

How Our Body Makes Vitamin D from the Sun (and Other Places Too!)

By Robert Ferguson

Have you ever played outside in the sunshine and felt really good? That's not just because it's fun—your body is also doing something amazing. It's making something called **vitamin D**, which helps keep you strong, full of energy, and healthy!

What is Vitamin D?

Vitamin D is something your body needs to:

- Keep your **bones strong**
- Help your **immune system** fight off sickness
- Give you more **energy**
- Help your **muscles** work well
- Improve your **mood**
- Reduce **inflammation** in your body
- Support your **heart** and **blood pressure**

You can get vitamin D in **three ways**:

1. **From the Sun**
2. **From the Food You Eat**
3. **From Supplements (Vitamins)**

Let's explore how your body makes it and why it's so important to have enough.

How Does Your Body Make Vitamin D from the Sun?

1. **Sunshine Hits Your Skin**
When you go outside and the **sun shines on your skin**, special rays from the sun called **UVB rays** touch you. These rays are invisible, but they start something amazing.
2. **A Special Fat in Your Skin Helps Out**
Inside your skin, there's a special fat called **7-dehydrocholesterol**. When UVB rays hit this fat, it changes into **vitamin D3**!
3. **Your Liver and Kidneys Get to Work**
The vitamin D3 made in your skin isn't ready to help your body just yet. It travels through your **blood**, goes to your **liver**, then your **kidneys**, where it becomes the active form your body can use.

4. Your Body Uses Vitamin D

Now your body has the vitamin D it needs! It helps your **bones**, supports your **immune system**, helps your **muscles**, reduces **pain**, boosts your **mood**, and protects your **heart**.

Darker Skin and Vitamin D: What's the Difference?

People with darker skin have more **melanin**, which gives skin its color. **Melanin acts like a natural sunscreen**—it blocks more of the sun's UVB rays.

- Everyone has the same amount of **7-dehydrocholesterol** in their skin.
- But **more melanin = less UVB rays reaching the skin**, so it's harder for vitamin D to be made.
- This means people with darker skin may need **more time in the sun** or more vitamin D from food or supplements to stay healthy.

What About Black People Living in Africa?

You might wonder: if darker skin makes it harder to make vitamin D, do Black people in Africa have low levels too?

Here's the answer: **Most Black people in Africa do not have low vitamin D levels**, and here's why:

- **They get more sun!**
Many parts of Africa are close to the **equator**, where the sun is **strong all year long**. People there are outdoors more often and get **lots of sun exposure**. Even with dark skin, their bodies can make plenty of vitamin D.
- **Lifestyle differences:**
In Africa, people often spend more time **outside**, wear **lighter clothing**, and don't use sunscreen as much. These habits allow their skin to **soak up more sunlight**, helping them keep healthy vitamin D levels.
- **In contrast**, Black people living in places like the **United States, Canada, or Europe** often get **less sun** because of indoor work, colder weather, and sunscreen use. This can lead to **low vitamin D**.

Sunscreen and Vitamin D:

- **Sunscreen** is important for protecting your skin from **sunburn** and **skin cancer**.
- But, when you wear **a lot of sunscreens**, it **blocks UVB rays**, which your body needs to make vitamin D.
- Using sunscreen all the time, especially **high SPF**, can make it **harder** for your body to produce vitamin D.

Tip: It's okay to get a little sun on your skin each day without sunscreen (about 15-30 minutes), then put on sunscreen if you stay out longer.

Other Ways to Get Vitamin D

If you can't get enough sunlight, especially in winter or if you stay indoors, you can get vitamin D from:

- **Food** like:
 - Fatty fish (salmon, tuna, mackerel)
 - Eggs
 - Fortified milk, cereal, and orange juice (this means vitamin D is added)
- **Supplements:**
 - These are vitamin pills or drops, often **vitamin D3**, which help you get enough.

Why Do People Take Vitamin D with Vitamin K?

Vitamin D helps your body **absorb calcium**, which makes your **bones strong**. But vitamin K helps make sure the calcium goes to the **right places**, like your bones, and not to places it shouldn't (like your heart or blood vessels).

- **Vitamin D:** Brings calcium into your body.
- **Vitamin K:** Sends calcium to your bones.

