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Astaxanthin as antioxidant.

Dr. K. Bekker & Beth Taylor's book Real Food for Healthy Dogs and Cats

This antioxidant fights off damaging free radicals 550 times faster than even vitamin E"

With hundreds of times the antioxidant activity of other potent nutrients, powerhouse "**Astaxanthin**" helps protect cells, organs, and tissues from oxidative damage, even in tucked-away places like your dog's eyes, spinal cord, brain, and nerves.

Dog owners frequently complains that staying on top of all their dog's health needs feels like a daunting task.

Especially since they know their dogs are surrounded by pollutants and toxins in their homes, yards, in public and some are its airborne.

Breaking down a dog's needs to the basics seems to help many frustrated owners take better control.
Perhaps you'll find it helpful, too, when you're feeling the same way.

Looking at the three most important aspects to a dog's well-being.

Species-appropriate nutrition.

A sound, resilient body, which includes muscle tone, body weight, teeth, and internal organs.

A balanced, functional immune system to protect your dog from pathogens.

Interestingly if I don't address all three of these aspects, total health cannot occur.

Taking care of the first two aspects is pretty straightforward...

Feeding your dog the diet their body was designed for and thrives upon.

Taking care of their teeth, skin, and coat.

Even digestion and gut health are fairly easy to check off the list.

You can cover these aspects with regular teeth brushing and oral exams, making sure your dog gets extra omega-3 fatty acids like krill oil in their diet, and providing digestive enzymes and probiotics to help support digestion and a healthy gut.

However, when it comes to immune health, things become a bit murkier... *Many owners don't fully understand what's involved, much less where to start.*

Looking at aspects to better understand how to support your dog's immune health and why your dog's immune health matters.

Supporting your dog's immune health from an early age is key for a long, healthy life.

From an early age, your dog explores their world with all their senses.

Obviously, you can't control where they sniffs and licks, but only you can help support their immune system to cope with whatever they comes in contact with.

This is simpler to do with a younger dog whose immune system is operating at full tilt.

But as your dog ages, their immune function declines and do require more support – your special attention.

Everyday stress, pollutants and toxins, excessive vaccines, certain ingredients in the food you give, and various health conditions **produce free radicals in your dog's body which can and do affect immune function.**

Free radicals – or damaged and highly unstable oxygen molecules with a single unpaired electron – travel around your dog's body looking for electrons to steal from *stable* molecules.

Once they're successful at swiping the electrons they need, they leave behind ***new unstable molecules, or more free radicals.***

This process is called "oxidation," and once it begins, it can and do produce a dangerous chain reaction that generates more and more free radicals in the body, placing stress on your dog's immune function.

Looking at the mystery behind oxidation relating to immune health.



Oxidation in half an apple exposed to air.

You know what happens when you slice an apple and leave it exposed to air - it turns brown or **"oxidizes."**

This oxidation occurs because the cells in the fruit have been damaged. The oxygen in the air reacts with enzymes in the fruit, creating a rust-like appearance on the surface, not unlike what happens to a bicycle left out in the rain.

However, you've probably discovered that if you dip apple slices in lemon juice right after you cut them, they don't turn brown.

This is because the natural antioxidants in the fruit juice halt the oxidation process.

Oxidation in your dog's body is much the same.

Just as a browning piece of cut fruit damages the fruit, free radicals can cause damage in your dog's body, potentially leading to less-than-optimal health as well as premature aging.

Studies show that free radicals can hit the cells in the body 10,000 times each day, breaking down and weakening cell membranes.

And they have been shown to knock out the communication pathways between immune system cells.

The oxidative stress resulting from free radical damage can also will weaken and damage cellular DNA, or the "blueprint" of your dog's cells.

Cells depend on their DNA to tell them what to do and when to divide. If a cell becomes damaged, it can't function optimally - simple as that.

DNA is so important to cell health that scientists now believe that DNA damage may be a big part of the aging process and can possibly affect normal cell division and growth.

The role of antioxidants in cellular health.

Antioxidants are most important for cellular health, including the eyes, brain, and nerves.

Just see above how antioxidant-packed lemon juice protects fruit cells from oxidation.

It's not much different with your dog's cells.

Antioxidants are powerful compounds that help bodies fight off the harmful effects of oxidation and keep cells healthy.

Antioxidants help protect your dog's cells from free radical damage by:

Neutralizing oxidizing free radicals, leaving them less harmful.

Reducing oxidative stress in your dog's body and protecting the dog's cells' delicate DNA.

Supporting cellular, tissue, and organ health.

As an extra bonus, certain antioxidants can cross your dog's blood-brain and blood-retina barriers, making them especially valuable for protecting delicate brain, nerve, and eye tissues.

Dr. K. Bekker & Beth Taylor's book *Real Food for Healthy Dogs and Cats*, you'll find lots of tips and recipes for adding antioxidant-rich foods to a well-balanced, species-specific raw food diet.

Even if you're feeding your dog a commercial diet now, you can boost the nutritional value of the food by mixing in some finely chopped, antioxidant-rich produce like collard greens, spinach, kale, carrots, or cooked sweet potatoes.

No matter what type of diet you feed your dog, the dog likely has a tremendous need for antioxidants because of the reasons mentioned.

And of all the antioxidants recommend to dog owners, there's one antioxidant that stands head and shoulders above the others – in every way a true “king antioxidant.”

This ‘King’ of the carotenoid antioxidants performs like no other in Its Class.

A while back, scientists discovered a class of naturally occurring pigments called carotenoids that showed potent health-supporting, antioxidant properties.

Carotenoids are the compounds in foods that provide vibrant color — from green grasses to red beets, to the brilliant yellows and oranges of bell peppers.

