



Debra's Guide to
Choosing Natural

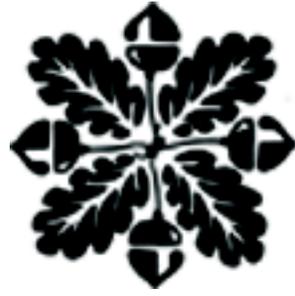
SUN

Protection

This e-book is set up so you can print it out two-sided.

Because of this, some of the pages are left blank.

To print on both sides of one sheet of paper,
follow the instructions that came with your printer.



Debra's Guide to...

Choosing Natural

SUN

Protection

by Debra Lynn Dadd



OAK GROVE OMNIMEDIA
Clearwater, Florida

OAK GROVE OMNIMEDIA

Oak Grove Omnimedia, 411 Cleveland Street #263, Clearwater, Florida 33755

Copyright 2006 by Debra Lynn Dadd

All rights reserved. No part of this book may be reproduced, scanned, or distributed in any printed or electronic form without permission. Please do not participate in or encourage piracy of copyrighted materials in violation of the author's rights. Please purchase your own copy of this e-book.

You may contact the author via email at debra@dld123.com.

WHY AN E-BOOK?

E-books are a fast, inexpensive way to publish up-to-the minute information quickly and easily and make it available to readers without delay.

Environmentally, e-books reduce a tremendous amount of publishing waste. As a reader, you can print out the whole book on your choice of recycled paper, or print only those pages you are interested in. Or, you can simply read the book on your computer.

When you are finished with this book, it simply goes back into cyberspace instead of to a landfill.



Plants should be given sun and air and the blue sky, give them to your boys and girls. I do not mean for a day or a month, but for all the years. By surrounding this child with sunshine from the sky and your own heart, by giving the closest communion with nature, by feeding this child well-balanced, nutritious food, by giving it all that is implied in healthful environmental influences, and by doing all in love, you can thus cultivate in the child and fix there for all its life all of these traits.

Luther Burbank

CONTENTS

INTRODUCTION	1
WHY OUR BODIES NEED SUN AND LIGHT	2
WHY WE NEED TO PROTECT OUR BODIES FROM THE SUN	4
WORDS TO KNOW	5
CREATING A "SAFE SUN STRATEGY"	7
SAFE SUNBATHING FOR HEALTH	13
STAY INDOORS AT MIDDAY	14
WEAR PROTECTIVE CLOTHING.....	16
SUNSCREENS	19
SUNLESS TANNING LOTIONS.....	22
SUNGLASSES	23
MY PERSONAL SAFE SUN STRATEGY	25
RECOMMENDED READING	27

INTRODUCTION

I began this book after receiving a number of emails with questions about sunscreens and other sun products. As the author of *Home Safe Home*, and publisher of *Debra's List*—an online directory of green products—I often get questions from readers wanting help in choosing products.

I found that I couldn't answer what seemed like simple questions about sun protection with simple answers. Sun protection is not about what brand of sunscreen to buy. It's about choosing the right sun protection strategy for your own needs and the sun conditions that exist where you are at the moment.

I also found that the standard advice being publicized about sun protection actually isn't the best advice for good health. Yes, we do need to protect our skin from the harmful rays of the sun, but in our rush to do so we seem to have forgotten that sunlight is essential to life. It used to be that being out in the sun was considered a healthful activity—now we seem to fear the sun to the degree that we must shield ourselves from it at every moment.

What we need is to both receive the life-giving benefits of the sun and protect our bodies from its harmful rays when necessary. We need to know how to evaluate the potential danger from the sun at any given time and place and be prepared to take appropriate sun precautions, suitable to our own needs and the conditions of our surrounding environment. We need to know when and how it is safe to expose our bodies to the sun and benefit from its life-enhancing properties, and when and how to protect our bodies from its harmful rays. And when we do need sun protection, we need to know what are the most healthful and natural ways to protect our bodies from the sun.

In this book, I'll tell you how you can create an appropriate Safe Sun Strategy that meets your own individual needs, using the sun protection products appropriate for YOU.

WHY OUR BODIES NEED SUN AND LIGHT

Living things need the light of the sun to grow and flourish—and our bodies are no exception. Since the beginning of the existence of our species, we have lived with the sun, and we need exposure of sunlight, through our skin and natural light from the sun through our eyes.

Sun

Exposing our skin to natural sunlight is a vital part of maintaining good health.

The interaction of sunlight with skin produces Vitamin D, a vital nutrient that is not found in foods that are common in our modern diet. Vitamin D does occur naturally in egg yolks, liver, yeast, shrimp, salmon, tuna, and fish liver oils, and is added to fortified milk and enriched bread. However, sunlight is still needed to help the body synthesize vitamin D from these sources, and *vitamin D is essential to the optimal function of every cell, tissue, organ, and system in our bodies.*

In 2002, Catherine Gordan, MD, a doctor at Boston Children's Hospital, reported that more than 50% of adolescent children in Boston were deficient in vitamin D. At the University of Maine, Susan Sullivan MD discovered that 48% of young white girls aged 9-11 were vitamin D deficient at the end of winter, and by the end of summer, 17% were still deficient.

"The risk of death from cancer as a result of vitamin D deficiency may be thirty times greater than the risk of dying of skin cancer as a result of being in the sun."

