KERATOCONUS EYE DISORDER

THE RIGHT FUEL FOR ACTION

ASTHMA & PALEO

PREVENT GALLBLADDER INFECTION

LOREN CORDAIN, PH.D.
KERATOCONUS EYE DISORDER RESPONDS TO SUPPLEMENTS

Loren Cordain, Ph.D., Professor Emeritus

Keratoconus is a degenerative eye disorder involving structural changes within the cornea that can cause visual distortions, such as multiple images, streaking and light sensitivity.

I believe that keratoconus would have been rare or non-existent among our pre-agricultural ancestors simply because if it were entirely a genetic maladaptation, it would have been rapidly eliminated by natural selection.

Given the incidence of keratoconus in Western populations, it seems likely that environmental factors introduced since the advent of agriculture may trigger this disease. Clearly diet and sunlight exposure (vitamin D) have to be implicated.

I want to thank Łukasz for his well-researched inquiry (below) regarding the use of supplements to improve this eye disorder. I have also included recommendations regarding supplementation from my colleague Pedro Bastos.

“Dr. Cordain,

I have recently found an interesting article about nutritional therapies for ocular disorders. It indicates that the pathogenesis of keratoconus appears to involve a chronic inflammatory process.1

Because of the association of keratoconus with atopy2-3 and inflammation, it might be worthwhile to investigate keratoconus patients for food allergy. Avoidance of allergenic foods might decrease the inflammatory process that appears to play a role in the development of this disease. Avoidance of allergens might also reduce symptoms of ocular allergy, thereby decreasing the need to rub the eyes.

One practitioner treated 11 patients (18 eyes) with keratoconus using a combination of vitamin D (in the form of irradiated ergosterol, a precursor to vitamin D2), and a calcium preparation containing 64-percent bone meal and 32-percent dicalcium phosphate. The dosage of vitamin D was 15,000 IU per day (larger Alternative Medicine Review Volume 13, Number 3 2008).

Ocular disorders doses were used in some cases, taken after breakfast, while the dosage of supplemental calcium was from 140 to 1,260 mg daily, depending on the amount of milk consumed by each patient. The treatment period ranged from three months to three years.

All patients showed improvement in vision and a flattening of the cones on ophthalmologic examination. Plaster-of-Paris casts taken of the anterior segment of the eyes of three patients confirmed the improvement noted on ophthalmologic examination.4

In his report, this practitioner cited evidence that keratoconus develops in dogs and rats fed a diet low in vitamin D and calcium. The mechanism of action of these nutrients in the treatment of keratoconus is not known.

Keratoconus developed in rats fed a vitamin A-deficient diet5 and, to a lesser extent, in rats fed a vitamin E-deficient diet.6

In a case report, a 34-year-old man with keratoconus, posterior subcapsular cataract, severe atopic dermatitis, and asthma was
treated daily with 1,200 IU vitamin E, 600 mcg selenium, 80 mg pyridoxine, 15 mg riboflavin, and 2 g vitamin C. Improvement of keratoconus and regression of corneal opacities were seen after two months. Atopic dermatitis and asthma also improved markedly.7

Dr. Cordain, maybe in my case calcium supplementation is also good idea?"

Łukasz K.

Here are Pedro Bastos’ recommendations regarding the use of supplements in treating keratoconus:

Antioxidants seem to be helpful in treating keratoconus, especially vitamin E and selenium. If you decide to take antioxidants, go for a broad-spectrum formula because these nutrients act synergistically so taking one or two and forgetting the others may do more harm than good. Remember that vitamin E should be taken as a whole: the 4 tocopherols and the 4 tocotrienols - not just the alpha tocopherol that most people take.7-9

Research has indicated that oxidative stress seems to play a very important role in this disease.10,11

It is possible that matrix-metalloproteinases (MMPs) are involved in keratoconus. While some lectins upregulate these MMPs, green tea catechins inhibit MMPs. Thus, drinking green tea could be beneficial.12-18

As you said, vitamin A deficiency seems to be involved in this disorder. If you decide to take vitamin A supplements, make sure that your vitamin D levels are in the optimal range (50-70 ng/ml), and do not take more than 5000 UI of retinol.

Your suggestion to investigate food allergies among keratoconus patients is interesting because there seems to be a higher prevalence of TH2 diseases (such as allergy, eczema and asthma) among these patients.

Normally, the most common food allergies involve dairy, eggs, soy, tomato, citric foods, peanuts, some nuts, and shellfish. Some studies suggest that when a person has allergies to multiple foods, the main reason involves a leaky gut. Thus, in addition to following The Paleo Diet, it may be advisable to also avoid tomatoes and peppers as in the autoimmune version of The Paleo Diet.

