# ACTIVATE YOUR ANTI-AGING GENES

## A Step-by-Step Guide to Genetic Secrets and a Younger You!


**Al Sears, MD**

**World-Renowned Anti-Aging Doctor**

Published by:
Al Sears, MD
11905 Southern Blvd.
Royal Palm Beach, FL 33411
561-784-7852
www.pureradiance.com

# Uniquely Qualified to Keep You Healthier For Life

Dr. Al Sears, M.D. currently owns and operates a successful integrative medicine and anti-aging clinic in Royal Palm Beach, Florida, with over 25,000 patients. His cutting-edge therapies and reputation for solving some of the most difficult-to-diagnose cases attract patients from around the world.

As a graduate of the University of South Florida College of Medicine, Dr. Sears scored in the 99th percentile on his MCAT and graduated with honors in Internal Medicine, Neurology, Psychiatry, and Physical Medicine.

After entering private practice, Dr. Sears was one of the first to be board-certified in anti-aging medicine. As a pioneer in this new field of medicine, he is an avid researcher, published author, and enthusiastic lecturer. He is the first doctor licensed in the U.S. to administer TA-65, the most important breakthrough in anti-aging medicine today.

Dr. Sears is board-certified as a clinical nutrition specialist and a member of the American College of Sports Medicine (ACSM), the American College for the Advancement in Medicine (ACAM), the American Medical Association (AMA), the Southern Medical Association (SMA), the American Academy of Anti-Aging Medicine (A4M), and the Herb Research Foundation, (HRF). Dr. Sears is also an ACE-certified fitness trainer.

Dr. Sears currently writes and publishes the monthly e-Newsletter, *Health Confidential*, and daily email broadcast, Doctor's House Call, and contributes to a host of other publications in the field. He has appeared on over 50 national radio programs, ABC News, CNN, and ESPN.

Since 1999, Dr. Sears has published 15 books and reports on health and wellness with a readership of millions spread over 163 countries.

In his first book, ***The T-Factor, King of Hormones***, Dr. Sears perfected the use of natural and bio-identical testosterone boosters to help men restore the drive, ambition, muscle strength, vitality and sexual performance of their youth.

Dr. Sears followed up with ***12 Secrets to Virility***, a full-blown strategy for male performance that includes his own patient-tested protocols for successfully dealing with men's health concerns like fighting excess estrogen, protecting the prostate, eliminating fat gain and keeping a sharp mind and memory.

In 2004, Dr. Sears was one of the first to fight against the conventional belief that cholesterol causes heart disease, proving that cholesterol is not the cause, but the part of the body that heart disease acts upon. In ***The Doctor's Heart Cure***, Dr. Sears offers an easy-to-follow solution that effectively eliminates your risk of heart disease, high blood pressure and stroke.

In 2006, Dr. Sears shocked the fitness world by revealing the dangers of aerobics, "cardio" and long-distance running in his book, ***PACE: The 12-Minute Revolution***. Expanding on the fitness principles in ***The Doctor's Heart Cure***, he developed a fast, simple solution to restore muscle strength, guard against heart attack and burn excess fat. Today, PACE is practiced by thousands of people worldwide.

In 2010, Dr. Sears made history by bringing telomere biology to the general public. As the first U.S. doctor

licensed to administer a groundbreaking DNA therapy that activates the gene that regulates telomerase, his breakthrough book ***Reset Your Biological Clock*** shows how anyone can preserve the energy of youth by controlling the length of your telomere, the true marker of aging.

An avid lecturer, Dr. Sears regularly speaks at conferences sponsored by the American Academy of Anti-Aging Medicine (A4M), the American College for the Advancement of Medicine (ACAM), the Age Management Medicine Group (AMMG), and the Society for Anti-Aging, Aesthetic and Regenerative Medicine Malaysia (SAAARMM).

As the founder and director of Wellness Research Foundation, a non-profit research organization, Dr. Sears has made it his life's work to bring his patients the latest breakthroughs in natural therapies. As part of his ongoing research, Dr. Sears travels the world in search of herbs, novel cures and traditional remedies. Meeting with doctors and healers, Dr. Sears has brought back and revitalized much of the traditional knowledge considered endangered in today's modern world.

- **During an expedition to the Peruvian Andes, Dr. Sears brought back a nutrient-dense oil made from the Sacha Inchi nut, containing the highest plant source of heart and brain boosting omega-3 fatty acids.**
- **In India, Dr. Sears studied at the oldest existing school of Ayurvedic medicine, the ancient Indian healing tradition, and was tutored by Ayurvedic doctors on the use of potent Indian herbs used to treat heart disease, cancer and Alzheimer's disease.**
- **While trekking through the Amazon rainforest in Brazil, Dr. Sears lived among the native Ashaninka Indians, incorporating their ancient knowledge of healing herbs into his own nutritional supplement formulas.**
- **In Jamaica, Dr. Sears met with the last living healer from the ancient and forgotten lineage known as the Maroons. Coming from West Africa 500 years ago, their knowledge was on the brink of extinction until Dr. Sears published a book showcasing their unique herbs and healing formulas.**
- **On the island of Bali, Dr. Sears had a meeting with the most famous of the ancient healers known as "Balians," – Ketut Leyir – and also met two of the country's foremost herbalists. Dr. Sears is publishing a book showing how to use Balinese herbs and make unique healing mixtures for the skin and body.**

With a life-long interest in botany, herbology, physiology and anthropology, Dr. Sears has a unique capacity to investigate the evidence behind the stories and claims of traditional medicine from native cultures around the world.

By exposing the flaws of mainstream medicine and pioneering new solutions through innovative approaches to exercise, nutrition and aging, Dr. Sears continues to empower the lives of his patients and readers through his books, newsletters and regular media appearances.

# Unlocking The Beauty Code

## The Genetic Secret To Staying Younger Longer

You are genetically programmed to wilt like a flower.

That's the reality.

Every time your cells divide, your body sends a new command that causes your skin to become progressively drier, droopier and full of new lines and wrinkles.

Your hair and nails are programmed to lose their shine and luster. Over time, your hair thins and turns gray while your nails become brittle and cracked.

It seems like an "act of fate," but your body is simply following a script. Like actors reciting lines, your cells have no choice but to lose their power as they age and take your youthfulness with them.

***That's the only storyline they've known… until now. Because*** new discoveries show you can CHANGE the story... and CHANGE the script.

By "writing" a new program, you can tell the cells in your skin, hair and nails to stop becoming older.. Instead of getting lines on your forehead and bags under your eyes, you can keep and maintain a fresh, radiant look as you age.