These carotenoids even responsible for the beautiful rainbow of colors found in flowers.

Recently, **one particular carotenoid** has become the focus of a large and growing number of peer-reviewed scientific studies.

It has certainly attracted my attention for the potential it holds for my veterinary patients.

Even though it's a member of the carotenoid family along with beta-carotene, lycopene, and lutein, **astaxanthin** outperforms all the others in its ability to scavenge free radicals:

550 times more powerful than vitamin E.

65 times more powerful than vitamin C.

54 times more powerful than beta-carotene.

5 times more powerful than lutein.

*In fact, scientists believe **astaxanthin** is nature's most powerful antioxidant.*

Its strong free radical scavenging ability is what helps **astaxanthin** protect cells, organs, and tissues from oxidative damage so well.

It's also far more effective than other carotenoids at "singlet oxygen quenching" – a type of oxidation that occurs **with sunlight**.

Why Astaxanthin as antioxidant is the best;

Astaxanthin provides potential benefits to protected parts of the body that aren't normally reached by most other antioxidants.

Unlike beta-carotene and lycopene, **astaxanthin** can cross the blood-brain and blood-retina barriers to support brain, eye, and central nervous system health.

Astaxanthin has some other important properties, too, that may influence how it supports your dog's health:

It protects both the water- and the fat-soluble parts of cells, **inside and outside the cell**, and can **penetrate every part of the body, including the eyes**.

It combines with membrane tissue and becomes a “cell membrane bridge” **to help escort free radicals out of cells**.

It's a potent **UVB light absorber and helps reduce DNA damage**.

Unlike other antioxidants that can only handle one free radical at a time, **astaxanthin can handle more than 19 free radicals – and multiple types – all at once**.

Astaxanthin support your dog's health as well.

In recent years, researchers have studied the potential health effects of astaxanthin with both dogs and cats.

Other extensive studies have been performed with mice.

Potential benefits that astaxanthin offers for every cell in your dog's body.

Helps support a healthy normal immune response.

Aid with cardiovascular health support.

Aid in supporting joint and muscle recovery after exercise.

Helps support cellular mitochondrial function and energy production.

Help support comfortable, flexible movement.

Nearly all the cells in your dog's body contain mitochondria, the part of the cell that produces energy.

Often called the “powerhouse” of cells, mitochondria are an important area **in need of support** for any age dog – **which is exactly what astaxanthin provides**.

The 5-Point test in considering an Astaxanthin antioxidant formula.

Note! >> Even though it's in the carotenoid family, **you can't get astaxanthin from fruits and vegetables**.

Nor can your dog's body produce its own.

Humans and animals **must obtain it from their diet**, which isn't easy to do unless you happen to be a marine animal.

Note! >> The only way to get **astaxanthin** naturally is to eat something that's in the food chain of the original source.

Astaxanthin occurs in krill, salmon, algae, plants, and a few fungi and bacteria.

The most valuable type of astaxanthin is produced by the microalgae *Haematococcus pluvialis*.

The algae produces the molecule for its own survival when its food supply dries up.

Astaxanthin serves as a "force field" to protect the algae from lack of nutrition or intense sunlight.

Look for five things when choosing an astaxanthin product for your dog:

Make sure it's created from marine microalgae and not fungus or other less effective forms.

Look for a formula that contains some type of oil or fatty acid to help maximize absorption.

Make sure it's made using **astaxanthin "oil"** instead of powder which can cause costly formulation stability challenges.

Purchase only formulas that are guaranteed stable and effective by the manufacturer (insist on an airtight capsule or the newer airless pump containers so you know it will stay fresh to the last drop).

Only buy products that are manufactured without applying synthetic chemical solvents, preservatives, impurities, and residues.

Sometimes it can be difficult to know for sure that a product meets this 5-point test.

Your best bet is **to assume** it doesn't if the points aren't clearly stated.

Although synthetic **astaxanthin** is routinely used for adding color to farmed salmon, it's not commonly seen as a supplement for animals.

However, that could change in the future.

If you do happen to see synthetic astaxanthin, avoid it at all costs **as it's made from petrochemicals.**

**Looking at Dr. Mercola's Pet Astaxanthin antioxidant supplement
*Available on Amazon to order.***



There's no guessing.

Is made with organic **astaxanthin.**

Is created using *Haematococcus pluvialis* microalgae and not fungus.
Contains medium-chain triglycerides (MCTs) to help maximize absorption.

Is made using **astaxanthin "oil"** instead of powder to enhance stability.
Is formulated without chemical solvents.

Contains no preservatives, impurities or residues.

Is carefully monitored and tested for purity, showing a high concentration of Astaxanthin isomers and the absence of microbiological and heavy metal contamination.

With **Dr. Mercol's Pet Astaxanthin antioxidant supplement** you also get medium-chain triglycerides.

MCTs (medium-chain triglycerides) provide an immediate source of fuel and energy for your dog and they promote optimal digestion and nutrient absorption.

MCTs (medium-chain triglycerides) are also known for their ability to enhance athletic performance and may even help support your pet's ideal weight.

Dr. Mercol's Pet Astaxanthin antioxidant supplement for dogs and cats comes in a simple-to-use spray pump.

Not only does it make **Astaxanthin** easier to use, our airless pump technology keeps the product fresher, too.

Ease of use airless technology helps preserve the fragile oils from oxygen intrusion and keeps your astaxanthin fresh until the last drop.

It's the *only* product on the market that offers remarkable stability in an easy-to-administer pump.

Easy to portion according to your dog's weight, so you get the correct portion every time. Not like cutting open messy, oily capsules.

This product have no taste, so you won't need to worry about your offering it with food or treats.

No need to "pill" your dog *or* give nasty tasting concoctions – two common barriers gone.