# **Cellular Health Starts with Red Blood Cell Membranes**

By Robert Ferguson

#### Robert's Note

If you're someone who truly wants to help others improve their health — whether you're promoting peptides, exercise, vitamins, or minerals — it's important to understand this:

# You cannot fully improve energy, metabolism, brain function, or overall results if you're not addressing cellular health.

One of the most powerful and overlooked aspects of cellular health is the **red blood cell membrane**. If you're recommending any kind of supplement or wellness plan — but not helping people support the structure and function of their cells — you're skipping a critical step.

In short: if you want people to truly get results, start with **cellular health** — and make sure **red blood cell membrane fluidity** is part of the conversation. Once you understand this, it's your responsibility to include it. And if you don't... well, you're not giving people the full picture.

Thank you for taking the time to read this article and deepen your understanding of what **cellular health** truly means. The more you know, the better you can help others live healthier, more energetic lives — from the inside out.

If you often feel tired, foggy, or low on energy — or if you simply want more energy, better memory, and improved overall health — the problem (and the solution) often begins with something you've probably never heard of – the membrane of your red blood cells.

We all have **trillions of red blood cells** moving through our bodies every second. Each one is surrounded by a thin outer layer called the **membrane** — and this membrane can be either **healthy (soft and flexible)** or **unhealthy (stiff and rigid)**.

When these membranes become too stiff, red blood cells struggle to do their job. **Needed nutrients** can't get into the cells, they can't carry oxygen as effectively, and they have a hard time making enough of something called ATP (Adenosine Triphosphate) — the fuel your body runs on.

Your red blood cells are like tiny delivery trucks, and one of their most important jobs is to carry oxygen to every part of your body. But if their outer layer — the membrane — becomes stiff, it's like trying to drive a truck with flat tires. The deliveries slow down, and your body doesn't get what it needs. The result? You may feel tired, mentally foggy, have poor circulation, become insulin resistant, and even start gaining weight.

Let's take a closer look at **cellular health**, what the red blood cell membrane does, and how you can help keep it healthy.

#### What Is Cellular Health?

**Cellular health** is a way of measuring how well the cells in your body are working. When your cells are healthy, they can:

- Make energy (ATP) efficiently
- Communicate with other cells
- Take in nutrients and get rid of waste
- Repair themselves and make new healthy cells
- Maintain a soft, flexible outer membrane

When cellular health is strong, you have **more energy**, a **stronger immune system**, **better brain focus**, and a **lower risk of diseases**. You can think of cellular health like the **foundation of your body** — if your cells aren't working right, your organs, tissues, and systems can't work right either.

### Why the Red Blood Cell Membrane Matters

Your red blood cells are shaped kind of like squishy little donuts. The **membrane** is the thin outer layer that wraps around each one. It helps the cell hold its shape, move through your blood vessels, and take in oxygen, water, and glucose (sugar) from your bloodstream.

This membrane also helps the red blood cell make **ATP (energy)** and get rid of waste. But it only works well when it's **fluid and flexible**.

#### What Happens When the Membrane Is Rigid?

- A **rigid membrane** is stiff and hard to bend. This makes it tough for red blood cells to move through small spaces, like tiny blood vessels in your brain, heart, eyes, and hands.
- When the membrane is too stiff, the red blood cell **can't carry oxygen effectively**, and tissues may not get the oxygen they need.
- **Nutrients like glucose** also have a harder time getting into the cell, and waste products may not leave as easily.
- It also becomes harder for the red blood cell to **produce ATP (Adenosine Triphosphate)** the energy your body depends on for everything from thinking clearly to muscle movement.
- Rigid membranes also make red blood cells more likely to be destroyed early by the spleen, which may lead to reduced circulation and lower red blood cell count over time.

What Happens When the Membrane Is Fluid?

- A **fluid membrane** is soft, flexible, and exactly how it should be. It allows red blood cells to function at their best.
- It helps red blood cells:
  - **Move freely** through tiny capillaries, including in your brain, eyes, heart, and muscles.
  - Deliver oxygen to your cells more efficiently supporting better energy, focus, and recovery.
  - Absorb glucose and nutrients more easily, which leads to greater ATP (Adenosine Triphosphate) production the fuel your cells use for energy.

- **Remove waste products** more effectively, helping reduce oxidative stress and inflammation.
- **Live longer and stay healthier**, which supports better circulation and oxygen delivery throughout the body.
- When red blood cell membranes are fluid, it also improves **communication between cells**, enhances **immune response**, and helps support **overall metabolic and brain health**.

