

Age Spots

DNA Health Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

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DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Personal information

NAME

Sample Client

SEX AT BIRTH

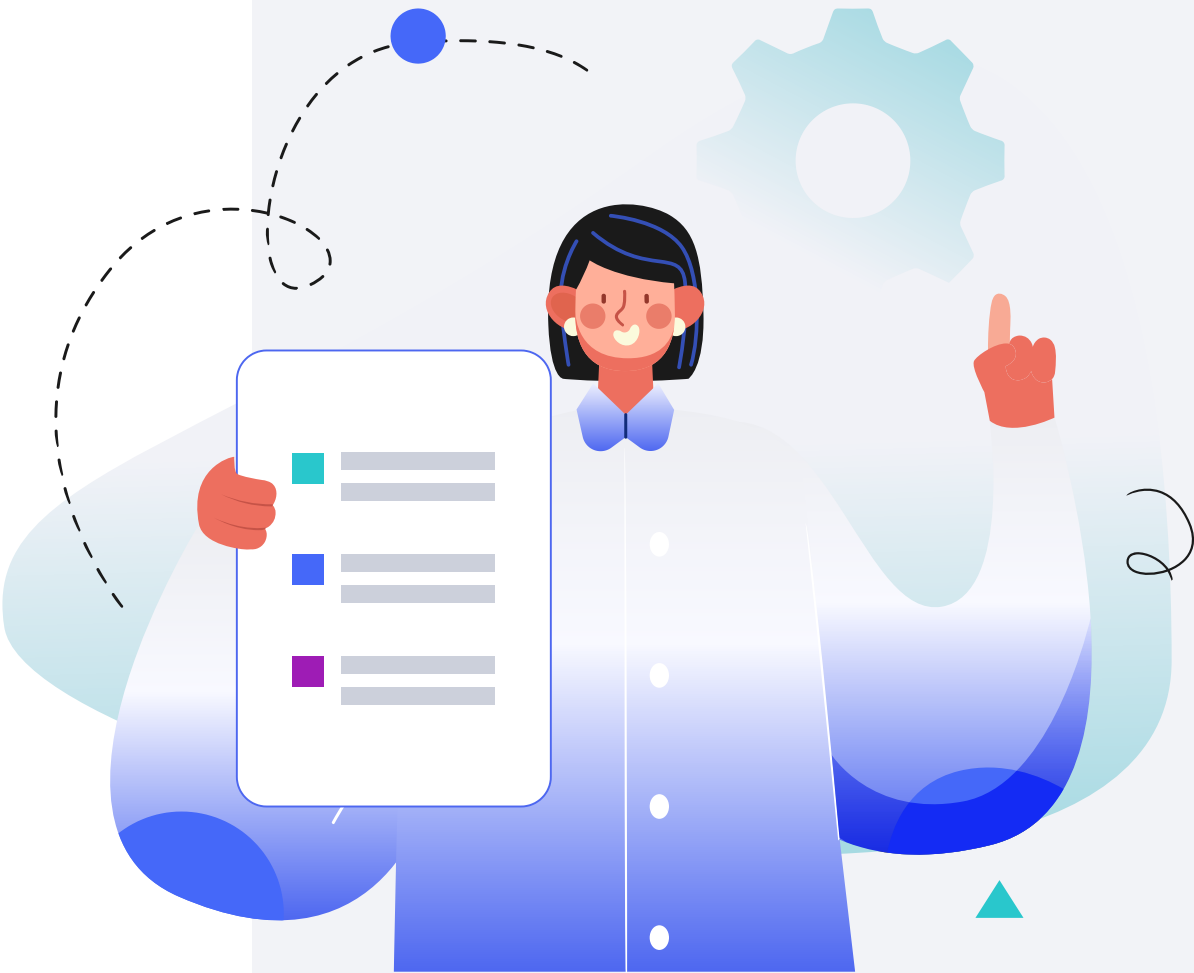
Male

HEIGHT

5ft 5" 165cm