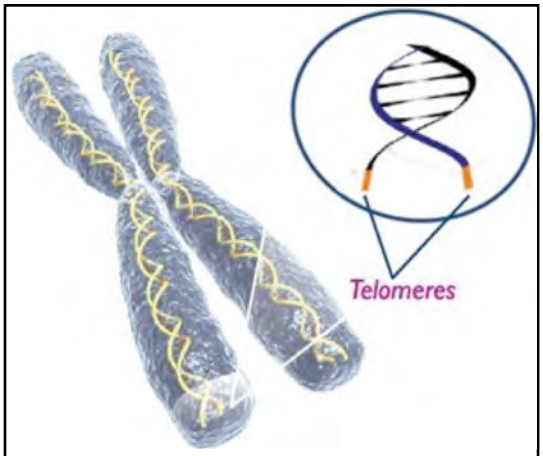
You can even make repairs to your skin, which can make you look years younger. And in some cases, you can even "go back in time" and revive the genetic coding you had when you were in your twenties.

Most everyone I know gets a big thrill when somebody pegs their age as much younger than it truly is. A single five-year deduction in age could put a smile on your face for days. After all, who doesn't like a compliment like that?

In this special report, you'll discover the NEW research behind these discoveries and how we've cracked open and exposed the major mechanism by which your body controls the aging process. Your DNA orchestrates this program that controls the forces of aging, and we can now intervene in it. That means you can controls the way you look – from your hair, skin and nails, down to the way you appear older and less attractive – as you age.

You'll find out how a breakthrough technology can increase skin tone and firmness, restore natural skin moisture, reduce the appearance of fine lines, wrinkles, age spots and large pores... and even turn your graying hair back to its original color.

You'll also find new ways of "reprogramming" your genetic code so you can keep that younger-looking version of yourself to star in your own life drama for years to come.




**Telomeres are the caps at the end of each chromosome.**

## Your Cells Hold the Secret of Life-Long Alluring Beauty

Telomeres are the "time keepers" attached to every strand of your DNA. Each time your cells divide, your telomeres get shorter. When your telomeres run down, cell division stops and your life ends.

By slowing down the loss of your telomeres, you not only extend your lifespan, you stay younger longer.

That's what I do for my patients. And it's important you know how this works.

As the telomere gets shorter, your body produces cells that are older, weaker and more decrepit.

This speeding up of telomere loss actually causes your body to transcribe an older, more dysfunctional part of your genome.

That means your body becomes weaker, more frail and open to all the pitfalls of aging.

***That includes your appearance too... your skin, face and hair are EXTREMELY sensitive to telomere shortening.***

One study even found that people who look younger than their actual ages live longer than those who look older.

In a long-term study involving 913 pairs of twins, Danish researchers discovered that the twins who looked younger than their true age had better health and longer survival rates than their older-looking siblings. And the larger the difference in perceived age, the more likely it was that the older-looking twin died first.[1]

And the reason for this difference?

***The people who looked younger had longer telomeres.***

Longer telomeres not only help you look better, but it increases your chances of living longer... and decreases your risk of chronic disease.

## People Who Live Past 100 Have Longer Telomeres

When you have longer telomeres, your cells don't age as quickly, which means that not only do you avoid diseases like cancer, you live ***younger longer.***

Have a look at these study results:

100 year olds in good health had "significantly longer" telomeres than those with health problems.[2]

Your risk of heart attack increases the faster your telomeres break down. When researchers looked at people in perfect health who later died from heart disease, they found the death rate from heart attack was ***3 times higher*** for men whose telomeres got short the fastest.[3] ***The shorter your telomere, the higher your risk of death from heart attack.***

People with shorter telomeres in their immune cells had twice the risk of death from heart failure as patients with the longest telomeres. The study, published by the *American Heart Association*, found the highest-risk group had telomeres half the length of the lowest-risk group.[4]

The message here is clear. When you preserve telomere length, you preserve life and youth.

It means we now understand the very mechanism by which you age. And we've found a ***simple system*** that helps you preserve your telomeres and extend your lifespan.

And when you preserve your telomeres, you LOOK younger and more attractive.

## Shrinking Telomeres Cause Your Skin to Get Old Before Its Time

Studies suggest that too much sun and UV exposure has a dramatic and debilitating effect on your telomeres. And these shrinking telomeres are the primary cause of "photo aging," the damage caused by the sun's rays.

But when you PROTECT your telomeres from sun damage and REPAIR your DNA, you can reverse some of the damage and maintain younger-looking skin and hair.

Let me explain.

Dermatologists along with the cosmetic industry spend millions of dollars a year trying to convince you the sun is somehow “bad” for you. Their answer, of course, is to slather on layer after layer of sunscreens and tanning lotions.

As you’ll discover later in this report, many of these products contain toxins that cause cancer and block your body’s ability to create vitamin D.

But the sun is not your real enemy. Moderate sun exposure is essential for healthy skin and hair.

The real problem is what ***overexposure*** does to the telomeres in your skin cells.

A study published in the journal *Micron* found telomere shortening was the real culprit behind skin aging... and overexposure to the sun ***accelerated telomere shortening.***[5]

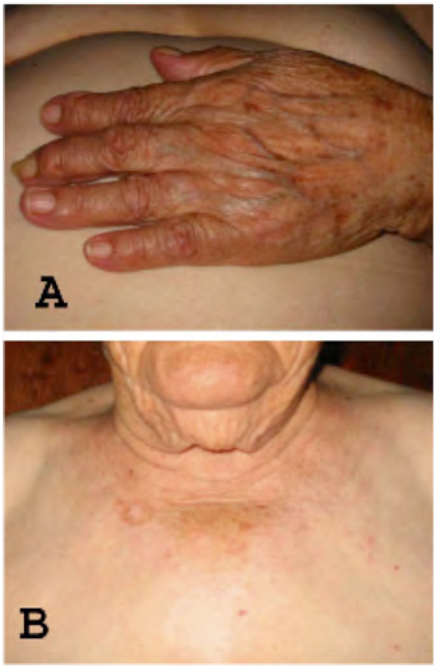
By measuring telomere loss and sun exposure, researchers were able to show how telomere loss is the mechanism that creates the thick, coarse skin that comes from too much direct sun exposure. Dermatologists call this “photo aging.”

In the study, researchers from the Department of Dermatology at the Boston University School of Medicine concluded that UV rays damage telomeres in two ways: 1) By creating proteins that directly damage the cells’ DNA where telomeres are located, and 2) by generating free radicals that attack and further degrade telomere length.

To compare telomere length and the quality of skin, the team looked at the skin of a 91-year-old woman.

Have a look at the pictures to the right.

In photo A, you can see the effect of photo aging. The skin is darker, drier, heavier and marked by blemishes and age spots.




Telomere loss caused by photo aging created the thick, dry skin along with blemishes and age spots (photo A). The woman’s skin NOT exposed to the sun had longer telomeres and remained softer with fewer blemishes and wrinkles (photo B).