—Edward Giovannucci, MD, Harvard Medical School

So important is our ability to synthesize vitamin D to our health that our bodies have a mechanism—skin color—to ensure that the right amount of sun reaches our skins, regardless of where an individual body dwells on Earth. The first humans lived near the equator. Their bodies developed dark skin rich with melanin that protected them against burning in the plentiful sun, while still letting enough sunlight penetrate the skin to make vitamin D. As migrating tribes started to move away from the equator into areas where the sun became progressively weaker, their skins became lighter and lighter, their skin became less and less pigmented to make best use of the available sun.

Sunlight also activates the body's absorption of calcium and other minerals. So simply taking a calcium or mineral supplement or eating foods containing these nutrients isn't enough. Our bodies need sunlight to assimilate them.

Since ancient times, sunbathing was considered a restorative for health. Even cave paintings show an understanding that exposure to sun was essential to life. The healing powers of the sun were celebrated by ancient peoples around the world, from the Egyptians, Greeks and Romans to the Aztecs and Incas.

Prior to the discovery of penicillin in 1938, sunshine was routinely used to treat many ills. Conditions known to be helped by sunshine therapy include tuberculosis, colitis, anemia, gout, cystitis, arteriosclerosis, rheumatoid arthritis, eczema, acne, herpes, lupus, sciatica, asthma, and kidney problems.

Modern studies have shown that exposure to sunlight can

- lower blood pressure
- uplift mood
- enhance the immune system
- lower blood sugar in diabetics
- help us tolerate stress
- increase the efficiency of the heart
- reduce cholesterol
- assist in weight loss
- stimulate the thyroid gland
- improve psoriasis
- kill infectious bacteria
- improve asthma
- increase sex hormones
- increase the hormones that affects the body's responses to sunlight and darkness

...and have other good effects.

Light

It is important for our bodies to be exposed to natural light on a daily basis—just as important as getting proper nutrition, sleep and exercise.

Back in the 1970s, photobiologist John Ott found strong indications, through a series of experiments, that the blocking of natural UV rays from the sun may severely weaken body defenses. Ott found that UV light *through the eyes* stimulates the immune system. While there is no question that UV light in large amounts is harmful, in trace amounts in natural sunlight, it is a "life-supporting nutrient" that is very beneficial.

For our health, it is very important to spend at least one hour a day outdoors in natural light. This doesn't mean direct sunlight, or even being in the sun at all. Shaded light is perfectly acceptable, in fact, it's preferable. The only criterion is that it be *natural*.

At home you can sit on a screened porch, under a shaded tree, or next to an open window (a closed window blocks the essential ultraviolet rays). At work, make a point of eating meals outdoors and taking a walk on your break.

WHY WE NEED TO PROTECT OUR BODIES FROM THE SUN

With the thinning of the ozone layer, we also need to protect our skin from the sun. The ozone layer acts as a shield in the upper atmosphere that absorbs most of the harmful types of ultraviolet (UV) radiation from the sun that would be harmful to humans, animals, and plants. As more CFCs and other chlorine-based chemicals reach the upper atmosphere and interact with molecules in the ozone layer, more UV rays pass through to Earth.

In 1991, scientists reported that ozone levels had declined 4 to 8 percent over the Northern Hemisphere in the last decade. A wave of studies released in 1991 indicated that the ozone layer was thinning twice as fast as previously expected over highly populated regions.

Also in 1991, scientists preparing an assessment of ozone damage for the United Nations Environment Programme revealed that, for the first time, ozone over mid-latitude regions like North America and Europe had thinned during the spring and summer. Depletion during these warmer seasons is more dangerous because the hole allows the sun's rays to penetrate when they are at their strongest and when people are more often outdoors. In 1992, the World Meteorological Organization reported that stratospheric ozone declined sharply over parts of Western Europe, and areas of depleted ozone were found as far south as the Caribbean.

A 10-percent reduction in ozone is likely to lead to about a 20-percent increase in harmful UV radiation. Increased UV radiation leads to increased skin cancer and aging and wrinkling of the skin. It also appears that increased UV radiation damages the human immune system at much lower doses than are required to induce cancer.

Ozone depletion also can cause eye damage. The United Nations Environment Programme has estimated that a 10-percent reduction in ozone could cause up to 1.75 million cases of blindness.

Today, the ozone layer is monitored every day (if you want, you can take a look at yesterday's map of the ozone layer over North America at http://exp-studies.tor.ec.gc.ca/e/ozone/Curr_allmap.htm).

The most important thing to remember, however, is that the ozone layer is fluctuating all the time. Depletion levels are different at different times of year and in different places on Earth. The most depletion occurs over the poles and surrounding areas during the summer months.

If you are interested in learning more about the ozone layer, visit the ozone website of the Environmental Protection Agency at <http://www.epa.gov/ozone/>.

WORDS TO KNOW

Sun protection is all about blocking the sun's harmful rays from our bodies. Before we go any further, there are a few specific terms you'll need to understand in order to evaluate various options intelligently.

Ultraviolet Radiation (UV)

UV rays are a part of sunlight that is an invisible form of radiation that can penetrate and change the structure of skin cells. There are three kinds of UV rays that are harmful to skin and health.

UVB rays have shorter wavelengths and are the principal cause of sunburn, skin cancer, and premature aging of the skin.

UVA rays have longer wavelengths and penetrate more deeply into the skin, contributing to skin cancer and aging.