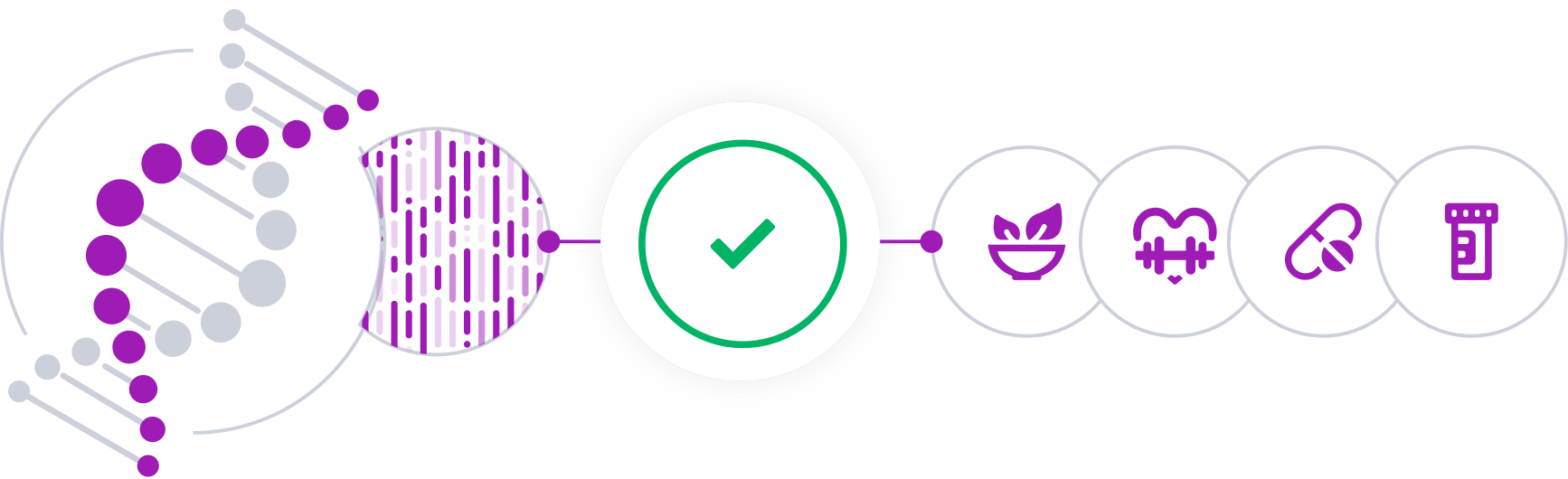
WEIGHT

137lb 62kg



How this works

Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.

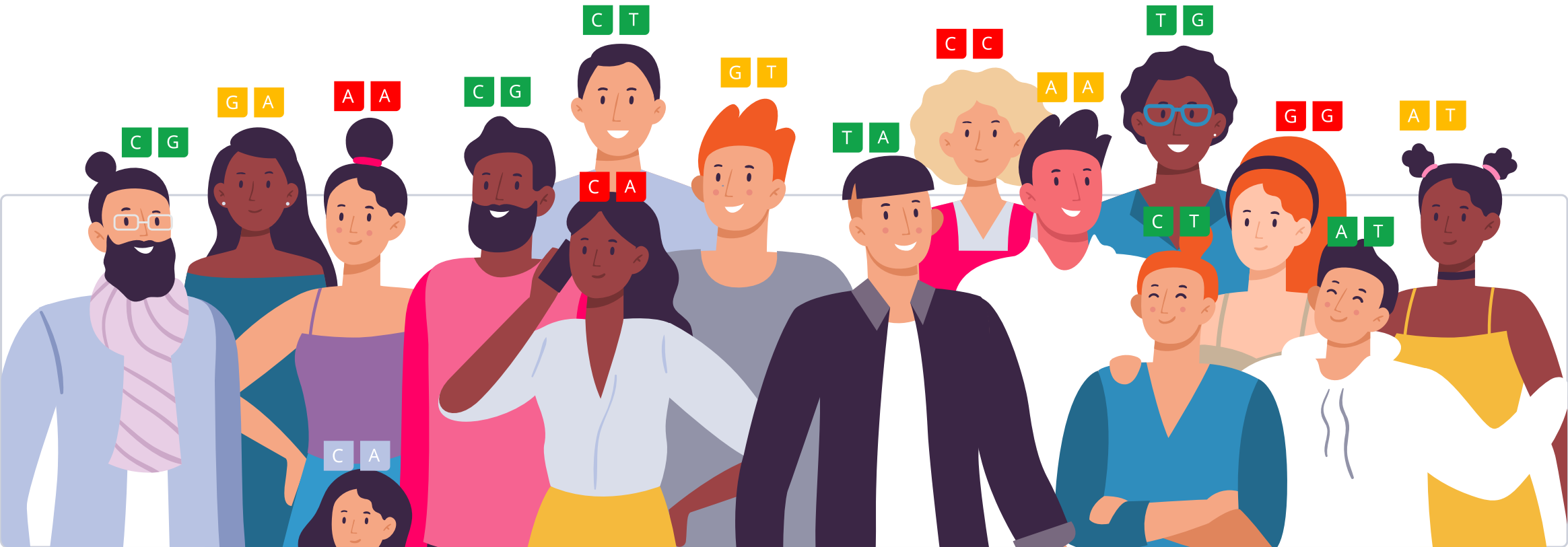


Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

In total, we analyze up to 83 million genetic variants.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

