work in and around membranes of the mitochondria," says Dr. Miller.

Your body produces its own antioxidants in order to neutralize these destructive free radicals. **However, your body's innate free radical scavengers may not be able to keep up with the accumulation of free radicals - especially during strenuous workouts and training schedules.**

Nootropics And Sports Nutrition

Boosting The Most Important “Muscle” When It Comes To Sports Performance

As any serious athlete will tell you: Your mind is the most important “muscle” when it comes to performance.

You need focus to get the most out of your training. And you need this focus even more in competition. **For this reason, more and more athletes - at all levels - are increasing their emphasis on the brain game.**

And AstaReal® Astaxanthin offers nutritional support for this.

Just like muscles – if not more so – your brain uses enormous amounts of energy, generating swarms of free radicals as a result. And just like your muscles, your brain suffers when these free radicals have free reign.

AstaReal® Astaxanthin

- Is one of the special nutrients able to **cross the blood-brain barrier**. There it provides its **powerful antioxidant** support to keep the brain in top shape.
- Helps your brain get the nutrients it needs through **healthy blood flow**. Research indicates AstaReal® Astaxanthin significantly improves circulation.³

Clinical research shows supplementation with AstaReal® Astaxanthin seems to help improve memory, mental quickness and multitasking while reducing mental fatigue linked to stress.^{4 5}

It's a no-brainer:

Add AstaReal® Astaxanthin to your sports nutrition product for brain power along with the muscle power.



Nature's X-Game Athlete: **SALMON**



X Games athletes defy gravity on their bikes, skateboards and snowboards, twisting and turning as they aim for greater and greater heights.

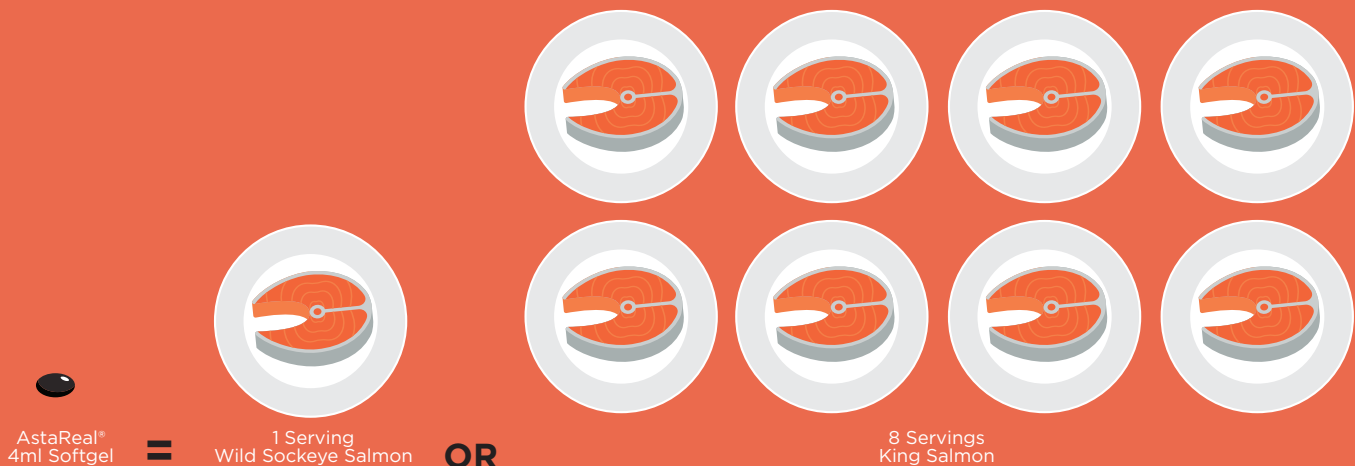
Yet as awe-inspiring as these athletes are, they can't hold a candle to the feats performed by wild salmon when they make their return trek to their spawning grounds . . .

Swimming upstream 900 miles for an elevation gain of 7000 feet, these salmon leap up waterfalls, rapids and other obstacles. Day after day after day throughout spawning season.

Their brilliant pink musculature reveals their secret for maintaining the energy needed to hurdle these obstacles - natural astaxanthin.