Regarding calcium, I believe that the information on calcium and vitamin D came from an article published last year in Alternative Medicine Review. Actually, there isn't much evidence that taking calcium will help. Nevertheless, it is highly advisable that you remain in calcium balance for your overall health.

I recommend eating more vegetables from the brassica family (such as broccoli and kale) since they are good sources of highly bioavailable calcium. I also suggest reducing salt intake, and eating more fruits and vegetables in order to get in calcium balance.

Even if it doesn't have a therapeutic effect on keratoconus, I advise that you maintain your levels of 25- hydroxyvitamin D3 in the range of from 50 to 70 ng/ml for optimal health.

*For sources see References: Section I*
PALEO ALTERNATIVES IN EVERYDAY LIFE

Nell Stephenson, BS USC EXSC

Have you ever felt bothered by the fact that it’s extremely simple to get any type of junk food anywhere, yet it can be quite challenging to find healthy options? While we can make it work by preparing and bringing our own food, wouldn’t it be ideal if we could simply walk into any local shop and choose the steamed veggies we want with grilled salmon!

Sound like I’m living in fantasyland? Maybe so, but if we all take small steps to lead by example, and encourage those around us to gear toward healthier eating options, change is bound to begin.

Speak with the board of your kids’ school about replacing some of the poorer nutritional choices with better options. Some schools include teaching kids to garden and grow their own produce, which they later eat as part of the curriculum.

Arrange a meeting with the manager of your local health club, and ask them to offer fresh, whole fruit for sale, rather that some of the ‘energy bars’ they sell, many of which are worse than candy bars due to the amount of artificial ingredients in them!

Invite parents of your kids’ friends over for a Paleo potluck with their kids. Serve foods that your kids enjoy so other parents see there are options beyond boxed macaroni and cheese with cartoon characters on the cover designed to entice kids to want them. I can’t tell you how many times I’ve had clients say that they buy those items for their kids because they honestly feel they are healthy options, and require little preparation time!

Bring fresh fruit to your office as an offering for business colleagues, rather than doughnuts or coffee. Offer to arrange the next company luncheon so that YOU can be in charge of what will be served, and it can be foods OTHER than sandwiches in thick white bread followed by cookies!

The ideas will keep coming once you get started.

I realize we’re not going to awaken tomorrow and see the local gas-mart serving kale, but one little step at a time can lead to huge gains, so let’s get on it!

THE RIGHT FUEL FOR A FULL LIFE

Loren Cordain, Ph.D., Professor Emeritus

Having experienced his best performance after four weeks on The Paleo Diet, U.S. Olympic Triathlete coach Joe Friel used The Paleo Diet to coach national and international caliber athletes.

This performance enhancing diet isn’t just for Olympic hopefuls, though. The Paleo Diet has helped others just like us to overcome personal challenges and poor health. We’d like to share Kelly’s story to encourage others to join her in turning their obstacles into triumphs.

After an embarrassing failure to climb Mt. Hoffman, Kelly turned her life around to ultimately make it to the top of Yosemite’s highest peak. With the help of Chris LaLanne (who continues grand uncle Jack LaLanne’s fitness legacy), she learned to use nutrition...
and exercise to regain lost fitness. Chris introduced Kelly to the benefits of The Paleo Diet, and here’s what that has meant to Kelly:

“It was spring of 2008 when I finally had had enough: enough with being uncomfortable in my own skin, enough with being incredulous at the reflection in the mirror, enough with disparity between who I thought I was and my actual physical reality.

I had always been athletic throughout school and in college (swim team, crew team) and on my own without the structure of the NCAA (adventure racing and marathons). Then a series of injuries and their subsequent surgeries and rehabs had me ‘out of the game’ for over three years.

When a photo assignment came to shoot a portrait on top of Mt. Hoffman, Yosemite’s highest peak, I took it with relish. ‘That’s right up my alley,’ I thought. The panting, sweating difficulty I had on the climb (and inability to make it to the summit) was so embarrassing it wasn’t just a wake-up call: it was a five alarm/bucket of cold water/shake you out of bed realization. This is what I had become - unfit, flabby and fat.

I started going to my local gym using the treadmill and stairmill. I counted calories. I was never a ‘junk food junkie,’ but portion control wasn’t part of my vernacular either. I thought a calorie was a calorie, regardless of the source. Of course, I did lose a few pounds as will happen on 1,000 - 1,500 calories a day, but I was ALWAYS hungry - stomach growling kind of hungry.