And most notably, the photo-aged skin has ***shorter telomeres.***

Compare that to the woman's "chronologically aged" skin in photo B. Without sun exposure, her skin remained softer, with more moisture and fewer lines, wrinkles and age spots.

Why? Because the skin cells not exposed to the sun have ***longer telomeres.***

For the first time, we have conclusive evidence that telomere length is the true measure of how your skin ages.

And it's not hard to understand why.

Your skin cells are the fastest-dividing cells in the human body. They have to be to withstand the wear-and-tear of threats from our environment.

When you consider our skin is under constant attack, it's not surprising to find out that our skin cells are one of the few regenerative tissues to express *telomerase*, the enzyme that rebuilds your telomeres.

That fact that our skin cells get some protection from telomere loss is encouraging. But the real question is whether our skin can hold on to this supply of telomerase in the face of environmental threats our ancient ancestors never had to worry about.

Back when our ancestors were hunter/gatherers, they faced "organic" threats from their environment like wind, rain and climate changes, as well as cuts and lacerations they suffered during their walks and/or hunts.

Today we face "inorganic" threats in the form of chemicals, drugs and other toxins that attack our skin and shorten our telomeres.

In spite of our cosmetics, day spas and various treatments, it's harder to maintain your natural beauty in the modern world than it was centuries ago.

And that's why you must do SOMETHING to stop the loss of telomere length in your skin, hair and nails. If you don't, you will age faster and accelerate your built-in genetic program that's designed to make you less attractive as you age.

Fortunately, there are simple strategies I give my patients to help protect their telomeres, and in some cases, even lengthen them.

## Cancer-fighting Sunshine Vitamin Gives You Younger Skin

For example, what if I told you there were a drug that dramatically reduced the risk of heart disease, diabetes, arthritis and inflammation? That it reduces the risk of *all* cancers by 77 percent?[16] And that it lengthens your telomeres?

There is such a thing, but it's not a drug. It's vitamin D.

The *American Journal of Clinical Nutrition* published a study that looked at more than 2,000 women of all ages. The more vitamin D they had in their bodies, the longer their telomeres were. On top of that, people who supplemented with vitamin D had longer telomeres than those who didn't.[17]

Why do people who have high levels of vitamin D have longer telomeres?

**Because vitamin D activates telomerase.** One study divided people into two groups and measured their vitamin D levels. Then researchers randomly assigned the people to either get a placebo or the equivalent of 2,000 IU of vitamin D a day.

After only 4 months, **those taking vitamin D had their telomerase activity skyrocket by 19.2%.**[18] Those taking a dummy pill had no change in telomerase activity.

Vitamin D also destroys a vicious free radical called the *superoxide anion* that causes inflammation in your skin, robbing it of youthful elasticity and moisture.[19]

Vitamin D repairs DNA damage, stops inflammation and helps to "turn on" genes which promote healthy tissue, and "turn off" genes that promote aging.

For the most part, vitamin D is completely free. Just go outside and spend 10-20 minutes in the sunshine and your skin will synthesize 10,000 or more IU of vitamin D.

However, it's not so easy to get enough sunshine in the winter, or in the far northern or southern hemispheres. That's why I recommend you supplement with at least 5,000 IU of vitamin D every day.

The two best ways to supplement Vitamin D are to:

1. **Eat foods with high Vitamin D.** The best sources are small fish like herring, sardines, and anchovies. Be aware of how much of the larger fish you eat because they can have quite a bit of mercury.
2. **Take some cod liver oil.** Besides sunlight, the best natural source of Vitamin D is cod liver oil. Just two teaspoons full contain almost 3,000 IU of Vitamin D.

A quality vitamin D supplement from a capsule, caplet or from liquid drops is your next choice for protecting against inflammation, but make sure it's in the right form.

What makes a good form of vitamin D? The D3 form, which is the bioactive kind of vitamin D. But don't rely on your multivitamin to give you all the vitamin D you need, even if it does have D3. It's a good start, but most still only have around 400 IU.

But overexposure to sun light is NOT the only threat to your telomeres.

It is worth knowing the factors that can damage your skin causing it to lose its tone and wrinkle earlier than you'd like. Then, you'll know exactly how you can keep your skin taut and healthy, while still taking advantage of the benefits of sunlight.

Aside from overexposure to sunlight, some of the big contributors to damaged skin include:

Nutritional deficiencies...
Over consumption of artificial polyunsaturated fats...
Not getting enough omega-3 fats...
Exposure to toxins and allergens in our food and water...
Air pollution...
Chemical lotions and creams...
And smoking.

Let's take a closer look at each of these factors.

## Sunscreens Don't Protect Against Photo Aging

People slather up with sunscreen and head into intense sun for hours thinking they're safe from overexposure to the sun. Nothing could be further from the truth.

Most sunscreens block UV-B light, the light that causes sunburn. But most do NOT block UV-A light, and it is overexposure to UV-A light which accelerates photo aging of your skin.

When you spend a long time in the sun, unprotected from UV-A, this type of radiation can chemically transform and excite certain acids in your skin that then contribute to photo aging pigmentation changes and wrinkles.[9]

Even worse, many sunscreens still use a compound called PABA. This chemical actually ***increases photo aging*** because it inhibits your skin's ability to repair cellular damage. And there is another reason you should avoid PABA: Many people are allergic and get a rash which looks like a sunburn and further inflames and damages skin.

As the Boston University study showed, overexposure to sunlight can also ***generate free radicals.*** And that can damage skin cells and reduce the amount of antioxidants present in your skin, specifically vitamin C, vitamin E, and CoQ10.[10]

The effect of sunlight on the antioxidants present in the skin is important.

While moderate sun exposure actually helps to increase antioxidants present in the skin, inappropriate ratios of UV-A radiation or overexposure consumes and lowers antioxidant levels in your skin.

This tells us in part how sunlight can damage your skin... and it helps us find ways to counteract the process.

Your body uses vitamin C to make collagen. Collagen forms a kind of latticework or scaffolding as the basis of your skin's structure. When you have healthy collagen, you have taunt, smooth and toned skin.

But when any factor damages your skin's collagen, your skin loses its scaffolding, sags and begins to wrinkle. With a deficiency of vitamin C, this process goes on unchecked without repair.

Additionally, vitamin C is critical to many of your skin's other maintenance and repair processes. When your skin lacks adequate vitamin C, these processes are retarded, slowing repair and contributing to aging of your skin.

In other words, if you don't get enough vitamin C, your skin suffers. But when you get plenty of vitamin C, research shows it does more than just the basics.

British researchers examined the skin more than 4,000 American women between the ages of 40 and 74. ***The women who got more vitamin C showed fewer wrinkles and less dryness.***[11]

As we age, our body's ability to make collagen decreases. But a team at Duke University discovered that vitamin C reverses this trend.