"The salmon would probably not be able to make this journey if it wasn't for the astaxanthin in their muscles," notes Dr. Miller.

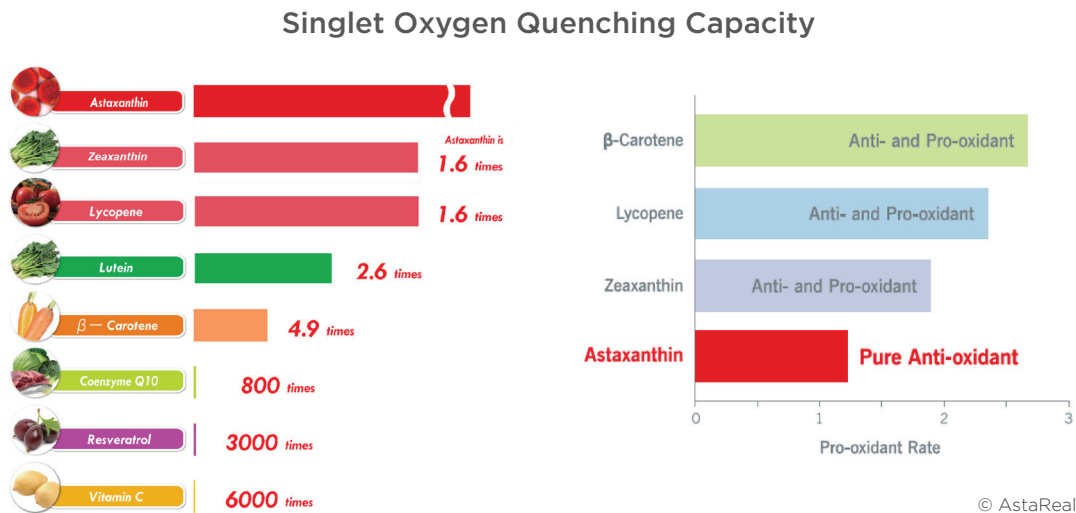
However, take note: *To get a daily 4 mg of astaxanthin, every day you'd need to eat 1 serving of wild sockeye salmon and as much as 8 servings of King salmon.*



Astaxanthin Provides Mitochondria Unmatched Antioxidant Protection

This is where dietary supplementation with a powerful antioxidant like astaxanthin comes in. As Dr. Miller points out, “Nothing scavenges free radicals in and around the mitochondrial membrane like natural astaxanthin!” Not only does it accumulate in the mitochondria . . .

1. Astaxanthin is perhaps one of the most powerful antioxidants on the planet.



Better yet,

2. Astaxanthin helps boost your body’s own antioxidant enzymes.⁶ This further multiplies the antioxidant protection astaxanthin brings to your mitochondria.

So how does this translate into the results consumers are looking for?

Astaxanthin’s boost to mitochondrial health and efficiency translates directly into *more squats, more power, and less downtime*. Something that really gets sports nutrition consumers excited.

4 Certifications
Make AstaReal® Astaxanthin Particularly Trustworthy

AstaReal® Astaxanthin is made in a NSF/cGMP facility. And it is the only brand

- 100% produced in the USA, using indoor cultivation and USP certified
- Paleo-certified by Paleo Foundation.
- Gluten free certified
- Non GMO



Clinically Proven: AstaReal® Astaxanthin Gives Athletes The Edge - More Power, More Endurance, Less Soreness

No less than 13 human clinical studies demonstrate AstaReal® Astaxanthin can be a powerful ally for athletes.

First let's look at performance:

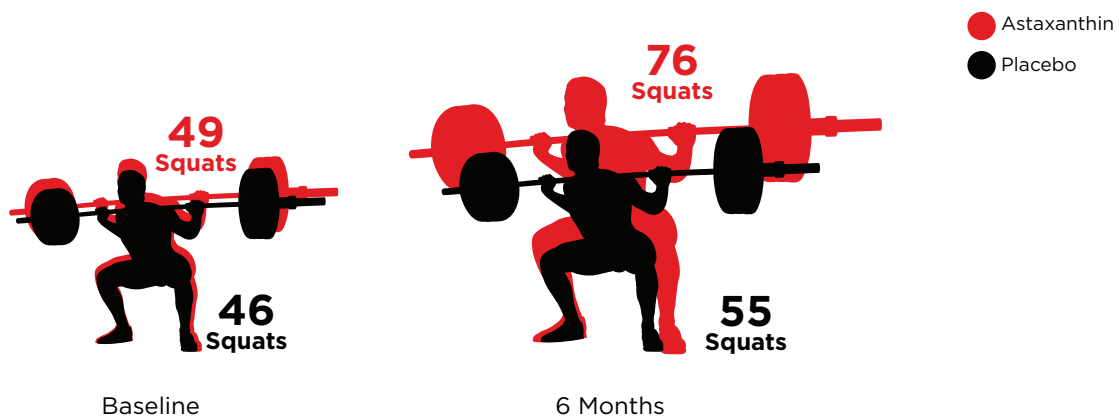
Performance Study #1

40 healthy paramedic students undergoing endurance training (ages 17-19) were divided into two groups. One group took AstaReal® Astaxanthin for 6 months, the other took a placebo.

At the end of the study, the placebo group had improved from 46 weighted squats at baseline to 55 weighted squats on average - a 20% increase.

However, the group that added astaxanthin to their training saw improvements that put them in a whole different league . . .

After six months, they went from an average of 49 squats to an unbelievable 76 squats! An increase of 55%!⁷



Malmsten, et al., *Carotenoid Science*, 13, 20-22 (2008)
Earnest, et al., *Int J Sports Med.*, 32(11): 882-8 (2011)

Performance Study #2

14 competitive cyclists were divided into two groups, one receiving a placebo, the other taking AstaReal® Astaxanthin for 4 weeks. In a timed trial after this period, the placebo group saw a 19 second (0.8%) improvement with an average of 1.6W (0.5%) increase in power output on average.

The AstaReal® Astaxanthin group, on the other hand, blew them out of the water! On average these cyclists saw a 121 second improvement (5%) with a 20W increase (15%) in power output. No comparison!!⁸

AstaReal® Astaxanthin Makes Recovery Easier, Transforming How Athletes Can Train

The boost AstaReal® Astaxanthin gives to athletic performance and endurance can make a huge difference.

But where athletes really gain an edge and make it to the podium is *through consistent training*. And because of this, **athlete after athlete will tell you that recovery makes all the difference**. Nothing frustrates an athlete more than having the mental discipline to train, but having a body that just isn't up to it.

But what if you could reduce the exercise-induced muscle damage and inflammation that causes soreness?

What if you could get through a tough workout . . . and then launch into another tough workout within a day or two?

This is how athletes can build up their skills, power and endurance exponentially.

As world champion trail runner and snowshoe racer **Joseph Gray** points out

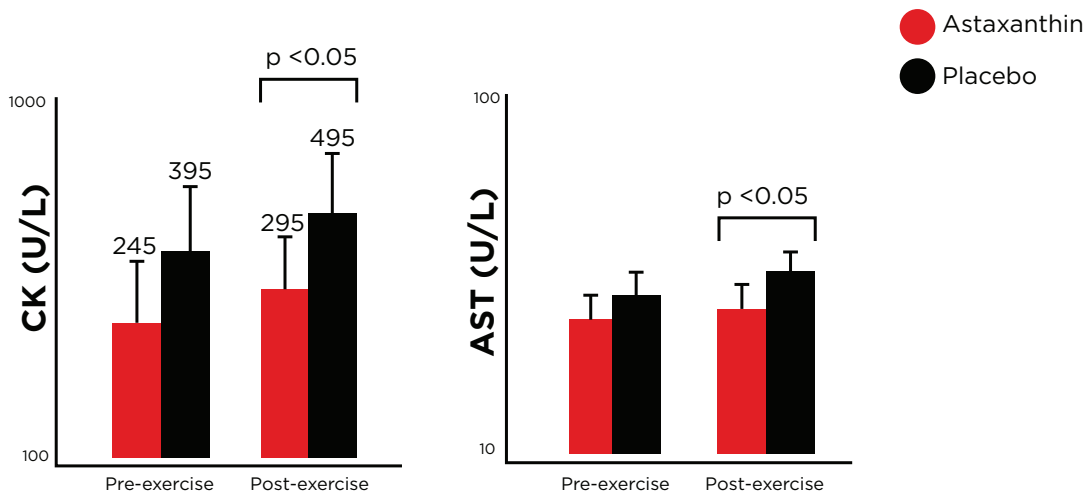
“During heavy workload phases of training I would notice my body was not recovering well on days I didn't use AstaReal® Astaxanthin. The muscles were sore for longer periods of time. My body was stiff following long days of training. In contrast, when I supplemented with AstaReal® Astaxanthin during these tough training periods the stiffness would diminish faster so my body was ready to go a day later.”