There are also **UVC** rays. These are extremely hazardous to skin, but are completely absorbed by the stratospheric ozone layer and do not reach the surface of the Earth.

For complete protection, you need to take precautions to protect against both UVA and UVB radiation.

Sun Protection Factor (SPF)

Sun protection products are rated with a **Sun Protection Factor (SPF)**, which indicates how much longer you can remain safely in the sun while using this particular method of sun protection than if you were to be in the sun unprotected. For example, SPF-2 would allow you to stay out twice as long; SPF-30 allows you to stay in the sun thirty times as long.

SPF 2-4 provides minimal protection, and permits tanning

SPF 4-6 provides moderate protection and permits some tanning

SPF 6-8 provides extra protection and permits a limited tan

SPF 8-15 provides maximum protection, with little or no tan

SPF-15+ provides ultra protection, and no tan at all.

Since everyone has a different skin type, the amount of time it takes for skin to burn differs with every individual, as well as sun conditions.

The general recommendation is to choose a sunscreen with an SPF-15. The others are offered for those who tan easily or, at the other end of the spectrum, have very

fair skin that needs extra protection, The average fair-skinned person begins to burn after twenty minutes in full sun. Wearing SPF-15 sunscreen allows that person five hours in the sun before burning.

The most important thing to remember about the SPF system is this: *it measures only UVB rays, not UVA rays, so it is important to check the labels to see if the product blocks both types of radiation.*

CREATING A "SAFE SUN STRATEGY"

In contrast to the universal consumer solution of sunscreen-and-sunglasses for everyone in every place all the time, your individual Safe Sun Strategy is tailored to your own individual needs and varies with time and place.

We each need to find a balance between exposing our skin and eyes to enough sun and light for good health, yet protect our bodies from the harm the sun might cause during certain conditions. It's similar to dealing with fire—we want enough for light and warmth, but too much, used in the wrong way, can burn the house down.

When I was a young girl I was a Girl Scout and I learned the motto "Be Prepared." What a Safe Sun Strategy does is allow you to look at your own needs for sun protection and be prepared to do those things when the time comes.

Let's take a look at the factors to consider when choosing sun protection. You might want to pull out a piece of paper and take some notes about your sun protection needs.

1. What is your skin type?

In 1976, a system for classifying skin types was developed, based on the degree to which skin will burn or tan. This is used by most dermatologists as a guide for sun protection.

SKIN TYPE	SKIN COLOR	TANNING AND SUNBURNING HISTORY
1	Pale white skin	Always burns easily, never tans, sensitive to sun exposure (red or blonde hair, blue or hazel eyes, freckles)
2	White skin	Usually burns easily, tans minimally with difficulty (blonde, red or brown hair; blue, green, or hazel eyes)
3	White to olive skin	Sometimes burns moderately, tans gradually to light brown (people of Mediterranean and Middle Eastern origin—the largest group in the United States)
4	Olive or light brown skin	Burns minimally, always tans well to moderately brown (dark brown hair, dark eyes)
5	Medium-to-dark skin	Rarely burns, tans profusely to dark (Some Africans, South East Asians)
6	Dark skin	Never burns, deeply pigmented, least sensitive (some Africans and Asians)

If you have lighter skin, you'll need more than sunscreen-and-sunglasses. If you have dark skin, you'll be able to tolerate more sun, but still need to take precautions during the heaviest times of UV exposure.

2. What exposures do you have to the sun?

Part of having a Safe Sun Strategy is to be aware of when we are being exposed to the sun and responding appropriately. Before we can respond appropriately we need to simply become aware of when and how we are exposed to the sun.

Most of us have fairly routine lives, and so our sun exposures are fairly similar day in and day out.

For this question, take a look at what your typical exposures are to the sun during the course of a typical week, the time of day and the length of time. For a school-age child, it might be:

<i>morning recess</i>	<i>10:00am</i>	<i>10 minutes</i>
<i>lunch and recess</i>	<i>noon</i>	<i>30 minutes</i>
<i>playing after school</i>	<i>3:00-5:00pm</i>	<i>2 hours</i>

Then look at occasional exposures such as:

<i>going to the beach</i>	<i>10:00-4:00</i>	<i>6 hours</i>
---------------------------	-------------------	----------------

Write these exposures out as best you can and then just observe your life to see what your exposures really are and add them to your list.

3. How strong is the UV exposure in the place where you are?

The level of UV radiation that reaches a particular place on the Earth depends on several factors.

Ozone layer

The function of the ozone layer around the Earth is to absorb most of the sun's UV radiation. How much it absorbs depends on the time of year and where on Earth you are. Though some parts of the ozone layer are thinner than others, overall the ozone layer is thinner due to industrial pollution.

Latitude

UV levels are strongest at the equator, which is 0° latitude, where the sun is directly overhead. As one moves more north or more south, the UV rays must travel further and further through the atmosphere and so become weaker and weaker.

The area with the strongest sunlight is the "tropics". They are so called because it is the area between the two latitudes known as the Tropic of Cancer and the Tropic of

Capricorn. These two tropics mark the latitude where the sun is directly overhead at noon on the summer solstice and the winter solstice, respectively. The tropics are bounded by the Tropic of Cancer on the north (latitude 23N) and Tropic of Capricorn on the south (latitude 23S)." This area does not experience seasons because the sun is always high in the sky.