They took skin cells from both newborns and retirees and added vitamin C. When they did, the cells divided much faster... even cells from 93-year-olds.

The researchers concluded that vitamin C helps your body beat the drop in collagen production.[12]

Recent studies also show Vitamin C can slow telomere shortening by over 50%.[13]

And vitamin C supports an important immune system function.

Your skin is your immune system's first line of defense. A strong skin barrier keeps attacking microbes out. But it can also help keep healthy moisture in.

And a study from *The British Journal of Nutrition* shows that vitamin C supports a healthier skin barrier.[14]

So taking vitamin C is a great way to promote healthier, younger-looking skin. But it's not the only nutrient that can help your skin shrug off UV damage.

**How much vitamin C should you get every day?**

Let me set the record straight about the U.S. Recommended Daily Allowance. It's not a speed limit.

The RDA doesn't mean "don't take more than this amount." The RDA is strictly meant to prevent a severe dietary deficiency of a nutrient.

In my experience, it's not even doing that much. And it certainly is not a recommendation for how much of a nutrient you need so you can function at your best. For example, the RDA of vitamin C for adults is 90 mg for men and 75 mg for women. This is not enough to slow telomere shortening.

Remember I mentioned that almost all animals make their own vitamin C? Well, based on what they produce, your body would make between 3,000 mg and 10,000 mg a day if it could – over 100 times more than the RDA!

Dr. Linus Pauling, the Nobel Prize winner famous for his research on vitamin C, took between 12,000 and 18,000 mg a day, and lived to the ripe old age of 93. Based on my own experience, Pauling's mega-doses aren't usually necessary. Here are three ways to get all the vitamin C you need to feel your best:

**1. Food:** Dark, leafy vegetables, bell peppers, black currants and papaya all have lots of vitamin C. Two common foods with a lot of vitamin C are red and green chili peppers (242 mg per 100 grams), and guava (228 mg). Oranges and strawberries, by contrast, have about 60 mg per 100 grams.

The king of all fruits as far as vitamin C goes is the acerola cherry. They have 1,678 mg per 100 grams – over 20 times the vitamin C of oranges!

**2. Herbs:** Thyme and parsley are the best sources of vitamin C. You can add them to any soup, stew or salad. Also, a little-known source of vitamin C is peppermint leaves. You can make peppermint tea – just make sure to cover the mug while brewing to keep in the oils.

**3. Supplements:** Vitamin C is also known as ascorbic acid. Vitamin C is regularly available in stores. An effective dose of vitamin C if you're currently healthy is 1,500 mg, twice a day.

Pregnant women should get at least 6,000 mg per day. But in times of stress or sickness, you can take up to 20,000 mg. A powdered form may be more convenient for larger doses.

## Safeguard Your Skin with the Right Fats

Omega-3 fatty acids are a group of healthy unsaturated fats. They're essential for your good health, but your body can't make them on its own... so you MUST get them from your diet.

Omega-3's are great for your heart, support a strong immune system and may even help with "brain fog" and forgetfulness.

But Omega-3's also support healthy skin. In fact, researchers at Germany's Heinrich-Heine University say they can be ***"part of lifelong protection" for your skin.***[15]

More than 15 years of studies from around the world show that the Omega-3 fatty acids found in fish oil support your skin's UV defenses.

One of many studies I've found comes from the University of Liverpool.

Scientists there found that fish oil, rich in Omega-3's, "markedly reduced" sunburn response.[16] In other words, subjects experienced less skin damage. The kind of damage that makes your skin look older than its years.

And omega-3 may promote younger looking skin in another way.

Most of us think of limp, droopy skin as a sign of age. Skin elasticity, the ability of skin to "snap back" when stretched, is seen as a sign of youth.

So a nutrient that could improve your skin elasticity by 10% in just 3 months would be terrific, wouldn't it? Well that's exactly what happened when German researchers gave a supplement rich in fish oil to a group of 24 women.[17]

And these women weren't teenagers. This study worked with women as old as 60. It appears as though omega-3 may work at nearly any age.

And there's good news for rough, scaly skin, too.

I've come across several studies that show fish oil promotes improvement of dry, scaly skin. After taking omega-3 fish oil for just a few weeks, the subjects' skin was smoother and healthier looking... while those taking a placebo showed no improvement at all.[18] [19]

A report in the journal *Circulation* says it promotes better blood flow in small arteries.[20] Since these same small arteries nourish your skin, this is another way omega-3 supports better skin health, and that youthful appearance you desire.

And, a study in the Journal of the American Medical Association (JAMA) looked at patients from the Heart and Soul study and followed them for 5 years. Those with the lowest levels of omega-3 fatty acids had the fastest telomere shortening.

Those with the highest omega-3 levels had the slowest telomere shortening.[21]

Omega-3 fatty acids are the good fats that your body can't make, so you have to get them from food. There are both plant and animal sources of omega-3, and each one gives you a different kind of omega-3.

Plant-based omega-3s are mainly alpha linoleic acid (ALA). Your body breaks this down into the two types of omega-3 you need to keep your telomeres longer, EPA and DHA.

Animal based omega-3s have some ALA, but mostly contain EPA and DHA.

It's important to get omega-3s from both plants and animal sources because the ability to convert ALA from plants into EPA and DHA can vary from person to person. So getting an animal source is essential.

Animal sources of omega-3 are cold-water, high-fat fish like mackerel, wild salmon, lake trout and herring. But to get enough EPA and DHA on a daily basis, which you need if you're going to protect and preserve your telomeres, I recommend cod liver oil.

The best fish oils, which means the ones that are most absorbable and least likely to turn rancid, are the ones in their original "triglyceride form." This triglyceride form is worth the little extra you'll pay for it.

Also, eat plenty of raw nuts and seeds. Walnuts, Brazil nuts, almonds and pumpkin seeds are some of my omega-3-rich favorites. I also use Sacha Inchi oil. Packing more than 48% ALA, Sacha Inchi oil is one of the richest plant-based sources of omega-3 in the world. That's 5.15 grams of linoleic acid in each tablespoon full.

I like to put Sacha Inchi oil on salads, and use it in my stir-fry recipes, but you can also just take a tablespoon full. It has a clean fresh taste.

You should try to get 3-5 grams of omega-3 every day... but it's also important to remember that taking in too many omega-6 fatty acids causes inflammation, which shortens telomeres. So stay away from farm-fed fish and processed meats. These man-made creations have unhealthy amounts of omega-6.

Grass-fed beef for example has 2 to 10 times more omega-3s than grain-fed.[22]

Omega-3s oils are great. But I've found another supplement that works remarkably well... whether you take it internally or rub it on your skin.