AstaReal® Astaxanthin has proven itself as a powerful aid in reducing muscle damage, exercise-induced inflammation, and speeding recovery so athletes can train harder and more effectively . . .

Recovery Study #1

After 3 months of supplementation with 4 mg of AstaReal® Astaxanthin each day, the elite soccer players involved in the study engaged in a rigorous 2 hour training session. Blood samples were taken before and after the activity.

While all the athletes had some markers of muscle damage – like the enzymes creatine kinase and aspartate aminotransferase – **the athletes who had been supplementing with AstaReal® Astaxanthin had significantly less of these muscle-damage markers in their bloodstream.**⁹



Recovery Study #2

Elite soccer players were divided into two groups. One group supplemented daily with 4 mg AstaReal® Astaxanthin for 90 days and one group took a placebo. When the two groups were tested for CRP, a marker of exercise-induced inflammation, the difference was dramatic.

The soccer players who had not taken AstaReal® Astaxanthin showed a 57% increase in CRP levels. **Meanwhile, the soccer players who had supplemented with AstaReal® Astaxanthin showed absolutely no increase in CRP levels.**¹⁰



In other words, AstaReal® Astaxanthin seems to protect muscles against damage and exercise-induced inflammation – even after intense training.

How does AstaReal® Astaxanthin make recovery so much easier?

As Dr. Mark Miller explains, “Muscle cells are kind of weird. They’re very responsive to instruction. So if you tell them to work *work work*, they’ll do that until they tear. **That’s the soreness you feel the next day – the muscle damage you’ve just endured during exercise.** That’s the feeling you have when you’re on the couch and thinking you might not do that again.”¹¹

Sports Nutrition Bonus:

Astaxanthin Helps Keep Immunity Strong . . . Even When Athletes Are Pushing Their Limits

Extensive exercise puts stress on your body. This can undermine your body's first line of defense. It decreases immunoglobulin levels in your upper respiratory tract's mucous membranes.

AstaReal® Astaxanthin may help counter this trend.

- In one 8-week study, half of the participants took AstaReal® Astaxanthin daily. After engaging mental and physical stress-inducing activities, their saliva's cortisol and immunoglobulin levels were measured. The control group saw an immunoglobulin decrease. Study participants who supplemented with AstaReal® Astaxanthin saw no change in their immunoglobulin levels.¹²
- Similarly, over the course of 3 months, young soccer players who took AstaReal® Astaxanthin saw an increase in immunoglobulin levels in their saliva while the placebo group saw no significant change.¹³



AstaReal® Astaxanthin seems to help athletes keep their training schedule without missing a beat.

AstaReal® Astaxanthin

- ✓ Reduces exercise-induced inflammation by modulating 9 different inflammatory signals.
- ✓ Protects your body against a first wave of free radicals created during the intense metabolic process of exercise.
- ✓ Reduces the second wave of free radicals created when your immune system works to clear out and remodel muscle tissue damaged by exercise.

By facilitating this three-step process, it reduces the damage created by exercise. Furthermore,

- ✓ AstaReal® Astaxanthin promotes more efficient aerobic energy production in mitochondria using fat as fuel. This helps reduce the use of anaerobic energy production, when lactic acid is produced.