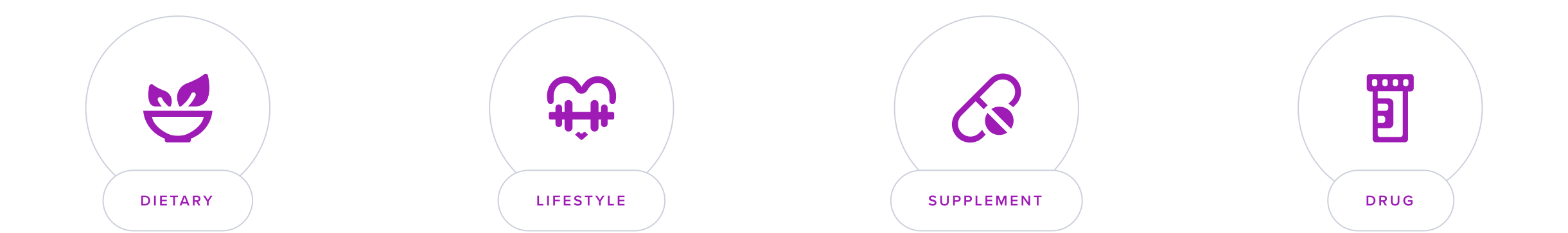
You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
-
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
-
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
-
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
-
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

Solar lentigines, **also known as age spots**, sun spots, or liver spots, are dark spots on the skin [\[R\]](#).

Age spots are harmless and range from a few millimeters to more than one centimeter in diameter. They are caused by increased production of melanin, the skin pigment [\[R\]](#), [\[R\]](#).

Age spots tend to appear more frequently on visible parts of the body, such as [\[R\]](#), [\[R\]](#):

- Face
- Neck
- Hands
- Forearms

They are usually a sign of *photoaging*—skin aging due to excessive exposure to UV radiation [\[R\]](#), [\[R\]](#).

Factors Influencing Age Spots

 PERSONALIZED TO GENES

Based on the gene variants we looked at, you likely have fewer age spots. However, keep in mind that your environment, age, and health condition may also contribute to age spots.

Solar lentigines, **also known as age spots**, sun spots, or liver spots, are dark, harmless spots on the skin. They are caused by increased production of melanin, the skin pigment. Age spots tend to appear more frequently on visible parts of the body, as they are usually a sign of *photoaging*—skin aging due to excessive exposure to UV radiation [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Genetics may influence age spots. Genes involved may contribute to the production of melanin, the skin pigment [\[R\]](#).

The main factor leading to age spots is excessive exposure to UV radiation. Hence, people who sunburn easily and those who have a history of sunburns are more likely to get age spots [\[R\]](#), [\[R\]](#).

Hence, experts recommend wearing sunscreen. **Make sure to find the right balance.** [Sunlight](#) or bright light during the day can benefit your body (by increasing vitamin D levels) and mind (by boosting mood) [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

As we age, the likelihood of age spots also increases. More than 90% of white people older than 50 years of age may have age spots [\[R\]](#), [\[R\]](#)

Diabetes may also increase the risk of age spots, especially in women [\[R\]](#).



FEWER

Predisposed to fewer age spots based on 3 genetic variants we looked at

1st

PERCENTILE



Your risk is greater than 1% of the population and lower than 99% of the population.

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
RAB11FIP2	rs61866017	TG
RAB11FIP2	rs35563099	TC
PPARGC1B	rs251468	TT

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You’ll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE	
1	Avoid Excess Sunlight Exposure	2	Light Therapy for Skin30 minutes
3	Topical Retinoids	4	Topical Niacinamide
5	Topical Coffee Extract	6	Pycnogenol100 mg
7	Rosemary and Citrus Flavonoids	8	Topical Lychee
9	Astaxanthin12 mg	10	Avoid Air Pollution
11	Salmon Egg Extract500 mg	12	Blood Orange Extract500 mg
13	Red Light Therapy20 minutes	14	Pomegranate Extract250 mg
15	Green Tea400 mg	16	Niacinamide (Vitamin B3)1000 mg
17	Intense Pulsed Light (IPL) Therapy30 minutes	18	Moisturize the Skin
19	Vitamin C2000 mg	20	Soy
21	Laser Therapy		

1



Avoid Excess Sunlight Exposure

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Limit direct sun exposure to early morning or late afternoon hours, ideally before 10 a.m. or after 4 p.m., when UV rays are less intense. Wear protective clothing, such as long-sleeved shirts, pants, and wide-brimmed hats, along with sunglasses that block UVA and UVB rays. Apply a broad-spectrum sunscreen with at least SPF 30 to all exposed skin, reapplying every two hours or immediately after swimming or sweating.