## The Heart Energizer that Does Wonders for Your Skin

Not long ago, I came across a German study that looked at antioxidant activity in the skin. I wasn't surprised by one conclusion: UV rays cause more damage as antioxidant activity decreases.

One big reason named in the study was the drop in CoQ10 levels with age.[23]

CoQ10 is a vitamin-like nutrient that makes cellular energy possible. It's also a powerful antioxidant. But, as we age, our bodies begin to lose the ability to make CoQ10. So we lose some of its antioxidant strength... and some of our energy, too.

### Your Natural Skin Cancer Defense

In a skin-cancer study, CoQ10 levels were significantly lower for those with melanoma than those who were cancer-free. What's worse is that the odds of the skin cancer spreading were eight times greater for people with low CoQ10 levels.[2]

Higher levels of CoQ10 will help give your cells the energy they need to stop cancers from forming.

In a study done last year in Japan, researchers pre-treated animals with CoQ10, and then gave them a substance known to induce cancer. The animals given CoQ10 were able to reduce pre-cancerous lesions by 80 percent, protect red blood cells from DNA damage, and inhibit damage from inflammation.[3]

2. Rusciani, L., Proietti, I., Rusciani, A., et al, "Low plasma coenzyme Q10 levels as an independent prognostic factor for melanoma progression," *J. Am. Acad. Dermatol*. Feb. 2006;54(2):234-41
3. Kim, J.M., Park, E.. "Coenzyme Q10 attenuated DMH-induced precancerous lesions in SD rats," *J. Nutr. Sci. Vitaminol. 2010:*56(2):139-44

But topical CoQ10 can help your skin make up for that cellular energy loss. According to one study, CoQ10 "rapidly improves mitochondrial function in skin."[24] ***In other words, old skin begins to function like younger skin again.***

So CoQ10 can work from the outside. But it works on the inside, too.

Japanese researchers found that taking CoQ10 promotes collagen production. They also determined CoQ10 acts as an antioxidant in the skin.[25]

These same scientists also discovered that CoQ10 supports production of elements of the "basement membrane" – the thin membrane that separates the layers of your skin.[26]

CoQ10 supports healthy, younger-looking skin in several ways. But you should be aware that not all CoQ10 is the same.

## The Secret to Making Your CoQ10 8 TIMES MORE Bioavailable

For many years, only one form of CoQ10 was available. It's called "ubiquinone." When you take ubiquinone, your body has to convert it into another form of CoQ10 called ubiquinol.

Ubiquinol is the “reduced” form of CoQ10 your body can use. And studies show that people absorb ubiquinol better than ubiquinone.[27]

But while ubiquinone is stable, ubiquinol breaks down rapidly when exposed to air. So the less powerful form of CoQ10 was the only kind you could buy for 30 years.

But Japanese scientists recently solved the stability problem for CoQ10 taken internally. So stable ubiquinol is now available. With its superior absorbability, you can get more of the benefits of CoQ10 for your skin.

In fact, ubiquinol is 8 times more bioavailable, which means it’s easier for your body to absorb, use and apply in your cells.

## So How Much Do You Take?

Quite a few of the studies I’ve reviewed are comparative. In other words, they looked at people who got more or less of a certain nutrient... but not at specific amounts of the nutrients. And so far, I haven’t found any studies that have determined “ideal” amounts of any of the nutrients I’ve mentioned here.

But based on my experience with my patients, here’s what I’ve found.

Even foods now considered “rich” in CoQ10 don’t have as much as what they use in the studies that look at CoQ10’s effectiveness.

And, the kind of CoQ10 you’ll find in foods is the “ubiquinone” form.

I usually recommend my patients supplement with 50 to 100 mg of the ubiquinol form of CoQ10 daily. Consider taking 200 to 300 mg a day if you have heart health concerns or high blood pressure.

| Food Item | Coenzyme Q10 (mg/kg of meat) |
|---|---|
| Pork heart | 126.8-203 |
| Chicken Heart | 116.2–132.2 |
| Beef heart | 113.3 |
| Sardines | 64 |
| Beef liver | 39.2-50 |
| Red Mackerel | 43-67 |
| Pork | 24.3-41.1 |
| Beef | 31.0 – 36.5 |
| Pork liver | 22.7 |
| Chicken | 14.0 – 21.0 |
| Pork ham | 20 |

## Clear, Radiant Skin Depends on Good Nutrition

While photo aging can play a part in the appearance of your skin, it is complicated by a number of factors. If you take good care of your skin, you are less likely to experience sun-related damage.

And by giving your skin the nutrients it needs to make immediate repairs against sun damage, you'll be able to spend adequate time in the sun and have the capacity to replenish antioxidants and make the repairs needed for a more youthful, fresher and more radiant look to your skin.

Research reported in the *American Journal of Clinical Nutrition* found that people with lower micronutrient and fatty acid levels experience skin aging at a faster rate than those with higher levels of these nutrients.[28]

Many other studies have confirmed that nutrition plays a strong role in both skin aging and increased formation of wrinkles.[29] This only makes sense but has been completely neglected in the modern approach to skin care.

| **FOOD FIRST: Get Your Vitamins from a Natural Source** | |
|---|---|
| **Food Source** | **Vitamin Level** |
| Citrus Fruit – oranges, grapefruit, tangerines, etc. | Up to 70 mg/serving of vitamin C – builds collagen, reduces inflammation, protects cells. |
| Cantaloupe | 29 mg/serving of vitamin C |
| Guava | 165 mg/serving of vitamin C |
| Kiwifruit | 162 mg/serving of vitamin C |
| Eggs | 140 micrograms (mcg)/serving of vitamin A – powerful antioxidant that helps maintain healthy cells. |
| Plain Yogurt | 35 mcg/serving of vitamin A |
| Chicken Liver | 11,000 mcg/serving of vitamin A |

| FOOD FIRST: Get Your Vitamins from a Natural Source | |
|---|---|
| Almonds | 11 IU/serving of vitamin E – beneficial to skin health, prevents skin cell damage |
| Peanut Butter | 6 IU/serving of vitamin E |
| Cooked Spinach | 2.5 IU/serving of vitamin E |
| Beef | 3.4 mg/serving of Coenzyme Q10 – an important antioxidant and a building block of the body's tissues. |
| Sardines | 7.3 mg/serving of CoQ10 |

To maintain good tone and texture and keep up your skin's defenses against damage and aging; you must give your skin the right nutrients it needs to make repairs.

A diet rich in a variety of colorful fruits and vegetables is a great first step toward keeping your skin healthy. This is because colorful fruits and vegetables are rich in a variety of antioxidants that help prevent free radicals from damaging your collagen.

Another factor in skin aging is ***inflammation***. Low levels of inflammation either from topical irritants that your skin encounters or from the foods you eat can create a spiral of damage in the skin.