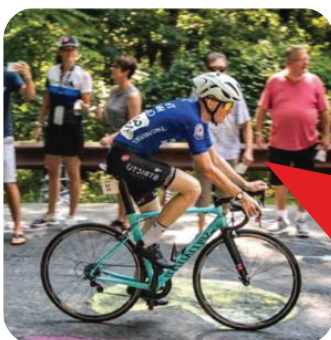
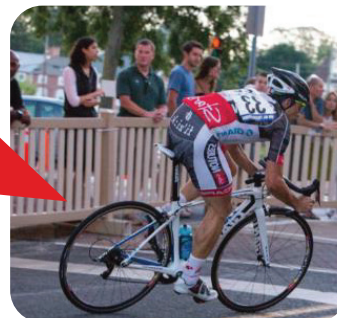
As a result, athletes can train harder than ever.

Of course, the proof is in the athlete's firsthand experience . . .

Elite Athletes Say AstaReal® Astaxanthin Makes All The Difference In Recovery

Gatorade Sports Science Institute study participants can't say enough good things about AstaReal® Astaxanthin.

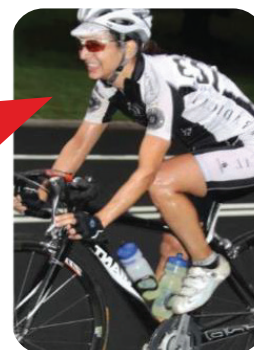
Says Daniel Z., a professional cyclist who has been competing for 20 years, "I felt that AstaReal® [astaxanthin] helped **decrease muscle soreness after high intensity workouts** and sped up my recovery."



James S., a competitive cyclist from New York, agrees, "AstaReal® [astaxanthin] gave my overall sense of wellbeing a boost. It seemed to allow me to train harder especially on consecutive days, and go deeper in races. Muscle soreness after workouts was reduced."

Female athletes have noted the same powerful results when it comes to recovery . . .

Says Maria Q, cycling out of San Rafael, California, "I found that AstaReal® [astaxanthin] helped me with recovery. Usually I need a longer amount of time to recover after a hard effort on the bike. I found that while using AstaReal **this period of discomfort seemed shorter and less intense.**"



Sue O, a competitive rower out of Washington, concurs, "When I took [AstaReal®] astaxanthin, it helped my body heal, it helped my body recover and it also gave me the energy that I needed, when I needed it. **My body doesn't feel exhausted after training or rowing. I feel great!**"



At age 55, Sue rowed with her team in a race that took *26 hours* to complete. She had started taking AstaReal® Astaxanthin 2 months before the race. And amazingly enough, *just 2 days* after this arduous race, Sue was back out rowing.

These Athletes **Want You** To Put AstaReal® Astaxanthin In Your Sports Nutrition Product*

*Are you making products geared towards these folks in the sports nutrition market?**



Mark is a highly competitive Division 1 college track and field athlete.

He loves excelling and he has financial incentives as well since his scholarship depends on his performance. Yet his body can't keep up with his determination to train harder. Too often he struggles to get through practice because of the soreness in his muscles. Mark would love something that would allow him to "go for it" with his training. AstaReal® Astaxanthin is clinically-proven to boost athletic performance and speed up recovery so athletes can train harder. Plus - **as a bonus that any hardworking college student will love - AstaReal® Astaxanthin offers clinically-proven protection for eye fatigue linked to excessive screentime.**

At age 68, **Susan** loves retirement.

After years of grinding it out, she and her husband can finally enjoy the fruits of their labor. They have the time - along with the finances - to go mountain biking in the summer and backcountry skiing in the winter. The world is theirs to explore . . . *if only their bodies can keep up.* Isn't there something safe and natural that she and her husband could use to give their aging bodies a little extra support? Price is not a concern. They just want something that works with science to back it up.

AstaReal® Astaxanthin was clinically proven in the landmark sarcopenia study to help increase endurance, strength and mobility in seniors.



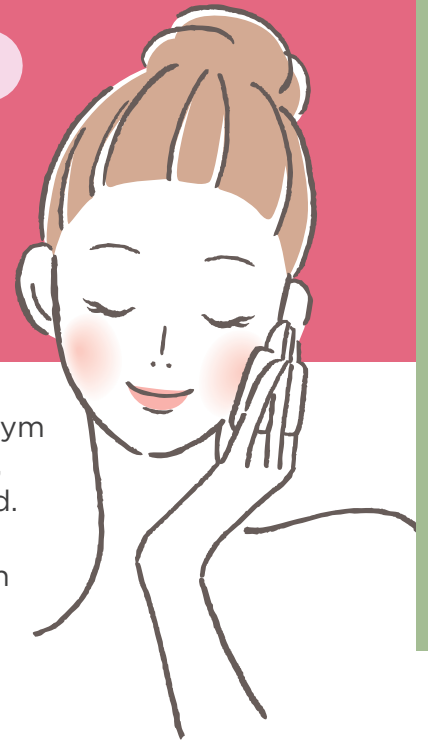
Patrick, a professional triathlete, is always training.