The "subtropics" is the area between 23 and 35 degrees latitude. In the United States, most of the state of Florida is in the subtropics.

The "mid-latitudes" lie between 36 and 60 degrees. Most of the United States falls into this area.

The "high latitudes" are between 50 and 70 degrees. The most northern states, from Washington to Maine, fall in this area.

Obviously a Safe Sun Strategy for me living in Florida would be very different from yours if you lived in Maine.

Elevation

UV levels are stronger at higher altitudes because there is less atmosphere to absorb them.

It's fairly easy to find out the altitude of where you live. You could look on a topographic map of your area, but I was able to find out the exact elevation of my house with a quick phone call to my local planning department.

But you don't need to be this exact. You probably already know from simple observation if you live near sea level or in the mountains.

Extra precautions only need to be taken at mountainous elevations.

UV Index

The UV Index makes it easy to determine the degree of sun protection you need anywhere in the United States. It is issued daily by the National Weather Service and the Environmental Protection Agency. It provides a forecast of the expected risk of overexposure to UV rays at noon for the given day and indicates the degree of caution you should take when working, playing, or exercising outdoors. Here in Florida, it is given every night with the weather forecast on the evening news.

The UV Index predicts exposure levels on a 0-11+ scale, where 0 indicates a low risk of overexposure and 11+ means a very high risk of overexposure. It is calculated for various locations across the country, taking into account variables including the condition of the ozone layer, elevation, latitude, time of year, time of day, and cloud cover and other local conditions that affect the amount of UV radiation reaching the ground.

The level of danger calculated for the basic categories of the index are for a person with Type II skin. For a person with type II skin, for example, an Index value of 5 or 6 represents a moderate possibility of UV overexposure.

THE UV INDEX

EXPOSURE CATEGORY	INDEX NUMBER	SUN PROTECTION ADVICE
LOW	<2	<p>Wear sunglasses ON bright days. IN winter, reflection OFF snow can nearly DOUBLE UV strength.</p> <p>IF you burn easily, cover up AND USE sunscreen SPF 15+.</p>
MODERATE	3-5	<p>Take precautions, such AS covering up AND USING sunscreen SPF 15+ if you will be outside.</p> <p>Stay IN shade near midday When the sun is strongest.</p>
HIGH	6-7	<p>Protection against sunburn is needed</p> <p>Reduce time in the sun between 10 a.m. AND 4 p.m.</p> <p>Cover up, wear a hat and sunglasses, and use sunscreen SPF 15+.</p>
VERY HIGH	8-10	<p>Take extra precautions. Unprotected skin will be damaged and can burn quickly.</p> <p>Try to avoid the sun between 10 a.m. and 4 p.m. Otherwise, seek shade, cover up, wear a hat and sunglasses, and use sunscreen SPF 15+.</p>
EXTREME	11+	<p>Take all precautions. Unprotected skin can burn in minutes. Beachgoers should know that white sand and other bright surfaces reflect UV and will increase UV exposure.</p> <p>Avoid the sun BETWEEN 10 a.m. and 4 p.m. Seek shade, cover up, wear a hat and sunglasses, and use sunscreen SPF 15+.</p>

You can get the UV index for anywhere in the United States by looking at a color map of the country or entering your zip code at <http://www.epa.gov/sunwise/uvindex.html>. You can even sign up for email alerts to be sent to you when UV danger is high.

4. What immediate conditions may be affecting UV levels where you are right now?

Reflection from environment

Various surfaces in the surrounding environment can also affect the amount of UV rays your body is exposed to.

Grass and water reflect only 3-5% of UV rays, whereas dry sand reflects 17% of UV rays and sparkling snow reflects 85% of UV rays. This is why even if you are sitting under an umbrella at the beach, you can still get a sunburn.

Concrete and buildings with lots of glass or light exteriors can also reflect UV rays.

Time of day

UV levels are strongest at noon, when the sun is directly overhead. At that time, the rays have the shortest distance to travel through the atmosphere to the Earth. UV rays are less intense during the hours before and after noon, and are completely nonexistent, of course, at night.

Time of year

UV levels are strongest at the summer solstice (around June 21 in the Northern Hemisphere), when the sun is directly overhead. It is weakest at the winter solstice (around December 21 in the Northern Hemisphere). Combining the time of day and the time of year, the strongest sun occurs at noon on the summer solstice, but is also strong all through the summer.

Weather conditions

UV levels are stronger on clear days and weaker on cloudy days. UV rays can, however, penetrate cloud cover, so there is still a danger of sunburn on cloudy days.

Devising Your Strategy

Every time you are exposed to the sun, you'll need to take these factors into consideration when choosing an appropriate level of sun protection.

While it may seem like a lot at first, most of the factors are fixed and you'll only need to look at temporary changes. And then use the level of sun protection that is needed.

It's really quite simple. You'll already know what your skin type is. Perhaps you'll make a regular habit of checking the EPA website every morning for the UV Index, so you'll know how careful you need to be that day. Then it's just a matter of being aware of the time of year and the time of day and the environmental conditions that may be blocking or reflecting rays. It only takes a minute to be aware of all these things once you know the basic principles. And then you can intelligently choose what sun protection devices you need for the day and at the moment.

On the following pages I'll tell you the options for sun protection, then share with you my own Safe Sun Strategy as an example.