Description

Avoiding excessive sunlight exposure and practicing sun safety measures, such as wearing sunscreen and protective clothing, helps reduce the risk of skin damage, including sunburn and skin cancer. It supports long-term skin health and minimizes the harmful effects of UV radiation.

[Sunlight](#) or bright light during the day can benefit your body and mind. It may [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Boost your mood
- Boost your performance and energy
- Improve sleep quality

Experts recommend getting **at least 5-15 minutes of midday sun, 2-3 times per week**. People with darker skin and those living at high latitudes may need longer periods of sun exposure [\[R\]](#), [\[R\]](#).

However, **excessive sun exposure may lead to sunburn, skin aging, and skin cancer**, so make sure to find the right balance [\[R\]](#), [\[R\]](#).

How it helps

Excessive exposure to sunlight is a well-known risk factor for age spots and premature facial wrinkling [\[R\]](#), [\[R\]](#).

Good sun-protection practices recommended by experts include [\[R\]](#), [\[R\]](#):

- Using a broad-spectrum sunscreen with an SPF of 30 or more and applying it repeatedly, especially if swimming or sweating
- Wearing sun-protective clothing
- Avoiding sun exposure during peak UV times (between 11 AM and 3 PM in summer)
- Seeking shade whenever possible
- Avoiding the use of indoor tanning
- Consulting the UV index and taking precautions based on its predicted levels

UV radiation from sunlight may age the skin by causing oxidative damage [\[R\]](#).

2



Light Therapy for Skin

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Sit in front of a light therapy box that emits a bright light (without UV rays) for about 20 to 30 minutes daily, preferably in the morning. Make sure the light is indirectly entering your eyes, as direct exposure can be harmful. Consistently use light therapy daily over several weeks to notice improvements in skin conditions.

TYPICAL STARTING DOSE

30 minutes

Description

Light therapy, such as phototherapy or laser treatments, can be effective for various skin conditions like psoriasis and acne by reducing inflammation, promoting skin cell turnover, and improving overall skin appearance.

Light therapy involves shining different types of light on the skin. Doctors prescribe light therapy to help with certain skin conditions, including [R](#), [R](#), [R](#), [R](#):

- Psoriasis
- Eczema
- Acne
- Stretch marks

Different types of light can be used for skin, including [R](#), [R](#), [R](#):

- UV light
- [Blue light](#)
- [Red light](#)
- Laser therapy

How it helps

Applying intense pulsed light, near-infrared light, or laser therapy may decrease the melatonin content of age spots. The combination of all three treatments may yield the best results [R](#), [R](#).

Light therapy may help by killing the melanin-producing cells and removing the top layer of the skin [R](#).

Please note: *Light therapy may damage skin and increase signs of aging. Please consult your doctor before trying any light therapy* [R](#), [R](#).

3



Topical Retinoids

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Apply a pea-sized amount of topical retinoid to clean, dry skin once every evening before moisturizing. Start with applications 2-3 times a week, gradually increasing to nightly use as your skin tolerates it.

Description

Retinoids are a class of vitamin A derivatives used topically for their ability to address various skin concerns, including acne, fine lines, and hyperpigmentation. They work by promoting cell turnover and collagen synthesis.

Retinoids are compounds related to [vitamin A](#). They include [\[R\]](#):

- Vitamin A (retinol)
- Natural vitamin A derivatives (retinoic acid, retinaldehyde, retinyl esters)
- Synthetic derivatives (tretinoin, isotretinoin, etretinate, tazarotene)

Retinoids control the growth of the skin and blood vessels. People apply topical retinoids to improve skin conditions such as [\[R\]](#):

- **Wrinkles**
- Acne
- Psoriasis
- Eczema
- Skin cancers

Please note: Topical synthetic retinoids are prescription drugs and should only be used if prescribed by a doctor. They can have significant side effects. Natural retinoids are much safer and available in different OTC cosmetic products.

How it helps

Topical tretinoin cream (0.1% applied for 10 months) may improve age spots and other signs of skin aging [\[R\]](#), [\[R\]](#).

It is unclear if natural retinoids such as retinol, retinaldehyde, and retinyl esters help with age spots [\[R\]](#).

Topical retinoids may help by inhibiting melanin production and promoting skin renewal [\[R\]](#), [\[R\]](#).