An initial small level of inflammation can trigger more inflammation and can eventually disrupt your body's ability to organize collagen into the proper supportive structure for the skin.[30] The result is thinning, sagging skin and wrinkles.

Dietary omega-6 fatty acids from vegetable oils are particularly apt to cause inflammation that will lead to wrinkles when you consume them in excess.

Epidemiological studies of humans on the molecular level show that we need as much omega-3 as omega-6 fatty acids or about a one-to-one ratio. Yet the average American consumes about 16 times more omega-6 fatty acids than omega-3 fatty acids. This imbalance leads inflammation throughout your body.[31]

Processed foods, vegetable oils and grain-fed red meats are the main source of omega-6s in your diet.

Many of the foods that cause inflammation are the ones that make you fat, too... with a surprising exception.

Foods that are high in empty carbs like bread, bagels, cereal, pasta and French fries are HIGHLY inflammatory. But so are ***farm-raised fish*** like salmon.

It may be shocking to hear that certain forms of salmon are "bad" for you, but it's true. When fish are farm raised, they are deprived of their native diets and fed cereal grains instead. Yes, the fish are fed cereal. And it's as bad for them as it is for us.

So if you're going to eat salmon, which is a wonderful source of omega-3s fats, choose ***wild-caught*** salmon.

And keep in mind that it's just not your food that causes inflammation. In today's world, many of the products you use contain toxic chemicals, which cause problems for your skin... even the ones that claim to "beautify" your skin.

Here's what I mean...

## Would You Take a Bath in a Vat Full of Chemicals?

Look at the ingredients on just about every skin product on the market, from moisturizers to sunscreens to shampoos and you'll find health-threatening chemicals--propylene glycol, parabens, PABA, PEG, and mineral oil.

We talked about PABA in sunscreens earlier... and how it actually ***increases photo aging*** because it inhibits your skin's ability to repair cellular damage.

Make no mistake: These chemicals pose real dangers to your health, ***including cancer.***

And, sadly these chemicals are approved by the FDA and labeled as "healthy."

Did you know that mineral oil is a by-product created when oil is refined into gasoline? And that the "baby oil" everyone thought was so wholesome is simply mineral oil with a chemical fragrance?

Take a look at the chemical cocktail in Johnson's Baby Shampoo "No More Tears" formula:

Cocamidopropyl betaine
PEG-80 sorbitan laurate
Sodium trideceth sulfate
PEG-150 distearate

Polyquaternium-10
Tetrasodikum EDTA
Quaternium-15

Does this sound like something you want to use on your baby?

There are dozens of common chemicals in most commercial skin care products that actually cause skin cancer and other serious health problems.

The list is long and the names are hard to pronounce, but if you check the label, I'm sure you'll find several of them in your favorite brands.

Here's a "top-ten" list of the most toxic types of substances in skin care products my Wellness Research team's identified, and the dangers they pose to your health:

**The Top 10 WORST Chemicals Hiding in Your Cosmetics**

| Chemical Ingredient | Danger to Your Health |
|---|---|
| PEG, polysorbates, laureth, ethoxylated alcohol | Potent *carcinogens* (proven cancer-causing agents) containing dioxane. |
| Propylene glycol | Dermatitis, kidney and liver abnormalities, prevents skin growth, causes irritation. |
| Sodium laurel, lauryl sulfate, or sodium laureth sulfate (sometimes labeled as "from coconut" or "coconut derived" | Combined with other chemicals, it becomes nitrosamine, a powerful cancer-causing agent; penetrates your skin's moisture barrier, allowing other dangerous chemicals to penetrate. |
| Parabens | "Endocrine disruptors," these gender-bending chemicals mimic estrogen, upset your hormonal balance, and can cause various reproductive cancers in men and women. |
| PABA (also known as octyl-dimethyl and padimate-O) | Attacks DNA and causes genetic mutation when exposed to sunlight. |

| The Top 10 WORST Chemicals Hiding in Your Cosmetics | |
|---|---|
| Toluene, also called benzoic, benzyl, or butylated hydroxtoluene | Anemia, low blood cell count, liver and kidney damage, birth defects. |
| Phenol carbolic acid | Circulatory collapse, paralysis, convulsions, coma, death from respiratory failure. |
| Acrylamide | Breast cancer |
| Octyl-methoxycinnamate (OMC) | Kills skin cells |
| Mineral oil, paraffin, petrolatum | Coats skin like plastic and clogs pores, trapping toxins in, slows skin cell growth, disrupts normal hormone function, suspected of causing cancer. |

## The Lotions that Soothe, Heal and Protect

Taking care of your skin from the inside out is important, but it is only half the process. You should also be caring for your skin from the outside in. You can do this by using topical lotions and ointments that protect against telomere loss and help your skin to renew and rejuvenate itself.

Topical lotions that contain vitamin E and vitamin C have a proven protective affect against photo damage.[32] Vitamin C is especially beneficial when used on the skin. In a review of studies, researchers found conclusive evidence supporting vitamin C as a topical agent to fight photo damage.

Results showed better collagen production in treated skin, protection from both UV-A and UV-B damage, a reduction in the appearance of age spots, and a reduction in inflammation in the skin.[33]

Topical lotions that contain green tea extracts will also help to protect your skin from photo damage and inflammation. Green tea contains a polyphenol called EGCG. (This stands for *epigallocatechin-3 gallate*.)

In studies, people who applied green tea extract to their skin before going out in the sun experienced less oxidative stress in the skin. The green tea extract also reduced inflammation in the skin, which will help to reduce wrinkles.[34]

Another topical agent that is proven to work is the isoflavone *equol*. Research shows that right after sun exposure, using a lotion containing the equol reduces inflammation, protects collagen, inhibits photo aging, and helps prevent the development of skin cancers.[35]

There is also the old standby, aloe vera. You are probably familiar with the ability of aloe vera gel to reduce the inflammation related to sunburn. But scientists from the Department of Immunology at the Anderson Cancer Center in Houston have also shown that aloe vera gel protects the skin's immune cells from sun damage.[36]

One of the best aloe vera lotions we know of is *Lily of the Desert Aloe Vera Gelly*. You can find it online or in most health food stores. This product contains only all-natural ingredients, including vitamins A, C and E, all of which have skin saving antioxidant properties.

By using a combination of these topical treatments, you will help your skin stay soft and supple and evenly colored and you will be able to enjoy healthy time in the sun without worrying that you are prematurely aging your skin.

But there's more to keeping your skin young than simply using lotions. I've discovered two breakthrough ingredients that help ***stop the loss of your telomeres***, and in some cases even ***rebuild them.***

## Rebuild, Repair and Restore Your Skin Cells with this DNA Breakthrough

At the beginning of this report I showed how your telomeres are the mechanism by which your skin ages. And now, I'll show you a way to apply this Nobel Prize-winning breakthrough to skin care. It virtually shuts down the aging of your skin's DNA.