When your red blood cells are healthy and fluid, you're more likely to feel and function better in every way:

- Energized, because your cells are making more ATP (energy)
- Clear-headed, thanks to better oxygen delivery to the brain
- Stronger during exercise, due to improved circulation and oxygen transport
- Less cold in your hands and feet, because blood flows more freely
- Better overall, with fewer dips in energy or focus
- **Faster recovery after activity**, because nutrients and oxygen get where they're needed more efficiently
- Improved immune function, as oxygen-rich blood supports your body's natural defense system
- **Reduced inflammation**, because healthy membranes lower oxidative stress
- Better blood sugar control, due to improved glucose transport into cells
- Reversal of insulin resistance, as flexible membranes improve insulin signaling
- Easier fat loss, since becoming more insulin sensitive helps your body burn fat more efficiently
- Reduced risk of fatty liver, by improving metabolic flexibility and cellular detox
- Lower risk of Alzheimer's and cognitive decline, through better brain oxygenation and reduced inflammation
- Preserved kidney function, by improving blood flow through delicate capillaries in the kidneys
- **Relief from neuropathy symptoms**, as improved circulation and oxygen delivery support nerve health
- Improved heart and brain health, as red blood cells deliver oxygen more effectively to vital organs

Better Understanding ATP (Adenosine Triphosphate)

**ATP (Adenosine Triphosphate)** is the **main source of energy** for every cell in your body. It powers everything — from thinking, blinking, and walking to healing, breathing, and even digesting food.

Without enough ATP, your body simply can't function the way it should. That's why it's often called the "energy currency" of your cells.

Red blood cells make ATP using a process called **glycolysis**, which means they turn **glucose (sugar)** into energy **without using oxygen**. But here's the catch: for glucose to enter the red blood cell, the membrane needs to be **soft and fluid**.

When the red blood cell membrane is **stiff or rigid**, it's harder for glucose to get inside. That means the red blood cell **can't make enough ATP**, and you may start to feel tired, sluggish, or foggy — even if you're eating well.

#### In short:

- Fluid membranes = more glucose in = more ATP made = more energy for you
- Rigid membranes = less glucose in = less ATP made = more fatigue

This is why improving your **cellular health** — especially the **fluidity of your red blood cell membranes** — can make a big difference in your **daily energy, focus, and recovery**.

How This All Affects You

When your red blood cells aren't making enough **ATP (Adenosine Triphosphate)** — the energy your body runs on — it starts to show up in how you feel each day.

#### You may notice:

- Feeling tired or low on energy, even after a good night's sleep
- Mental fog, forgetfulness, or trouble focusing
- Cold or numb hands and feet, due to poor circulation
- Getting winded easily, even with light activity
- Slow recovery after exercise, or feeling sore for longer than usual

Over time, when your red blood cell membranes stay rigid and your cells can't produce enough energy, it can lead to deeper health problems, such as:

- Insulin resistance, where your body has trouble using insulin properly
- Weight gain, especially around the belly
- High blood pressure, due to poor oxygen delivery and inflammation
- Fatty liver, which affects how your body stores and breaks down fats
- Weakened immunity, making it easier to get sick
- Higher risk of chronic conditions, like heart disease or type 2 diabetes

The good news? You can turn this around by improving your **cellular health** — starting with something as simple as helping your red blood cell membranes stay **fluid and flexible**.

How Do You Support Red Blood Cell Membrane Health?

One of the best ways to improve — and maintain — the health of your red blood cell membranes is to **get tested** and **take action to balance your intake of omega-6 and omega-3 fats**. A simple **dried blood spot test** can measure the fatty acid levels in your red blood cells and tell you if your membrane is likely **fluid (healthy)** or **rigid (unhealthy)**.

Most people today consume too many omega-6 fatty acids, especially linoleic acid, which is found in:

- Fried foods
- Seed and vegetable oils (like soybean, corn, safflower, and sunflower oil)
- Packaged snacks and fast food

At the same time, they often don't get enough **omega-3 fatty acids**, which come from:

- Fatty fish like salmon, sardines, anchovies, and mackerel
- Plant sources like flaxseeds, chia seeds, walnuts, and algae-based products

This imbalance — too much omega-6 and too little omega-3 — can cause your red blood cell membranes to become stiff, inflamed, and less effective. When that happens, it affects everything from circulation and oxygen delivery to energy levels and long-term cellular health.

Bringing your omega-6 to omega-3 ratio back into balance is a simple but powerful way to improve how you feel and how your body functions at the cellular level.

What to Do After Testing: Omega-3 + Polyphenols for Better Membrane Health

If your blood test shows that your **omega-3 levels are too low** or your **omega-6 to omega-3 ratio is out of balance**, the next step is taking action — and that often means adding a **high-quality omega-3 and polyphenol supplement** like BalanceOil+ to your daily routine.