Swimming, biking, weights, running. He reads all the science and is always on the hunt to help his body push its limits and crest over into grabbing a spot on the podium. Patrick has high hopes this new ingredient will allow him to train harder AND give him an energy boost. Not to mention its UV protection. Always outside, his fair skin has been giving him grief. **AstaReal® Astaxanthin has been clinically proven to improve sports performance and recovery as well as strengthen skin's natural resistance to UV damage.**

*hypothetical composites

Bonus Benefit:

AstaReal® Astaxanthin Safeguards Collagen For Beautiful Skin



What's the driving force that gets most of us off the couch and into the gym each day? Sure, health counts. But for most folks it's the desire to look fit, trim and muscular. Simply put, we workout because we want to look good.

So, wouldn't you love to tell your sports nutrition consumers that they can power up their workout and beautify their skin with the same ingredient? Especially those folks who love the outdoors but hate looking weather-beaten!

With AstaReal® Astaxanthin you've got this covered. **AstaReal® Astaxanthin helps combat visible aging from within.**

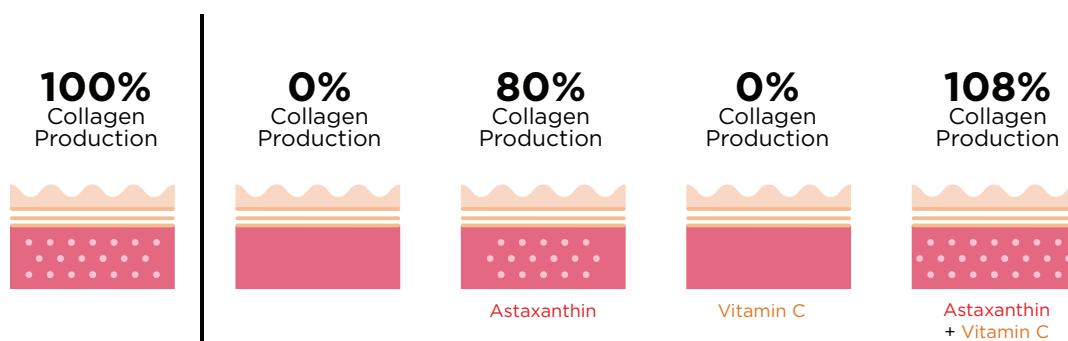
How? Free radicals from UVB light exposure bring collagen production in the skin to a screeching halt. *In vitro* research suggests AstaReal® Astaxanthin can help turn this around, **preserving 80% of collagen production in skin cells after exposure to UVB light.**

As for clinical results . . .

- AstaReal® Astaxanthin has been proven to improve skin's elasticity and hydration, improve smoothness, and reduce the appearance of wrinkles and age spots.
- In vitro studies indicate it seems to boost collagen production.
- When used in combination with other means of skin protection, it can help reduce the risk of early skin aging caused by environmental exposure.
- As a result, when consumers using AstaReal® Astaxanthin look in the mirror, they see skin that's tighter, smoother and glowing with health. Beautiful skin!

Want an advantage in the sports nutrition market? *Appeal to your customers' desire to look gorgeous . . . Highlight how your product's AstaReal® Astaxanthin does double-duty helping keep their muscles toned and their skin looking youthfully smooth.*¹⁴

ROS



Research Shows AstaReal® Astaxanthin Is Perfect for Aging Athletes

While much of this research has been geared towards professional athletes, a recent study conducted at the University of Washington honed in on how AstaReal® Astaxanthin gives seniors a boost when it comes to strength training.