I knew this was a battle that needed reinforcements, and help arrived when I stepped through the doors of LaLanne Fitness. I did the ‘Baseline’ workout and although I’m sure I was another panting, sweating mess, all I remember was that it was fun. Chris laid out the interconnectivity of the CrossFit model: strength/speed/flexibility/diet in the simplest common sense approach. The irony is that it is far from common. Fads and quick fixes are much more numerous despite being ineffective time and time again.

I saw results from the CrossFit workouts immediately. I had never lifted weights beyond bicep curls, and now I was giddy about strength workouts. I had to do almost everything scaled, but I did it. I had good fitness momentum but as soon as I addressed my diet, my health and capabilities went to the next level.

First I learned and incorporated the Zone Diet. I admit that I struggled at first because I was now forced to pay attention to my food. No more mindless grabbing of the cereal box, and having my third or fourth bowl of the day. Now I was enlightened to the fact that a calorie isn’t just a calorie. Fat isn’t bad and the USDA’s food pyramid holy grail of grains isn’t always good...A leaner, fitter athlete kept emerging.

I was having success but realized even with my Zone block approach, I was still eating some heavily processed foods. Food bars and soy milk were part of my daily intake.

Chris LaLanne introduced us to The Paleo Diet at a Saturday nutrition talk. What a revelation. It took baby steps, but my 5+ year addiction to vanilla soymilk ended. In fact, my sweet tooth became manageable for the very first time - EVER. Now if I have a ‘treat’ (such a misnomer!), I feel the negative effects (sluggish, headache, sugar seeking) within the hour.
I have no idea why I thought it was okay to not give my body good, clean fuel when I’d never do that to my car. Strange. Chris has us keep nutrition logs so there’s accountability amongst my fellow CrossFitters, but more importantly to myself.

It’s been one year since this journey began. My 60+ pound weight loss accounts for all the new clothes in the closet, and The Paleo Diet accounts for the whole organic makeover of my cupboards and refrigerator. My foods are now perishable instead of shelf stable. And, I’m ‘back in the game’ going for the summit every day.”

Kelly

Thank you Kelly for sharing your hard work and insight to help inspire others to take control of the quality and enjoyment of their lives.

CEDAR PLANK COOKING

Nell Stephenson, BS USC EXSC

As much as I like to grill outdoors, sometimes it can feel like a hassle, especially if your barbecue is of an older generation and it’s hard to clean, start the fire and measure cooking time.

Another great way to reap similar flavor to what you might get on an outdoor grill is to use a cedar plank in the oven. This is quite simple and low cost. Cedar planks are sold at many markets. Just soak the plank for an hour or two in water to ensure the plank itself won’t burn.

I usually opt for fillet, such as salmon, sea bass, or black cod, to name a few. Sometimes I’ll keep it extremely simple and use no seasonings other than a touch of olive oil. Other times may warrant more of a punch, so I’ll make a host of other seasonings or rubs to use on the flesh side of the fillet. Rosemary, shallot and oil are favorites for a lighter fish. If you’re inclined to eat something a bit spicier, try a salt-free Cajun rub on a thick piece of salmon.

After using whichever herbs, spices or seasonings you’ve chosen on the flesh side, place the fish directly on the soaked plank, skin side up (this helps seal in the flavor while simultaneously allowing the skin to crisp nicely in the oven). Then place in a pre-heated 425 degree F oven for fifteen minutes. This will have a one-pound filet done perfectly. Adjust the length of time accordingly for larger pieces of fish.

When done, the fish will cut easily and yields a lovely
presentation atop a bed of mixed baby greens and some steamed, colorful summer veggies. This entire meal can all be prepared in well under an hour’s time including prep AND cooking time.

I'm looking forward to sharing more tips for ways to make prepping energy-packed meals that protect us from heart-breaking disease easier and quicker in The Paleo Diet Implementation Program. As a Triathelon athlete, I'll also be sharing how I eat to optimize training, and get that competitive edge in world-class events. See you there!

**ASTHMA AND PALEO**

Question from a reader:

“Is there any evidence that asthma is linked to diet and whether The Paleo Diet would be beneficial?”

Here’s feedback that endurance athlete trainer Joe Friel received showing how effective The Paleo Diet can be in helping exercise induced asthma:

“Since switching to Paleo 100% just short of 90 days ago, I cannot believe how dramatically my body has changed. My energy levels and rate of recovery are better at 42 then they were at 22. No longer will my ‘sports nutrition’ come out of a synthetic wrapper or bottle. I have suffered with exercise induced asthma most of my life. It’s no longer an issue, AT ALL! I cannot say ‘Thank you!’ enough to you and Loren Cordain.”