SAFE SUN STRATEGY REMINDER

PERSONAL

Skin type
Activity—time of day and duration of exposure

LOCATION

UV Index

IMMEDIATE

Reflection
Time of Day
Time of Year
Weather

STRATEGY:

SAFE SUNBATHING FOR HEALTH

Once you have determined your own Personal Sun Profile, the most important thing is to find out how much unprotected sun your body needs for good health.

Sunbathing for health is different from sunbathing for a deep, dark tan.

The basic rule of thumb is to take care not to burn. Start by exposing your skin to the sun only a few minutes a day.

Dr. Michael F. Holick, author of *The UV Advantage*, has come up with a formula for determining how much sun you need to maintain adequate levels of vitamin D in your body:

Estimate how long it will take for you to get a mild sunburn (when your skin gets pink...), then two to three times a week, expose your face, hands, and arms (or arms and legs) for 20 to 25 percent of that time. In other words, if it would take thirty minutes for your skin to get pink in the sunshine, then two to three times a week spend six to eight minutes in the sun [without sunscreen]...Remember, I do not advocate that you ever get a mild sunburn, but simply that you estimate how long it would take you to get a mild sunburn and make your calculations of safe sun time accordingly.

A Nice "Healthy" Tan?

Tanning is the result of the production of melanin, which occurs after the sun's UV rays have killed some cells and damaged others in the skin's inner layer. Though we think of a nice tan as a sign of health, its actually a sign of skin damage.

The amount of time it takes for your skin to burn will obviously be different at different times of day, at different times of year, and in different locations.

For someone with Type 3 skin, in the mid-latitudes, during the sun-safe hours of 8-11am and 3-6pm, Dr. Holick estimates 20-30 minutes in the summer and 30-40 minutes in the spring and fall. But do your own estimation as each individual body is different.

STAY INDOORS AT MIDDAY

The number one piece of advice that all experts and agencies give without exception is: the best way to protect your skin from the harmful effects of UV rays is to *stay indoors in the middle of the day*.

Staying indoors at midday is such a time-honored tradition in sunny countries that the entire culture is built around it. In some places, businesses shut down in the middle of the day. All social activity ceases. And then it resumes mid-afternoon. Before there was air conditioning, this was the natural way people accommodated the sun and the heat.

This is such common wisdom in some places, that it became immortalized in the phrase "only mad dogs and Englishmen go out in the mid-day sun." This is from the story "[The Strange Ride of Morrowbie Jukes](#)" by Rudyard Kipling—a tale about a victim of sunstroke.

In 1932, this wisdom was further elaborated by Noel Coward in his popular song Mad Dogs and Englishmen (you can hear a bit of the song at <http://www.sabrizain.demon.co.uk/malaya/coward.wav>).

In tropical climes there are certain times of day
When all the citizens retire, to tear their clothes off and perspire.
It's one of those rules that the biggest fools obey,
Because the sun is much too sultry and one must avoid its ultraviolet ray --
The natives grieve when the white men leave their huts,
Because they're obviously, absolutely nuts --

Mad dogs and Englishmen go out in the midday sun.
The Japanese don't care to, the Chinese wouldn't dare to,
Hindus and Argentines sleep firmly from twelve to one,
But Englishmen detest a siesta,
In the Philippines there are lovely screens, to protect you from the glare,
In the Malay states there are hats like plates, which the Britishers won't wear,
At twelve noon the natives swoon, and no further work is done -
But Mad Dogs and Englishmen go out in the midday sun.

It's such a surprise for the Eastern eyes to see,
That though the British are effete, they're quite impervious to heat,
When the white man rides, every native hides in glee,
Because the simple creatures hope he will impale his solar topee on a tree.
It seems such a shame that when the English claim the earth
That they give rise to such hilarity and mirth -

Mad Dogs and Englishmen go out in the midday sun.
The toughest Burmese bandit can never understand it.
In Rangoon the heat of noon is just what the natives shun.
They put their scotch or rye down, and lie down.
In the jungle town where the sun beats down, to the rage of man or beast,
The English garb of the English sahib merely gets a bit more creased.
In Bangkok, at twelve o'clock, they foam at the mouth and run,
But mad dogs and Englishmen go out in the midday sun.

Mad Dogs and Englishmen, go out in the midday sun.
The smallest Malay rabbit deploras this stupid habit.
In Hong Kong, they strike a gong, and fire off a noontday gun.
To reprimand each inmate, who's in late.
In the mangrove swamps where the python romps there is peace from twelve til two.
Even caribous lie down and snooze, for there's nothing else to do.
In Bengal, to move at all, is seldom if ever done,
But mad dogs and Englishmen go out in the midday sun.

WEAR PROTECTIVE CLOTHING

The most prudent way to shield your skin from the sun's harmful rays is to wear protective clothing such as windbreakers, scarves, gloves, and hats.

My great-aunt Louise, who was a very fine lady, lived in Santa Barbara, a very sunny place on the coast of Southern California. She *always* wore a very-wide-brimmed hat, gloves, and a scarf, and never wore sunscreen or sunglasses. She lived to be 99 years old.

What a Difference a Hat Makes!

My husband Larry and I both wear hats in the sun, but until I took the pictures below for this book, I really didn't realize how much shade they really provide (I rarely have a mirror to look into when I am out in the sun!).



I have two hats I wear—a visor, which is cooler, and a wide-brimmed straw hat which gives more shade.