Please note: *Topical retinoids may cause skin dryness, burning, itching, and swelling at the site of application. It is recommended to start with the lowest dose and frequency of application, and gradually increase them as tolerance develops. Because retinoids increase skin sensitivity to sunlight, people on retinoid therapy are recommended to limit sun exposure. Pregnant women shouldn't use topical retinoids because they may increase the risk of malformations [\[R\]](#).*

4



Topical Niacinamide

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Apply a topical niacinamide product, containing 2-5% niacinamide, to clean, dry skin once or twice daily. For best results, use consistently as part of your morning and/or evening skincare routine.

Description

Niacinamide, a form of vitamin B3, is used topically for its ability to improve skin texture, reduce redness, and minimize the appearance of pores. It is a versatile skincare ingredient suitable for various skin types and conditions.

[Niacinamide](#) is a form of [vitamin B3](#) (niacin). Vitamin B3 supports your nerves, skin, gut, and more [\[R\]](#).

Niacinamide can be applied to the skin to potentially help with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Acne
- Wrinkles
- Dark patches

How it helps

Topical creams with niacinamide (3-5% applied for 10-12 weeks) may reduce age spots and other signs of skin aging [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Niacinamide may help by improving the barrier function of the skin and protecting it from sunlight damage [\[R\]](#), [\[R\]](#).

5

Topical Coffee Extract

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Apply a thin layer of coffee extract cream or gel directly onto the clean, affected area of the skin. Use once or twice daily, depending on the product's instructions or a healthcare provider's advice. Continue this routine for a minimum of six to eight weeks to observe potential benefits.

Description

Coffee extract is derived from coffee beans and is often used in skincare products for its antioxidant properties, which can help protect the skin from free radical damage and reduce the appearance of fine lines and wrinkles.

People drink coffee for an energy and mood boost. [Caffeine](#) is the main ingredient responsible for these effects [\[R\]](#) [\[R\]](#).

Caffeine may also help [\[R\]](#) [\[R\]](#) [\[R\]](#):

- Support heart health
- Improve mood
- Maintain healthy blood sugar
- Improve skin health

How it helps

Applying coffee pulp serum (3 mL/day for 4 weeks) on the skin may improve age spots and other signs of skin aging. Drinking it may be similarly effective [\[R\]](#).

Topical formulations with the extracts of coffee seeds and resurrection plant (*Myrothamnus flabellifolia*) leaves applied for 8 weeks may also help with age spots [\[R\]](#).

Coffee extract may help by reducing oxidative damage to the skin [\[R\]](#).

6



Pycnogenol

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100 mg of pycnogenol supplement daily. This can be taken in a single dose or divided into two doses of 50 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE

100 mg

Description

Pycnogenol (pine bark extract) is derived from the bark of the maritime pine (Pinus pinaster). It has been used in traditional n European folk medicine for centuries, and more recently as a supplement. The extract contains a group of bioactive compounds known as proanthocyanidins, which may be beneficial in supporting cardiovascular health, promoting skin health, and aiding in the management of various conditions related to inflammation and oxidative stress.

Pycnogenol comes from the bark of pine trees that grow in the Mediterranean [\[R\]](#), [\[R\]](#).

It may improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Athletic performance
- Seasonal allergies
- Cognitive function
- Joint health
- Varicose veins

How it helps

Oral pycnogenol (40-100 mg/day for 12 weeks) may improve age spots and other signs of skin aging [\[R\]](#).

Pycnogenol is rich in polyphenols that may reduce oxidative damage to the skin and favor its renewal [\[R\]](#).

7



Rosemary and Citrus Flavonoids

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing rosemary and citrus flavonoids daily. The exact dosage may vary, but a common recommendation is to aim for around 500mg of citrus flavonoids and 100-150mg of rosemary extract, preferably with meals to enhance absorption. This practice should be continued consistently for at least 8 weeks to observe potential benefits.

Description

Rosemary and citrus flavonoids refer to a combination of rosemary extract and flavonoid compounds often found in dietary supplements. They may offer antioxidant and anti-inflammatory benefits, potentially supporting cardiovascular health and cognitive function.

How it helps

Rosemary and citrus flavonoids, acting as potent antioxidants, help combat oxidative stress, known to play a significant part in the formation of age spots. They can stop the overproduction of melanin, the pigment that gives age spots their dark color, resulting in diminished spots and improved skin tone.

A [small study with 10 volunteers](#) found that a combination of citrus flavonoids and rosemary polyphenols and diterpenes ((NutroxSun, 250 mg/day for 12 weeks) may be considered as an ingredient for oral photoprotection because it **increased the minimal erythema dose after 8 weeks (by 37%)** but especially when extended for 12 weeks (**by 56%**). It may reduce some molecular events related to skin photodamage, such as intracellular ROS generation and DNA damage [\[R\]](#).