**PREVENT GALLBLADDER DISEASE**

*Mælán Fontes, MS Ph.D.*

Gallbladder disease is common and accounts for more than 700,000 cholecystectomies (gallbladder removals) annually at a cost of 6.5 billion dollars.

Gallstones form when bile in the gallbladder concentrates and thickens. Certain risk factors for this disease are immutable (such as female gender, increasing age and genetic traits), but The Paleo Diet can help reduce other risk factors.

This degenerative disease has been called a modern illness that is clearly related to diet. A study at the University Hospital of Riyadh in Saudi Arabia found that gallbladder surgeries increased 600 percent in that country as people became more sedentary and began consuming the typical sugary, fat-laden foods of the developed world.

We’d like to share Miche’s experience and question (below) regarding whether egg consumption may contribute to gallstones, and explain how other foods may lead to gallbladder disease.

Thank you, Miche, for writing to us regarding the connection between diet and gallstones.

“I am very interested in the Paleolithic diet because I know that my body reacts badly to carbohydrates. The problem is that I had two gallstone attacks about a year and a half ago. I declined the offer to have my gall bladder removed. Instead I was treated by a natural health practitioner who supervised me through a cleanse supplemented with herbal remedies. I have been fine since then.

My question is whether it will be okay for me to eat eggs on The Paleo Diet having experienced the gallstone attacks. Any information you can give me will be appreciated.”

Miche L.
Hello Miche,

Gallbladder disease is more related to insulin resistance\(^3\)\(^-\)\(^5\) and chronic consumption of high glycemic load refined carbohydrates than it is related to either fat or cholesterol, such as is found in eggs. Furthermore, cholesterol production by the liver can be more troublesome than exogenous cholesterol consumption.

Hyperinsulinemia and insulin resistance induce hepatic (liver) cholesterol hypersecretion, cholesterol hypersaturation of bile as well as gallbladder hypomotility (low movement), all of them important factors in the formation of gallstones.\(^4\)

In general, The Paleo Diet fights insulin resistance and hyperinsulinemia because it emphasizes low glycemic load foods.

The Paleo Diet not only helps with insulin resistance by emphasizing low glycemic load foods, but it can also help with several other factors that can contribute to gallstone formation.

Another known factor in gallbladder disease is known as leptin resistance\(^7\)\(^,\)\(^8\) Leptins are peptide hormone neurotransmitters that are produced by fat cells, and are involved in regulating appetite. Since foods that contain glycoproteins called lectins may induce leptin resistance,\(^7\) eliminating dietary lectins, as The Paleo Diet does, may reduce the risk of gallbladder disease.

Lectins, such as those found in cereal grains and legumes, also contribute to increased intestinal permeability or leaky gut syndrome.\(^9\) One related study with rodents demonstrated a possible association between intestinal barrier function and gallbladder disease.\(^1\(^1\)\(^1\)\(^1\)\(^1\)\(^1\)\(^1\) Another study carried out with guinea pigs was more conclusive because the authors showed the direct association between gallstones and intestinal mucosal barrier.\(^1\(^2\)\(^1\)

The Paleo Diet can also help with several other diseases that are associated with gallstones, such as chronic kidney disease,\(^1\(^3\) body mass index greater than 27 kg/m\(^2\),\(^1\(^3\) metabolic syndrome,\(^1\),\(^4\),\(^5\) ileal diseases (Crohn’s disease),\(^1\),\(^1\(^4\)) and liver disease.\(^1\),\(^1\(^3\)

For sources see References: Section II
SIMPLE, BUT SUBLIME CHICKEN!

Nell Stephenson, BS USC EXSC

As I’ve mentioned before, a simple marinade on fish, poultry or red meat can make a boring piece of protein into a fantastic taste-bud experience!

If you want to keep it really simple, create a marinade that only has a few (flavorful!) ingredients. A strong, concentrated taste, like that found in sun-dried tomatoes in olive oil, for example, can make a marinade all by itself!

I literally threw together the following dish in a matter of minutes, left it in the fridge to marinate overnight, and then cooked it the next day. The juice left it in the pan after cooking served to be the perfect sauce in which to sauté some rainbow chard, which also absorbed tremendous flavor in the process!

Combine oil-packed, sun-dried tomatoes with fresh basil leaves and freshly ground peppercorn. You can mix these together, or puree them in a mini-prep food processor.