By repairing your skin's DNA, you can plump up your skin and erase wrinkles, tighten up your sagging jaw line, make your crow's feet disappear, and banish sun and aging spots.

It all begins with an extract that slows the aging process and can ***extend the lifespan of your skin cells by up to 30%.***

This amazing extract, called ***teprenone***, can help protect the lining of your stomach, and that's a noble medical use, but it has a more exciting effect on your skin. It slows down the appearance of aging.

That's because it penetrates deep within the basal layers of the skin and stabilizes your *telomeres*.

This protects your skin's DNA so you can avoid many of the destructive effects that come with age.

That's why this compound is so exciting. It's the single best – and easiest – thing you can do for your skin to restore the youthful glow you want the world to see.

As you know, each and every day toxins bombard your skin. And when those enzymes disappear it degrades the proteins, antioxidants and oxygen your skin needs to thrive. And it damages your skin's DNA in the process.

Teprenone actively limits, even prevents, oxidative build up in your skin cells and protect your DNA by helping your skin to produce a protein that protects cells against oxidant damage. It also protects the antioxidant activity naturally produced by your skin cells.

In clinical trials of women, the results were promising:[37]

100% increased the level of moisture in their skin

100% saw sun spots improve significantly

Over 90% saw a decrease in redness and pore size

75% experienced an improvement in skin tone and elasticity

75% felt roughness and fine lines faded noticeably

In a similar study, a clinical trial involving a group of mature women who were suffering from age-related skin problems experienced a ***35% increase in skin firmness... a 45% improvement in skin tone... and a restoration of natural skin moisture.***[38]

Teprenone protects your telomeres by activating genes involved in their regulation and elongation. And by protecting your DNA from free radical stress, teprenone supports healthy cell division. It also helps improve the metabolism of your skin cells and ***prevents the loss of cell function by up to 60%.***[39]

## Keep the Moisture and Suppleness of Your Youth

I live near the Florida coast, the shark attack capital of the world. But even here, you're probably more likely to be struck by lightning than bitten by a shark. In other words, our fear of sharks doesn't make much sense.

And it's too bad we're so frightened of sharks. Because they have a lot to teach us about health and beauty. Take shark cartilage for instance. It's been proven to help protect joint tissue from arthritic breakdown.[40]

And now we've discovered an old fishermen's cure-all may be one of the most important anti-aging breakthroughs in decades.

Shark liver oil comes from sharks that swim in cold, deep waters – even down to 3,000 feet, where light doesn't penetrate. At those depths, the pressure is intense and most sharks can't survive.

But deep-water sharks have a substance in their liver that helps them survive in such harsh conditions. It's a type of fat called squalene.

Squalene is also found in almost every cell of your body. Especially your skin cells. Sebum – your body's natural skin lubricant and conditioner – is rich in squalene.

In fact, it accounts for about 12% of the total fat content in an area of your skin called the *sebum*.[41]

You had plenty of squalene during your childhood and into your teen years. The problem is, once you enter your 20s, the amount of squalene in your skin decreases rapidly.

More importantly, that loss of squalene opens you up to sunburn and damage caused by the suns UV rays. And because it's already naturally in and on your skin, squalene is safe and gentle.

**Squalene** has a powerful hydrating action and penetrates into the deepest layer of your skin for the most protection. At the same time, it produces a barrier against water loss, restoring moisture and suppleness to your face, and reducing fine lines and wrinkles.

**Squalene** is easily absorbed and leaves it soft and supple with no greasy residue. It also helps prevent the growth of harmful microorganisms by creating a protective antibacterial coating on your skin.[42]

But squalene doesn't have a long shelf life and deep-water sharks are in short supply. So taking advantage of squalene's benefits has been expensive. Until recently.

First, scientists discovered that squalene can be naturally stabilized. The result is *squalane* (with an "a"). Squalane has all of squalene's benefits… plus, it remains stable for a long time. And new technology has opened up another, renewable source of squalane: olives.

Now the anti-aging benefits of squalene – once out of reach for most women – are available to everyone. And that's great news, because squalane may be one of your most powerful allies in your fight against the effects of aging.

Squalane doesn't act like a typical fat. Most fats oxidize easily. That is, they're easily damaged by free radicals. But squalane resists oxidation. And it goes further. It acts as a powerful antioxidant on your skin. Studies have shown it's as powerful as BHT, an antioxidant chemical used in many cosmetics.[43]

Squalane is so effective, the Academy of Anti-Aging Research reports it can even help restore smoothness to skin that's been damaged by frequent detergent use or sunburn.[44]

And that's not all. Squalane helps strengthen your skin's ability to hold in moisture by forming a barrier on your skin. It absorbs deeply into your skin to promote flexibility and suppleness.[45] French researchers also report it can help reduce the appearance of lines and wrinkles.[46]

In other words, if you wanted to invent a perfect anti-aging cream for your skin, you'd invent something very much like squalane.

Squalane is already being used in some sunscreen products and acne creams… as well as in vaccines. With so many anti-aging properties, you can expect to see it cropping up in more soon.

But beware. Some products contain very little squalane – as little as 1/10th of 1%. I doubt you'll get much benefit from such tiny amounts. Be sure to read labels carefully before you buy. Ingredients are listed on product labels in the order of what it includes the most of, so be sure squalane is one of the first items listed.

---

[1] Kaare Christensen, et al, "Perceived age as clinically useful biomarker of ageing: cohort study." *BMJ* 2009; 339:b5262

[2] Delara et al. "Association of Longer Telomeres With Better Health in Centenarians." *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*. 208. 63:809-812.

[3] Cathryn Delude in "Genetic clues to predicting life span: Inside chromosomes are telomeres that age as we age, and may serve as indicators of how long we'll live." *Los Angeles Times.* March 2, 2009.

[4] Farzaneh-Fal et al. "Prognostic Value of Leukocyte Telomere Length in Patients With Stable Coronary Artery Disease: Data From the Heart and Soul Study." *Arteriosclerosis, Thrombosis & Vascular Biology*. 2008. 28(7):1379-1384.

[5] Kosmadaki MG, et al. The role of telomeres in skin aging/photoaging. Micron. 2004;35(3):155-9.

[6] Lappe J, et. al. "Vitamin D and calcium supplementation reduces cancer risk." *Am. J. Clinical Nutrition* 2007;85,6:1586-1591.

[7] Richards, J Brent, et al, "Higher serum vitamin D concentrations are associated with longer leukocyte telomere length in women," *J Clin Nutr* 2007; Vol. 86, No. 5, 1420-1425.

[8] O'Donovan A, et. al. "Cumulative Inflammatory Load Is Associated with Short Leukocyte Telomere Length in the Health, Aging and Body Composition Study." *PLoS One.* 2011; 6(5): e19687.