8



Topical Lychee

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Apply lychee extract topically to the affected area of the skin. Use a product with lychee extract once or twice daily for at least 8 to 12 weeks to see noticeable improvements in skin hydration and elasticity.

Description

Lychee extract, obtained from the lychee fruit, is a topical ingredient rich in antioxidants, particularly vitamin C. It is used to support skin health, combat oxidative stress, and promote a more youthful complexion.

How it helps

Topical lychee, rich in antioxidants and vitamin C, helps lighten age spots by reducing melanin production, known to darken skin. Additionally, its anti-inflammatory properties aid in rejuvenating the skin, resulting in a more youthful appearance.

In a [randomized-single blind placebo control clinical with 29 volunteers](#), Mexameter® MX18, Cutometer® MPA 580 and Visioscan® VC 98 (0.05 and 0.1% litchi serum) applied in the inner forearm (for 112 days) helped with hyperpigmentation. It **increased skin lightening, skin elasticity, and wrinkles**, especially with the 0.1% concentration [\[R\]](#).

9



Astaxanthin

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take an astaxanthin supplement daily, with a typical dosage ranging from 4 to 12 mg. It is best taken with a fat-containing meal to enhance absorption.

TYPICAL STARTING DOSE

12 mg

Description

Astaxanthin is a powerful antioxidant found in certain microalgae and seafood. It is known for its potential benefits in reducing oxidative stress, supporting skin health, and promoting eye health.

[Astaxanthin](#) is a naturally-occurring orange-red pigment carotenoid found in algae, shrimp, lobster, crab, and salmon [\[R\]](#). As an antioxidant, astaxanthin is **10 times stronger than zeaxanthin, lutein and [beta-carotene](#)**, and **100 times stronger than [vitamin E](#)** [\[R\]](#). People take astaxanthin to:

- Support skin health [\[R, R\]](#)
- Reduce exercise fatigue [\[R, R\]](#)
- Prevent heart disease [\[R, R, R\]](#)

How it helps

A systematic review of clinical studies on astaxanthin supplementation found that it showed protective effects against UV-induced skin damage [\[R\]](#).

10

Avoid Air Pollution

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Stay indoors on days when air quality indexes (AQI) indicate high pollution levels, which are often reported by weather services or government environmental agencies. **Install air purifiers** in your home, especially in bedrooms, to reduce indoor pollutants. Limit outdoor exercise when air pollution warnings are issued, opting for indoor activities instead.

Description

Avoiding air pollution by reducing exposure to pollutants in the environment is essential for respiratory and overall health. It can help lower the risk of respiratory diseases, cardiovascular conditions, and other health issues associated with poor air quality.

While city life is convenient in a lot of ways, it comes with some health hazards. Cars, factories, and other sources increase air [pollution](#) ^[R].

Air pollution plays a role in [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Lung disease
- Heart disease
- Diabetes
- Asthma
- Skin conditions

How it helps

Exposure to fine particulate matter from air pollution may increase the risk of age spots [\[R\]](#).

Air pollution may cause oxidative stress and inflammation in the skin. Pollutants may also increase the sensitivity of the skin to UV radiation [\[R\]](#).

11



Salmon Egg Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a salmon egg extract supplement daily, following the dosage instructions on the product label, which typically range from 500 to 2000 mg. Continue this regimen for at least 3 to 6 months to observe potential health benefits.

TYPICAL STARTING DOSE

500 mg

Description

Salmon egg extract is derived from the eggs of salmon and is often used in dietary supplements for its potential health benefits like heart health, due to being a source of essential omega-3 fatty acids and phospholipids, vitamins, and minerals that support overall well-being.

How it helps

A double-blinded, randomized clinical trial of 66 healthy female volunteers found that salmon egg extract (1% and 5% in vehicle formulation for 56 days) improved wrinkles, pigmentation, redness, brightness, and hydration and led to global improvement of facial skin in a dose-dependent and time-dependent manner [\[R\]](#).

Salmon egg extract is high in antioxidants that can help reduce hyperpigmentation, such as age spots. It aids in the removal of dead skin cells and rejuvenation of the skin, potentially lightening these spots.

12



Blood Orange Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500 mg of blood orange extract supplement daily with water, ideally in the morning with breakfast. Continue this regimen for at least 8 to 12 weeks to see potential benefits related to cardiovascular health and antioxidant effects.

TYPICAL STARTING DOSE

500 mg

Description

Blood orange extract is rich in antioxidants and vitamin C, potentially supporting immune health and providing protection against oxidative stress.