If you're using bone-in, skin-on chicken breast (which I recommend for cost and flavor), simply put the chicken in a glass dish and cover it with the marinade. If you're using boneless/skinless chicken breast, pound out the meat first with a tenderizer to render a more delicate filet.

Cover the dish with plastic wrap, turn it once or twice over the next day, and then sear it in a cast iron skillet for a few minutes on each side before finishing in the oven. Internal temperature should reach 160 degrees F.

Remove the chicken from the skillet and leave it in a serving dish for a few minutes while you briefly cook a head of chard, kale or spinach in the same skillet. Serve with a fresh green salad and voila - simple and sublime chicken!

KEY TO WEIGHT LOSS

One doctor’s breakthrough experience and insight into how nutrition enables weight loss, improves health, and reduces the need for medication:

“I trained and was boarded in General Surgery in the late ’70s, and then spent a very satisfying twenty plus year career as an emergency physician, a specialty in which I was also boarded. I worked in a big urban hospital emergency department, which included nine years of administration as Assistant Chief and then Chief. I loved the medical practice, but I was caring for others while neglecting myself. I was hypertensive (consistently BP of 144/88), overweight (body fat 34%, BMI 28.7), with abnormal cholesterol (180 - 190), and a resting pulse in the low 70s. My HDLs were low.

I read voluminously, including all the major diet books cover to cover...I was counting points and losing weight, but ravenously hungry all the time...Two scientific nutritional concepts turned out to be cornerstones in my “cracking” the weight loss nut.

The first was the fundamental importance of glycemic index, and the effect this has on insulin levels and resultant wild swings in blood sugar and hunger levels. The second was
calorie density: the fact that we eat to satiety based on volume of food eaten, not number of calories. Since only vegetables, and some fruits, are low calorie density foods, each meal must include a generous portion of these food categories.

But the real breakthrough happened when a fellow emergency physician...strongly suggested I look into the Paleo approach to nutrition...Suddenly calorie density and low glycemic index made sense because those were the only foods available to us as we evolved.

For my own testimonial, I have gone from a body fat of 34% to 7%, a BMI of 28.7 to 20.6, an abnormal blood pressure of 144/88 to a consistent 104/62 and a high cholesterol of 190 to 132. My HDLs are up. My triglycerides are 35. My resting pulse is now in the high 40s.

For the three years before I started eating “Paleo,” I had been taking 300 mg of Zantac for G.E.R.D. virtually every single night. In the past two years, I believe I have taken four doses total, and that was always in the context of dietary “indiscretion.” I had been experiencing about five years of D.J.D. inflammation in several of the P.I.P. joints of my fingers with resultant swelling. That has completely quieted down.

The three way combination of eating hunter-gatherer food, getting my BMI down under 21, and exercising is incredibly healing and powerful medicine; and it beats hands down the medications we give our patients, like anti-hypertensives, lipid lowering agents, and hypoglycemic drugs. Those may provide some benefit for individuals who are unable to change their diet and weight, but they have no effect on the overall root cultural problems of diet, obesity, and sedentary life-style that is endemic in our Western society.

Thanks again for your powerful contribution to my understanding of human nutrition. I’d be happy to post an endorsement to your website.”

Steve, MD
RAY’S CATSUP

3.5 lbs tomatoes, sliced
2 medium onions
2 very small garlic clove
1/2 bay leaf
1/2 red bell pepper
1/4 cup unsweetened fruit juice (white grape, pear, or apple)
1 t. who allspice
1 t. whole cloves
1 t. whole mace
1 t. celery seeds
1 t. black peppercorns
1 1/2 inch cinnamon stick
1/2 cup freshly squeezed lemon juice
Pinch of cayenne pepper

Boil tomatoes, onions, garlic, bay leaf, and red pepper until soft. Add fruit juice. Mix allspice, cloves, mace, celery seeds, peppercorns, and cinnamon in a small cloth spice bag and add to mixture. Bring to a boil quickly, stirring frequently until the mixture reduces to half the quantity. Remove spice bag. Add lemon juice and cayenne pepper. Continue boiling for ten minutes more.

Bottle catsup in clean jars leaving 3/4 inch of space at the top of each jar for expansion. Seal and freeze immediately. Always refrigerate the container that is currently in use.

Makes about 2 cups.

REFERENCES: SECTION I


REFERENCES: SECTION II


4. Tsai CJ, Leitzmann MF, Willett WC, Giovannucci EL. Macronutrients and insulin resistance in cholesterol