In 4 months, AstaReal® Astaxanthin supplementation combined with strength training helped boost muscle strength in seniors by 14%. Meanwhile, there was no change in muscle strength in the placebo group - *even though they did strength training as well.*¹⁵



AstaReal® Astaxanthin Makes Any Sports Nutrition Product A “Total Package”

Because of AstaReal® Astaxanthin’s multifaceted and uniquely targeted mitochondrial support, it can make any sports nutrition product that much more effective.

More power. More endurance. Less soreness.

Just as significantly, AstaReal® Astaxanthin helps deliver a total package of benefits that goes well beyond sports nutrition. AstaReal® Astaxanthin satisfies the growing list of benefits the evolving sports nutrition consumer wants . . .

Sports nutrition consumers are looking for more energy not just in the gym, but in the office, at home, and throughout their entire lives. They want sharper reflexes, more cognitive power and beautiful skin to match a fit body . . .

With clinically-proven benefits when it comes to stress, cognition, vision, energy, skin as well as sports performance and recovery AstaReal® Astaxanthin delivers on all of these fronts.

By delivering the advantage consumers are looking for, AstaReal® Astaxanthin can give your product the edge in the fiercely competitive sports nutrition market.

What To Look For In Astaxanthin

Not all astaxanthin is the same. Here's what you should look for:

- ✓ **Natural astaxanthin instead of synthetic astaxanthin.**
Synthetic astaxanthin has a different molecular profile than natural material. While the only clinical study on synthetic astaxanthin indicates it may have some health benefits¹⁶, little clinical research has been done to measure its impact in comparison to natural forms. Animal studies have shown that the synthetic version falls far short of its natural form.¹⁷ Unpublished research from Creighton University and Brunswick Laboratories indicates that natural astaxanthin is 20 to 60 times more potent than the synthetic astaxanthin.¹⁸
- ✓ **Astaxanthin extracted from the algae *H. pluvialis*.**
This astaxanthin extract has been shown to be the most potent.
- ✓ **Astaxanthin cultivated indoors.**
Indoor cultivation using filtered water and air eliminates contaminants from bugs, pollution, and weather. Also, it is easier for manufacturers to mask astaxanthin's natural algal smell and taste with astaxanthin produced using AstaReal's proprietary approach to indoor production.
- ✓ **Astaxanthin that is 4.5-5% biomass at harvest.**
Outdoor cultivation falls short with yields 1.5-3% biomass at best.
- ✓ **Astaxanthin that is extracted at full maturity and is chlorophyll-free.**
Chlorophyll detracts from astaxanthin stability.
- ✓ **Sustainably-produced astaxanthin.**
Indoor cultivation using sustainable energy sources minimizes the use of energy, water loss by evaporation, and space, while protecting against environmental pollutants.
- ✓ **Relatively stable at high temperatures and in the presence of oxygen.**
AstaReal® Astaxanthin has been demonstrated to have the highest level of stability in both these areas.
- ✓ **Third-party tested as free of PAH carcinogens and skin irritants like pheophorbide.**
- ✓ **Other 3rd party guarantees of quality control and safety.**
Such as USP-certified, FDA Notified GRAS, NSF-GMP registered facility, non-GMO Project verified, preferred astaxanthin supplied as approved by NASC, Health Canada Natural Product Number (NPN), Paleo-certified by the Paleo Foundation.



7 Tips For Formulating Your Next Best Seller With Natural Astaxanthin

Over 60 clinical studies prove AstaReal's high quality natural astaxanthin delivers results. When you deliver noticeable results through your products your customers will keep coming back for more.

However, there are some ways to help optimize its impact – both in terms of health benefits and piquing your customers' interest:

Tip #1 Food and beverages are just begging to be “astaxanthinized”. Close to 90% of current natural astaxanthin use is in supplements.¹⁹ Astaxanthin's bioavailability is increased when taken right after a meal or as part of it. In Japan, astaxanthin has been used in everything from yogurt to coffee, energy drinks to even alcohol. Other possibilities include baked goods, chocolate and candies, sports nutrition beverages, trail bars and drink mixes.²⁰

Tip #2 Use the right form of astaxanthin. AstaReal® Astaxanthin is available in different concentrations as oil extracts, powders, cold water soluble powder, microencapsulated beadlets, and water soluble emulsion.