How it helps

Blood orange extract is rich in antioxidants like Vitamin C, which can help brighten the skin and promote a more even skin tone. When consumed or applied topically, it can help lighten age spots by decreasing melanin production, reducing their appearance.

A 56-day study involving 110 Asian and Caucasian subjects showed that a daily intake of 100 mg of red orange extract improved UV protection, increased skin antioxidants, moisture, elasticity, and radiance while reducing melanin intensity, wrinkle depth, and TEWL [\[R\]](#).

13



Red Light Therapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Position yourself or the specific area of your body that needs treatment about 6 inches away from a red light therapy device. Use the device for 10 to 20 minutes daily. It is recommended to continue this daily regimen for at least several weeks to notice benefits.

TYPICAL STARTING DOSE

20 minutes

Description

Red light therapy involves exposure to low-level red or near-infrared light, which may promote skin rejuvenation, reduce inflammation, and improve circulation when used for therapeutic purposes in skin care and wellness treatments.

How it helps

A trial of 13 middle-aged participants with wrinkles or fine lines in the periorbital and nasolabial region showed that LED therapy with red light is **effective against sunspots** [\[R\]](#).

14



Pomegranate Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250 to 500 mg of pomegranate extract once daily, preferably with a meal to enhance absorption. This should be continued consistently for at least 4 weeks to observe potential health benefits.

TYPICAL STARTING DOSE

250 mg

Description

Pomegranate extract is derived from the fruit of the pomegranate tree, a plant that has been used traditionally for thousands of years, from the Mediterranean to Asia. Pomegranate extract is often used today in supplements due to its high levels of antioxidants like punicalagins and anthocyanins, which may support heart health and reduce inflammation.

[Pomegranates](#) are red fruits that contain seeds covered by edible sweet coats. They are rich in antioxidants [\[R\]](#), [\[R\]](#).

Pomegranate may reduce inflammation and support heart health. People use pomegranate seed oil and peel in cosmetics and traditional medicine [\[R\]](#), [\[R\]](#).

How it helps

Drinking fermented pomegranate extract (50 mL/day for 8 weeks) may improve spots and other signs of skin aging [\[R\]](#).

Pomegranate may help by reducing oxidative damage to the skin [\[R\]](#).

15



Green Tea

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Consume 400 mg of green tea extract daily. This can be taken in the form of capsules or tablets available that specify the amount of green tea extract. Ensure the supplement is taken according to the product's specific instructions, usually once a day with water.

TYPICAL STARTING DOSE

400 mg

Description

Tea is a beverage made by steeping the leaves of the *Camellia sinensis* plant in hot water. It comes in various types, including black, green, white, and herbal teas, and is known for its diverse flavors and potential health benefits due to antioxidants and other bioactive compounds.

[Green](#) and black tea are made from the same plant (*Camellia sinensis*). This plant is processed in different ways to make each type of tea [\[R, R\]](#).

Tea contains antioxidants called **flavonoids**, which may help prevent [\[R, R, R, R\]](#):

- Heart disease
- Cancer
- Diabetes

How it helps

Green tea is rich in polyphenols, which have anti-inflammatory and antioxidant properties. These can protect the skin from ultraviolet radiation and reduce the chance of developing hyperpigmentation.

16



Niacinamide (Vitamin B3)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 500 mg of niacinamide (vitamin B3) orally, twice daily with a glass of water, preferably with meals to avoid stomach upset. This supplementation can be continued long-term for maintaining overall skin health and supporting metabolic functions.

TYPICAL STARTING DOSE
1000 mg

Description

Niacinamide, also known as vitamin B3, is a water-soluble vitamin that plays a crucial role in skin health and may help reduce inflammation, improve skin texture, and alleviate symptoms of certain skin conditions when applied topically.

[Niacinamide](#) is one of two forms of [vitamin B3](#). Vitamin B3 supports your nervous system, skin, gut, and more [\[R\]](#).

Vitamin B3 deficiency is called pellagra. It may cause diarrhea, dermatitis, and dementia. Niacinamide may help with pellagra because the body converts it into vitamin B3. Niacinamide may also help with [\[R\]](#):

- Acne [\[R\]](#)
- Diabetes [\[R\]](#)
- Osteoarthritis [\[R\]](#)

How it helps

Niacinamide can improve skin texture and reduce the appearance of age spots by inhibiting melanosome transfer from melanocytes to keratinocytes.