[9] Hanson KM and Simon JD. (1998) Epidermal transurocanic acid and the UV-A induced photoaging of the skin. Proc Natl Acad Sci USA 95(18): 10576-78

[10] Yamamoto Y. (2001) Role of active oxygen species and antioxidants in photoaging. J Dermatol Sci 27 Suppl 1: S1-4

[11] Cosgrove MC, et al. Dietary nutrient intakes and skin-aging appearance among middle-aged American women1,2,3,4. American Journal of Clinical Nutrition, Vol. 86, No. 4, 1225-1231, October 2007.

[12] Phillips CL, et al. Effects of Ascorbic Acid on Proliferation and Collagen Synthesis in Relation to the Donor Age of Human Dermal Fibroblasts. Journal of Investigative Dermatology (1994) 103, 228–232.

[13] Furumoto K, et al. Age-dependent telomere shortening is slowed down by enrichment of intracellular vitamin C via suppression of oxidative stress., *Life Sciences* 63(11):935-48, 1998

[14] Maggini S, et al. Selected vitamins and trace elements support immune function by strengthening epithelial barriers and cellular and humoral immune responses. Br J Nutr. 2007 Oct;98 Suppl 1:S29-35.

[15] Sies H and Stahl W. Nutritional protection against skin damage from sunlight. Annu Rev Nutr. 2004;24:173-200.

[16] Rhodes LE, et al. Dietary Fish Oil Reduces Basal and Ultraviolet B-Generated PGE2 Levels in Skin and Increases the Threshold to Provocation of Polymorphic Light Eruption. Journal of Investigative Dermatology (1995) 105, 532–535.

[17] Segger D, et al. Supplementation with Eskimo Skin Care improves skin elasticity in women. A pilot study. J Dermatolog Treat. 2008;19(5):279-83.

[18] Ziboh VA, et al. Effects of Dietary Supplementation of Fish Oil on Neutrophil and Epidermal Fatty Acids. Arch Dermatol 1986;122:1277-1282.

[19] S.B.Bittinera,etal.ADouble-Blind,Randomised,Placebo-ControlledTrialOfFishOilInPsoriasis.TheLancet. Volume 331, Issue 8582, 20 February 1988, Pages 378-380.

[20] Goode GK, et al. Dietary Supplementation With Marine Fish Oil Improves In Vitro Small Artery Endothelial Function in Hypercholesterolemic Patients. Circulation. 1997;96:2802-2807.

[21] Ramin Farzaneh-Far, MD et. al. "Association of Marine Omega-3 Fatty Acid Levels With Telomeric Aging in Patients With Coronary Heart Disease." JAMA. 2010 January 20; 303(3): 250.

[22] The “Scientific Research” section of Eat Wild. www.eatwild.com. Retrieved Jan 24, 2012.

[23] Hoppe1U,etal.CoenzymeQ10,acutaneousantioxidantandenergizer. BioFactors. Volume9, Numbers 2-4. 1999, Pp 371-378.

[24] PrahlS,etal. Aging skin is functionally anaerobic:importance of coenzymeQ10 for anti aging skin care.Biofactors. 2008;32(1-4):245-55.

[25] Muta-Takada K. et al. Coenzyme Q10 protects against oxidative stress-induced cell death and enhances the synthesis of basement membrane components in dermal and epidermal cells. BioFactors. Volume 35, Issue 5, Pages 435 – 441. Published Online: 14 Sep 2009.

[26] Ibid.

[27] Langsjoen PH, et al. Supplemental ubiquinol in patients with advanced congestive heart failure. Biofactors. 2008;32(1-4):119-28.

[28] Boelsma E, et al. (2001) Nutritional skin care: health effects of micronutrients and fatty acids. Am J Clin Nutr; 73(5): 853-64

[29] Purba, MB, et al. (2001). Skin wrinkling: Can food make a difference? J Am Coll Nutr. 20(1): 71-80.

[30] Giacomoni, Paolo. (2005) Ageing, Science, and the Cosmetics Industry. EMBO Reports; 6:S45-S48

[31] Simopoulos AP. (2006) Evolutionary aspects of diet, the omega 3/omega 6 ratio and genetic variation: nutritional implications of chronic disease. Biomed Pharmacother; 60(9): 502-7

[32] Eberlain-Konig B, Ring J. (2005) Relevance of vitamin C and E in cutane- ous photoprotection. J Cosmet Dermatol, 4(10): 4-9

[33] Farris PK. (2005) Topical vitamin C: a useful agent for treating photoaging and other dermatological conditions. Dermatol Surg; 31(7pt2): 814-17

[34] Katiyar SK, et al. (1999) Polyphenolic antioxidant (-)-epigallocatechin-3-Photochem Photobiol; 69(2):148-53. 17 Reeve VE, et al. (2005) Protection against photoaging in the hairlss mouse
Photochem Photobiol, 81(6): 1548-53

[35] Reeve VE, et al. (2005) Protection against photoaging by the isoflavone equol. Photobiol, 81(6): 1548-53

[36] Strickland, FM et al. (1999) Inhibition of UV-induced immune suppression and interleukin-10 production by plant oligosaccharides and polysaccharides. Photochem Photobiol. 69(2):141-7.

[37] Monograph. Renovage study for patent WO 2006/120646. Sederma. 2007
[38] Monograph. Renovage study for patent WO 2006/120646. Sederma. 2007
[39] Monograph. Renovage study for patent WO 2006/120646. Sederma. 2007
[40] Imada K., et al, "Anti-arthritic action mechanisms of natural chondroitin sulfate in human articular chondrocytes and synovial fibroblasts," *Biol Pharm Bull*. 2010;33(3):410-414.
[41] Botek AA, et al. The structure and function of the sebaceous glands. The Biology of the Skin. New York, NY: Parthenon Publishing Group, Inc.;2001:94.
[42] Kelly GS. Squalane and its potential clinical uses. Altern Med Rev. 1999 Feb;4(1):29-36.
[43] Kohno Y., et al, "Kinetic study of quenching reaction of singlet oxygen and scavenging reaction of free radical by squalene in n-butanol," *Biochim Biophys Acta*. 1995;1256(1):52-6.6.
[44] Lam M., Sulindro M., "Aging Skin," *Academy of Anti-Aging Research* 2001;23(1):5.
[45] Huang Z.-R., et al, "Biological and Pharmacological Activities of Squalene and Related Compounds: Potential Uses in Cosmetic Dermatology," *Molecules* 2009;14:540-554.
[46] Jame P., et al, "Differentiation of the Origin of Squalene and Squalane Using Stable Isotopes Ratio Analysis," *SOFW-Journal* Jan/Feb 2010;136:1-7.