Throughout history, people have developed various styles of hats to protect their eyes and faces from the sun--from the extra-wide-brimmed sombreros of Mexico to the prairie bonnets and cowboy hats of the Wild West, hats are the traditional way to shield our faces from the sun.

Hats have been proven to be very effective at reducing the risk of skin cancer. A study at Queensland University in Australia showed the risk to farmers of getting skin cancer was one hundred times greater if they did not wear a hat.

Researchers in England found that a hat for adults must have a brim of at least three inches to effectively protect the nose and cheeks.

Also, make sure that the material from which the hat is made is tightly woven. UV rays can pass right through loose weaves.

Umbrellas

Though today we carry umbrellas only to keep ourselves dry in the rain, they have also been used throughout history for protection from the sun.

In Victorian times, a parasol was part of every woman's wardrobe and used whenever she went out in the sun. Because white skin was in fashion, women went to great lengths to protect their skin from sun exposure, wearing long sleeves and gloves as well.

Use of umbrellas and parasols for sun protection is also traditional in Asia. Paper parasols and umbrellas are still made in Asia in a variety of beautiful colors, patterns, and shapes, and can be ordered on the internet.

I'd like to see umbrellas come back into style!

Sun Protective Clothing

Modern technology has taken the concept of protective clothing into the new millennia by developing specific synthetic fabrics that block most UV rays. Clothing made from these fabrics is considered to be

- more reliable than sunscreen, as it does not fade or wear off during the day
- less expensive than sunscreen, as it can be reused many times once purchased
- cleaner than sunscreen—not sticky, oily, or toxic
- more effective than sunscreen, as it provides protection for both UVA and UVB rays

Sun protective clothing originated in Australia in the 1980s, when the epidemic of skin cancer there became a national concern. Though the general public was following the "Slip, Slop, Slap" advice to slip on a shirt, slop on sunscreen, and slap on a hat, researchers found that many people were wearing t-shirts for protection, not realizing that a cotton t-shirt is only SPF-10. The Anti-Cancer Society of Victoria

began researching materials that would effectively block the sun and developed the first clothing specifically designed for sun protection.

Some of the earliest and most effective fabrics marketed for sun protection were simply made of tightly woven, lightweight nylon or polyester. More recently, chemical sun blocks have been added to lightweight fabrics to offer a wider fabric range with good UV protection. These chemicals remain effective after many launderings.

I generally don't recommend synthetic fabrics, and I'm not sure about these "chemical sun blocks." It may be though, that some of the natural fiber clothing in your closet is already suitable to provide adequate protection.

When choosing fabrics for sun protection, the two most important features are tight construction and color.

While loose-weave fabrics are cooler, openings between the yarns allow UV radiation to pass through the fabric and reach the skin. Tightly woven or knit fabrics provide the best protection against the sun.

And while we are accustomed to wearing white and light-colored clothing in the summer to stay cool, dark colors provide the best protection against UV. Heat and visible light are reflected from these light colored fabrics, but UV radiation passes through to the skin. Darker colors, such as navy, black, dark greens and reds, block harmful UV rays.

So my loose-fitting, long sleeved, black cotton shirt and pants that I already have hanging in my closet would be my best choice.

But these sun protective fabrics do have a place. If you need to be in the sun and absolutely need protection, FDA approved fabrics are guaranteed to reduce UV radiation by 97% or more.

Find clothing made from these protective fabrics on the Internet by typing "sun protective clothing" into your favorite search engine.

SUNSCREENS

Sunscreens are promoted as essential for sun safety, but so far, they haven't solved the problem. In fact, the incidence of skin cancer has actually increased since they have been in use.

The common recommendation is that we should be using sunscreen all the time, whenever we go outdoors. This gives a false sense of safety. In fact, sunscreens were not designed to increase the amount of time users spend in the sun than they would otherwise, but rather to make the time spent in the sun safer. Studies have found that people using sunscreen are now spending more time in the sun, increasing their risk of skin cancer.

There also concern that regular use of even natural sunscreen can interfere with your skin's ability to produce vitamin D, a nutrient essential to all body functions. The *Journal of Clinical Endocrinologic Metabolism* reports that scientifically controlled studies of skin untreated with sunscreen versus skin treated with sunscreen (SPF-8) demonstrated a large difference in vitamin D production. The sunscreens skin showed NO change in vitamin D, while the untreated skin had increases of vitamin D of 1600 percent in their blood. Studies done by Micheal F. Holick PhD, MD of Boston University Medical Center show that sunscreens rated SPF-8 reduce vitamin D production by 97.5 percent and sunscreens rated SPF-15 reduce vitamin D production by 99.9 percent. So if you choose to wear sunscreen, for that period of time you are essentially shutting down your body's vitamin D production, pretty much completely.

It has been found that the greatest increase in skin cancers is in countries where chemical sunscreens have been heavily promoted. According to *The American Journal of Public Health*, the rise in cancer has been exceptionally high in Queensland, Australia, which now has more incidences of melanoma per capita than any other place on Earth.

And, according to the Centers for Disease Control (CDC) (<http://www.cdc.gov/ChooseYourCover/qanda.htm>), sunscreen alone is not even adequate for effective sun protection. They say, "it is important to complement sunscreen use with other sun protection options: cover up, wear a hat and sunglasses, and seek shade." So...why use sunscreen?