Tip #3 Use the right dose. Supplementation with 2 mg and upwards per day will bring benefits over the long-term. Most clinical studies on eye health have used 6 mg per day. 12 mg has been shown to help with exercise recovery, cognition, cardiovascular health and overall wellbeing. AstaReal is the first astaxanthin supplier to submit a successful New Dietary Ingredient Notification (NDIN) to the FDA, raising the dosage of astaxanthin to 12 mg/day.

Tip #4 Formulate with fats. Lipids help astaxanthin absorption.²¹ Astaxanthin can also help protect fats from rancidity. Mimicking its natural presence in krill oil, albeit trace amounts, it makes a beautiful partnership with omega-3's.

Tip #5 Combine it with other key nutrients. Other antioxidants, like vitamins E and C as well as glutathione, can help protect the antioxidant capacity of astaxanthin.²² Combine it with **lutein and zeaxanthin** for comprehensive eye support. Pair it with zinc, another AREDS nutrient, for extra eye, muscle support and improved sleep;²³ or **collagen** for synergy in sports nutrition and skin health.

Tip #6 Choose the right astaxanthin product, delivery system and packaging to protect against degradation from temperature and oxygen. AstaReal® Astaxanthin oil, produced indoors in the U.S. under strict quality controls, has been proven to maintain higher stability than other brands in direct comparisons. Oil encapsulated forms and soft-gel delivery system offers the best bioavailability with protection for astaxanthin during manufacturing, transport and storage.²⁴ Beadlets can protect astaxanthin from contact with other ingredients that might cause this issue.^{25 26} Packaging that protects against oxygen and light – like blister packs – also extends astaxanthin's shelf-life.²⁷

Tip #7 While not approved by the FDA as a colorant, formulate to account for its deep red color. This color may not work so well with certain products and can be masked. On the other hand, it pairs beautifully with berry, fruit and chocolate flavors. It also taps into consumers' association of vibrant color with antioxidants.²⁸

Why Choose AstaReal® Astaxanthin

1

AstaReal pioneered the development of natural astaxanthin as a nutritional ingredient. As other companies have entered the astaxanthin industry, AstaReal has continued to lead the industry in research, safety, quality, technical innovation and reliability.

2

The sponsor of over 40+ safety studies, including several clinical studies, AstaReal has been the leader in establishing natural astaxanthin's safety.

3

AstaReal's high quality astaxanthin is the most studied form of the nutrient worldwide. Over 150 studies (including 60+ clinical trials) have been done on AstaReal® Astaxanthin, many funded by AstaReal directly. Of the 525 *H. pluvialis*-sourced astaxanthin studies on PubMed, 68% of them used AstaReal® Astaxanthin.

4

With 12 approved patents as of 2016, AstaReal is also the leading holder of patents related to use of natural astaxanthin in humans. **This depth of research confers a high level of expertise within company that is available to clients to help with formulation, manufacturing and marketing.**

5

AstaReal's two facilities consistently produce high quality natural astaxanthin at 4.5% biomass or more per batch. This can be attributed to its innovative indoor cultivation of the algae, *H. pluvialis*, using photobioreactors. AstaReal pioneered use of this technology in response to the booming demand for high quality, contaminant-free astaxanthin. **By using indoor cultivation, AstaReal is able to minimize contamination, maximize astaxanthin stability as well as optimize the algae cultivar's maturation and astaxanthin concentration.**

6

Renewable hydroelectric power from the Columbia River fuels production at the Moses Lake facility. It is the only company to use indoor cultivation in the USA. And it is the only company to both cultivate and extract algae in the USA.

7

AstaReal® Astaxanthin is Paleo-certified by Paleo Foundation. AstaReal is one of the only astaxanthin brands with a Natural Product Number (NPN) from Health Canada. It is also the only source for the studies approved to support NPN status.

Eager to give your sports nutrition products (and the people who buy them) the AstaReal® Astaxanthin edge? We're ready to help you . . .

Call us at **Toll-free: 877-227-8287 (877-2-ASTA-USA)**

Email us at **Contact@astarealusa.com**

Visit our website at **astarealusa.com** (corporate)

astaxanthin.net (consumer education)



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