Many people take vitamin D **with** vitamin K for extra bone and heart health, but **taking vitamin D alone is still very helpful!**

Why It's Important to Have Enough Vitamin D

Vitamin D isn't just for your bones—it helps your **whole body**. **Low vitamin D** can make you feel tired, sick, and achy, but it's also linked to **serious health problems** if not addressed.

Common Symptoms of Low Vitamin D:

- **Feeling tired or low on energy**
- **Getting sick more often**
- **Muscle aches or weakness**
- **Feeling sad or moody**
- **Trouble thinking clearly ("brain fog")**
- **Back pain or body aches**
- **Hair thinning or loss**

Health Risks Linked to Low Vitamin D:

- **Heart disease** – Low vitamin D is linked to higher risk of heart problems.
- **High blood pressure** – Vitamin D helps keep blood vessels healthy.
- **Depression** – Vitamin D supports brain health and mood balance.
- **Type 2 diabetes** – Low levels may affect how your body handles sugar.
- **Weaker immune system** – Making you more likely to catch colds or flu.

By bringing vitamin D levels back to healthy ranges, people not only feel better but may **lower their risk** for these serious health issues.

Real Life Example: My Client's Story

I recently had a client who was feeling tired, achy, and just not like herself. After testing her Vitamin D levels, we discovered they were low. So, we made a couple of simple adjustments to her nutrition, and I recommended a Vitamin D3 supplement that costs just \$17 a month—and wow, what a difference it made!

To her surprise, she learned that when people bring their Vitamin D levels back up, they often feel:

- More energy
- Stronger muscles
- Happier moods
- Fewer colds
- Clearer thinking
- Less pain in their back, joints, and muscles

It's not just about bones—it's about **feeling better every single day!**

If you'd like the link to the Vitamin D3 I'm sharing with my clients, email me at robert@dietfreelife.com and I'll send it your way! Or, contact the person who shared this article with you.

How Do You Know If You Have Enough Vitamin D?

This is where **Test-Based Nutrition** helps. Instead of guessing if your vitamin D levels are low, you can **test** your blood to find out.

I offer an **at-home vitamin D test**—easy to do, with just a small blood sample. You'll know exactly what your levels are.

Vitamin D Blood Level Guide (25-hydroxyvitamin D)

Vitamin D Level	Status
Less than 20 ng/mL (50 nmol/L)	Deficient (Too Low)
20 – 29 ng/mL (50–75 nmol/L)	Insufficient (Still Low)
30 – 50 ng/mL (75–125 nmol/L)	Sufficient (Healthy Range)
Above 50 ng/mL (125 nmol/L)	Optimal for many people
Above 100 ng/mL (250 nmol/L)	Too High (Potential Risk)

Can Too Much Linoleic Acid Affect Vitamin D?

Linoleic acid (LA) is a type of fat called **omega-6**, found in many vegetable oils like soybean, corn, and sunflower oil. Some research shows that when people eat **a lot of linoleic acid**, it can cause **damage to fats in the skin**, including **7-dehydrocholesterol**.

This damage might make it **harder** for the body to turn sunlight into vitamin D3. Also, too much linoleic acid can cause **inflammation**, which may make it harder for your body to use vitamin D properly.

What Can Help?

- Eat less food made with **seed oils** (like chips, fried foods, processed snacks).
- Eat more healthy fats, like **omega-3s** from fish, flaxseeds, or supplements.
- Balance your fats to help your body make and use vitamin D better!

Did You Know?

- Over **1 billion people** worldwide have low vitamin D.
- In the U.S., about **41% of adults** are **deficient**.
- **82% of Black people** and **69% of Hispanic people** in the U.S. have **low vitamin D** levels.

Because darker skin blocks more sunlight, it's important to **test** and see if you're getting enough!

Conclusion

Vitamin D doesn't just help your bones—it helps your **heart, mind, mood**, and your **whole body** feel good. If you're tired, achy, or just not feeling your best, it could be from **low vitamin D**. And with **Test-Based Nutrition**, you don't have to guess. You can **test** and fix the problem—feel better fast, and lower your risk for heart disease, high blood pressure, depression, and more.

Also, **watching how much linoleic acid** you eat might help your body make vitamin D better, especially if you're also low.

Want to test your vitamin D levels at home?

Email me at robert@dietfreelife.com to get started! Or, contact the person who shared this article with you.

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