Between staying out of the sun and wearing protective clothing, you may not even need a sunscreen, but if you decide you do, choose the most natural sunscreen you can.

Sunscreen ingredients

There are two types of active ingredients in sunscreens: chemical and physical.

Chemical ingredients absorb UVA and UVB radiation. These are considered safe for most people. According to the FDA, in rare cases, they may cause skin reactions,

including acne, burning, blisters, dryness, itching, rash, redness, stinging, swelling, and tightening of the skin. Some sunscreens also contain alcohol, fragrances, and mineral oil.

WARNING

The FDA cautions parents not to apply sunscreen to babies until they are six months old

Titanium dioxide and zinc oxide reflect, scatter, and absorb both UVA and UVB rays. These ingredients typically do not produce allergic reactions and are used in many natural sunscreen products.

Here are the active ingredients currently approved by the FDA for use in sunscreens, and their sources:

Ingredient	Ray Protection		Source
	UVA	UVB	
Aminobenzoic acid (PABA)		Yes	
Avobenzene	Yes		petroleum
Cinoxate		Yes	cinnamon
Dioxybenzone	Some	Yes	petroleum
Homosalate		Yes	
Menthyl anthranilate	Some	Yes	
Octocrylene		Yes	
Octyl methoxycinnamate		Yes	cinnamon
Octyl salicylate		Yes	
Oxybenzone	Some	Yes	petroleum
Padimate O (Octyl dimethyl PABA)		Yes	
Phenlybenzimidazole		Yes	
Sulisobenzene		Yes	
Trolamine salicylate		Yes	
titanium dioxide	Some	Yes	mineral
zinc oxide	Yes	Yes	mineral

According to the Environmental Working Group website Skin Deep (<http://www.ewg.org/reports/skindeep2>), some of these ingredients have health concerns.

- **Homosalate** is a potential endocrine disruptor.
- **Octyl salicylate** can cause kidney and cardiovascular or blood toxicity.
- **Trolamine salicylate** can cause cardiovascular or blood toxicity.
- **Titanium dioxide** is thought to *possibly* cause cancer in humans, based on limited data.

- **Zinc oxide** is known to be an immune system toxin and a respiratory toxicant, and may present risks to human reproduction and development, based on limited data.

I don't feel enthusiastic about recommending any of these active ingredients. For most of them I could find very little information.

My conclusion after all the research I've done is that sunscreens may be doing more harm than good and are not really necessary to protect your skin from the sun.

SUNLESS TANNING LOTIONS

I've been asked about using sunless tanning lotions as an alternative to sun tanning to get that "healthy glow."

I can understand a desire to have a summer tan. Growing up in California, just as soon as it was warm enough, I would be out on my patio in my swimsuit with my suntan lotion—not sunscreen—suntan lotion to get my skin as dark as possible as fast as possible. I didn't know then that a suntan is a sign of skin damage.

I still think that a little tan looks healthy and nice in the summer, even if scientific facts prove otherwise. But I no longer sit out in the sun, attempting intentionally to damage my skin.

The only active ingredient approved by the FDA for use in sunless tanning products is dihydroxyacetone (DHA). DHA is a colorless sugar that interacts with the dead cells located in the upper layer of the skin. As the sugar interacts with the dead skin cells, a color change occurs. The effect is temporary, because as the dead cells naturally slough off, the color fades, disappearing within a week unless the lotion has been reapplied.

Is DHA safe to use? The Environmental Working Group's "Skin Deep" website (<http://www.ewg.org/reports/skindeep2/>) lists "0" health concerns. The MSDS sheet for this ingredient also lists no health effects from skin exposure beyond the possibility of mild irritation.

The Skin Cancer Foundation (<http://www.skincancer.org>) says, "[Using sunless tanning products is] a lot more healthful than a suntan because...getting a suntan breaks down the DNA in skin cells, but using self-tanners causes no such damage. At worst, sunless tanning products present a minimal risk of irritant or allergic reactions.

If you want to give your skin a darker tan color naturally without going out in the sun, try this concoction:

HOMEMADE NATURAL SUNLESS TANNING LOTION

1. Boil $\frac{3}{4}$ cup pure water and brew strong tea with 3 black-tea bags.
2. Put $\frac{1}{4}$ cup tea into a blender with $\frac{1}{4}$ cup lanolin and $\frac{1}{4}$ cup sesame oil.
3. Blend at low speed.
4. Add remaining tea steadily.
5. Spread sparingly on your skin (try a patch in a hidden spot first to test the color).

SUNGLASSES

Sunglasses have an interesting history.

The first tinted glasses were darkened with smoke, and first used in China in the 1400s by Chinese judges to conceal their eye expressions in court.

Sunglasses did not become popular until the twentieth century. In 1929, Sam Foster, founder of the Foster Grant company sold the first pair of sunglasses on the Boardwalk in Atlantic City, New Jersey. It didn't take long for sunglasses to become all the rage.

Then in the 1930s, the Army Air Corps commissioned glasses to protect the eyes of pilots from the dangers of high-altitude glare. Fliers were given the glasses at no charge, and in 1937, the public was able to purchase the glasses that "banned the sun's rays" as Ray-Ban aviator sunglasses.

But sunglasses still weren't popular until Foster Grant launched a clever advertising campaign in the 1960s. As fashion designers and celebrities promoted sunglasses, they became a popular fashion accessory.