17



Intense Pulsed Light (IPL) Therapy

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Book an appointment with a dermatologist or a licensed practitioner experienced in intense pulsed light (IPL) therapy. The treatment usually requires multiple sessions, typically 3 to 6, spaced about one month apart to allow the skin to heal properly. Each session may last about 20 to 30 minutes, depending on the area being treated.

TYPICAL STARTING DOSE

30 minutes

Description

Intense pulsed light therapy is a non-invasive cosmetic procedure used to improve skin texture and reduce the appearance of various skin issues, such as sun damage and hyperpigmentation. It can enhance skin's appearance and boost self-confidence.

How it helps

Intense Pulsed Light (IPL) Therapy is beneficial for age spots as it targets pigment-producing parts in your skin. As the melanin absorbs this light energy, it breaks up, clearing or fading the age spots.

18



Moisturize the Skin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Apply a moisturizer to your skin within a few minutes after bathing or showering once daily. For dry skin conditions, moisturizing twice daily, once in the morning and once at night before bed, may be beneficial. Choose a moisturizer suited for your skin type; for sensitive skin, opt for fragrance-free options.

Description

Moisturizing the skin involves applying skincare products to maintain skin hydration, prevent dryness, and support a healthy skin barrier, which can help alleviate skin conditions like dryness, itching, and flakiness.

A water imbalance in the skin can make it dry and more susceptible to irritation [\[R\]](#).

Moisturizers help the skin retain water. In doing so, they may strengthen the skin barrier [\[R\]](#).

There are many types of moisturizing products, including [\[R\]](#):

- Gels
- Lotions
- Creams
- Ointments

These products differ in their water and oil content. Ointments contain the most oil. Lotions and gels contain more water. Creams have a bit of both [\[R\]](#).

It might take some trial and error to find products that work best for your skin type [\[R\]](#).

People with skin conditions like eczema may benefit more from using moisturizers with a lot of oil. These include ointments and creams [\[R\]](#), [\[R\]](#).

How it helps

Keeping the skin moisturized can improve skin texture and may indirectly help reduce the visibility of age spots.

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Vitamin C

IMPACT

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EVIDENCE

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How to implement

Take 500-2000 mg of vitamin C supplement daily. It can be taken at any time of the day, with or without food, according to personal preference or tolerance.

TYPICAL STARTING DOSE

2000 mg

Description

[Vitamin C](#) is an essential nutrient. This means that our bodies can’t produce it on their own, so we have to get it from food or supplements [\[R\]](#).

Foods rich in Vitamin C include: [\[R\]](#)

- Citrus Fruits
- Peppers
- Brussel sprouts
- Kiwi
- Broccoli
- Tomato
- Cantaloupe
- Cauliflower
- Spinach

Vitamin C has antioxidant properties. It supports immunity, heart health, and wound healing [\[R\]](#), [\[R\]](#).

Vitamin C deficiency is called *scurvy*. In the past, many sailors suffered from it [\[R\]](#).

How it helps

Vitamin C can contribute to skin health by promoting collagen production and providing photoprotection, potentially reducing the visibility of age spots.

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Soy

IMPACT

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EVIDENCE

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How to implement

Incorporate soy-based products such as tofu, soy milk, and edamame into your daily diet. Aim for at least one serving per day, equivalent to about a cup of soy milk, a half-cup of cooked soybeans, or a 3-ounce piece of tofu.

Description

Soy is a legume native to East Asia, and its health benefits include being a source of plant-based protein, fiber, and various vitamins and minerals. It is known for its potential to support heart health, reduce cholesterol levels, and provide essential nutrients in vegetarian and vegan diets.

Soy is a common food in many cuisines around the world, especially Asian cuisines [\[R\]](#).

It’s a great source of [\[R\]](#), [\[R\]](#):

- Plant-based protein
- Fiber
- Omega-3 fats
- Antioxidants (isoflavones)

Soy-based foods include [\[R\]](#):

- Soy beverages
- Tofu
- Tempeh
- Edamame
- Miso
- Natto

Soy protein and soy isoflavones are also available as supplements.

How it helps

Soy contains isoflavones, plant compounds that can mimic estrogen in the body. They may have a skin-lightening effect which could potentially help in reducing the appearance of age spots.

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Laser Therapy

IMPACT

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EVIDENCE

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How to implement

Schedule laser therapy sessions with a qualified healthcare provider, typically once or twice a week for a period of 4 to 8 weeks, depending on the condition being treated and the specific type of laser therapy used.

Description

Laser therapy is a non-invasive medical treatment that uses focused light to stimulate tissue repair, reduce pain and inflammation, and promote wound healing.

How it helps

Laser therapy for age spots works by emitting light that is absorbed by the skin. This light destroys the melanin that creates dark spots, thus reducing their appearance.