If you choose a fish oil or omega-3 supplement that does not include polyphenols, try again, especially if you are using test-based nutrition. To achieve the outcomes I'm promoting in this article, choose a supplement like BalanceOil+ that includes:

- **DHA and EPA** These are the two most important omega-3s for improving red blood cell membrane fluidity and overall cellular health.
- **Polyphenols** These plant-based nutrients (often from olives or berries) protect omega-3 fats from oxidation and help them absorb into your cell membranes more effectively.

Together, omega-3s and polyphenols work like a tag team to:

- Rebuild flexible, fluid membranes
- Improve oxygen delivery
- Boost ATP (energy) production
- Support brain, heart, and immune health

Many people notice more energy, better focus, improved circulation, and reduced inflammation within just a few weeks of restoring this balance.

If you're serious about feeling better from the inside out, this is a powerful place to start — by **supporting your red blood cells at the cellular level**.

In Simple Terms: Better Health Begins with Your Cells

Your body is made up of trillions of cells — and when your cells are healthy, *you* are more likely to be healthy.

One of the most important, yet often overlooked, steps to better health is improving the **fluidity of your red blood cell membranes**. When those membranes are soft and flexible, your red blood cells can:

- Deliver oxygen more efficiently
- Absorb nutrients more effectively
- Produce more ATP (energy)
- Support circulation, focus, and endurance

This small change at the **cellular level** can lead to big improvements in your **daily energy, brain clarity, metabolism, and long-term wellness**.

Ready to Take Control of Your Cellular Health?

Don't guess — **test**. A simple **dried blood spot test** can reveal the health of your red blood cell membranes by measuring your **omega-3 levels** and **omega-6 to omega-3 ratio**.

Once you know your numbers, you can take clear action to restore balance with the help of **omega-3s and polyphenols**, along with smart food and lifestyle changes.

If you want to feel better, think clearer, move with more energy, and reduce your risk of chronic disease...

## Start at the cellular level. Start with your red blood cell membranes.

If you'd like to learn more about what I've shared in this article — and how you can get tested and begin improving the fluidity and flexibility of your red blood cell membranes — feel free to **email me directly** at <u>Robert@dietfreelife.com</u> or <u>schedule a free consultation</u>.

Alternatively, reach out to the person who shared this article with you. They can help guide you on how to take the next step toward better cellular health — and better overall wellness.

Calder, P. C. (2017). Omega-3 fatty acids and inflammatory processes: From molecules to man. *Biochemical Society Transactions, 45*(5), 1105–1115. https://doi.org/10.1042/BST20160474

Harris, W. S., Tintle, N. L., Etherton, M. R., & Vasan, R. S. (2016). The Omega-3 Index and relative risk for coronary heart disease mortality: Estimation from 10 cohort studies. *Atherosclerosis*, *255*, 9–15. <u>https://doi.org/10.1016/j.atherosclerosis.2016.10.009</u>

Stillwell, W., & Wassall, S. R. (2003). Docosahexaenoic acid: Membrane properties of a unique fatty acid. *Chemistry and Physics of Lipids*, *126*(1), 1–27. <u>https://doi.org/10.1016/S0009-3084(03)00101-4</u>

Tufts University. (2022). *93% of Americans have metabolic dysfunction, new analysis finds*. [News summary reference]. Retrieved from <u>https://now.tufts.edu</u>

Feingold, K. R., & Grunfeld, C. (2000). Introduction to lipids and lipoproteins. In K. R. Feingold et al. (Eds.), *Endotext* [Internet]. MDText.com, Inc. <u>https://www.ncbi.nlm.nih.gov/books/NBK305896/</u>

Nicolson, G. L. (2014). Lipid replacement therapy: A nutritional approach for reducing cellular damage, restoring mitochondrial function, and improving fatigue and other symptoms in chronic illness. *Nutrition and Metabolic Insights, 7*, 27–35. <u>https://doi.org/10.4137/NMI.S10474</u>

Chiu, D., Williams, R., Huggins, T. G., & Fortmann, S. P. (1993). Red cell membrane lipid alterations in patients with hypercholesterolemia. *Atherosclerosis*, *104*(1–2), 205–211. <u>https://doi.org/10.1016/0021-9150(93)90112-G</u>

**Robert Ferguson** is a California- and Florida-based single father of two daughters, nutritionist, researcher, best-selling author, speaker, podcast and television host, health advisor, NAACP Image Award Nominee, creator of the **Diet Free Life** methodology, and **Chief Nutrition Officer for iCoura Health**. He also serves on the **Presidential Task Force on Obesity** for the National Medical Association and the **Health and Product Advisory Board** for Zinzino, Inc.