Popular or not, sunglasses are very effective at blocking most or all of the UV rays. The darker the lens, the more UV rays are blocked.

Light tint protects your eyes against 70 percent UVB and 20 percent UVA.

Medium tint protects your eyes against 95 percent UVB and 60 percent UVA.

Dark tint protects your eyes against 99 percent UVB and 60 percent UVA.

Sunglass styles that wrap around or have additional side protectors that block sun from creeping in around the edges block UV rays even more completely.

And sunglasses may be necessary in some circumstances. Excessive UV exposure can cause loss of vision, cataracts, and cancer of the eye.

The key to wearing sunglasses is appropriate use.

For general good health, you want to make sure to spend some time outdoors in natural light *without* wearing sunglasses.

In *Light: Medicine of the Future*, Dr. Jacob Lieberman tells of cures using sun therapy. In times past, tuberculosis was one of the main diseases treated very effectively by sunshine. One doctor found, however, that the sun therapy did not work when the patients wore sunglasses.

As long as you are including time outdoors in safe natural light for your good health, I see no reason to not wear sunglasses when they are necessary and appropriate.

Necessary and appropriate circumstances are certainly under conditions where there is excessive UV exposure, such as in snow conditions, at the beach, and on days when there is a high UV Index. Also when they are necessary for safety reasons, such as to reduce glare while driving or flying.

But whenever you can, wear a hat, stay in the shade, and take other measures to allow your body the full benefit of natural light.

MY PERSONAL SAFE SUN STRATEGY

I live in Florida--the "Sunshine State"--where we have more than 300 days of sunshine each year. We are also at latitude 27N, which is only 27 degrees north of the equator, so that puts us in the zone known as the "subtropics". We are very near sea level. This is very different from growing up and living most of my life in the San Francisco Bay Area, which is at latitude 37N and has far fewer sunny days.

Moving here was a sun shock for me. I couldn't just walk around without being aware of the sun anymore. I had to figure out how to not get burned at the very least.

So here is my personal Safe Sun Strategy.

My skin type is 3. I can be out in the sun at least 15 or 20 minutes before my skin gets any color at all.

When I am exposed to the sun:

1. DAILY
On a daily basis, I spend most of my time indoors. My exposure is pretty limited to walking from my house to my car (less than one minute) and from my car to the building once I arrive at my destination.
2. POOL AND BEACH
My husband and I walk in our pool about 45 minutes each day. Occasionally we go walk on the beach or swim in the Gulf of Mexico.
3. GARDEN
I work in my garden for 30-45 minutes at a time.
4. IN THE CAR
Occasional exposure from riding in the car with the sunroof open.
5. FUN
Occasional exposure when out for the day shopping or sightseeing.

Where I live in Florida, the sun is very strong about six months out of the year. I haven't been following the UV Index (though I'm going to start now) but today (1 May 2006) it was 11+—the highest on the scale. In the winter the sun intensity is dramatically less.

My general strategy is: stay out of the midday sun! Whatever I can do at another time of day, I do at another time of day.

My DAILY strategy is to not be concerned about the brief exposures I have walking from my car to a building.

My POOL AND BEACH strategy is to go in the pool and go to the beach in the evening. My husband and I general end our work days around 5:00 or 6:00 and go

for a nice walk in the pool together before dinner. In the summertime, we often go down to the Gulf of Mexico (a 10-minute drive) after dinner and walk along the beach or play in the water (in the summer, the water is 97 degrees). The sun is very low in the sky, there's a nice breeze off the water, and we watch the sunset.

My GARDEN strategy is to work in the garden in the early morning or evening—usually the morning. It's the nicest time of day and gardening is a good thing to do before I get going with my work for the day.

My IN THE CAR strategy is to close the sunroof when the sun is directly overhead. (I do wear sunglasses in the car occasionally for glare or if I'm driving directly into the sunrise or sunset.)

My FUN strategy is to do indoor activities, such as go to a museum or shop at a mall, during the middle part of the day, and walk around outside in the morning and evening. If I really need to be outdoors in the sun at midday, I wear a visor or a hat to protect my eyes and face. I do this so infrequently, I'm not worried about covering up my arms or legs.

That's my total strategy! No sunscreen, no protective clothing, no sunglasses—and I haven't had a single sunburn since I moved to Florida.

RECOMMENDED READING

The UV Advantage

Michael F. Holick, PhD, MD and Mark Jenkins

A well documented book that tells in great detail why our bodies need sunlight, the facts about skin cancer and sunshine, and how to expose your body to the sun safely.

The Healing Sun: Sunlight and Health in the 21st Century

Richard Hobday

Why we should welcome sunlight into our lives for good health and how to do it.

Sunlight Could Save Your Life

Zane R. Kime, MD

This book appears to be out of print, but used copies are still available. Though published in 1980, the basic information on the relationship between sun and health is still relevant. This is the first book I read on the relationship between sun and health many years ago.

Health and Light: The Extraordinary Study That Shows How Light Affects Your Health

John N. Ott

The original book from 1973 that brought attention to our need for natural light for good health. Still in print.

Light, Radiation & You: How to Stay Healthy

John N. Ott

More on light and health, including a full chapter on how to incorporate natural light into your home and life.

Light: Medicine of the Future

Jacob Liberman, OD, PhD

How light contributes to health and can be used in the treatment of disease.