

HEALTH HUB
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MASTERING METABOLIC HEALTH

THE FOUNDATION OF DISEASE PREVENTION



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Metabolic Health

Metabolism is the fundamental process by which your body converts the food you eat into the energy required to run every single cell. You can think of it as your body’s personal, complex engine. Metabolic health is simply a measure of how efficiently and smoothly the engine is running. However, your body isn’t one simple machine; it’s an intricate network made up of over 200 different types of specialized cells (like those in your heart, brain, and muscles). Just as a car has many parts that need specific maintenance (the engine, the brakes, the electronics), your different cell types have unique requirements for producing energy optimally. This is why metabolic health is highly personal. Your unique genetics and lifestyle choices mean your metabolism is different from everyone else’s.



Metabolic Dysfunction

When metabolic health starts to decline, it’s referred to as metabolic dysfunction. 93% of U.S. adults have metabolic dysfunction. Most adults have room to strengthen their metabolic health, which means there’s tremendous opportunity for improvement. The trouble caused by metabolic dysfunction doesn’t strike everywhere at once. Instead, metabolic dysfunction usually appears first in specific, vulnerable cell types, like those in your liver or fat tissue, in a more noticeable way before other parts of your body even show signs of trouble. Consequently, no two people’s metabolic issues will look exactly the same. While metabolic dysfunction is not the root of every disease, it is now being linked to many chronic illnesses as a central factor in their development and progression. **The following three things indicate metabolic dysfunction: mitochondrial dysfunction, chronic inflammation, and oxidative stress.**

1. Mitochondrial Dysfunction

When cells are struggling to perform their specific duties, it's likely due to problems with the cell's energy production system. The mitochondria are the energy power plants of the cell. They produce energy from the food you eat, the water you drink, and the air you breathe.

Mitochondrial dysfunction simply means that the cell's power plants aren't working as efficiently as they should. If these power plants break down or run inefficiently, the cell doesn't get enough energy to do its job. Imagine a city where the power grid is constantly failing with traffic lights not working, computers crashing, and essential services interrupted. When cells don't receive adequate energy due to mitochondrial dysfunction, fat can start building up inside the cells, which throws things even more out of balance.

2. Chronic Inflammation

The environment inside the cell is negatively impacted by the stress response to low energy from mitochondrial dysfunction. The inflammatory response to the perceived low-energy threat becomes chronic inflammation throughout the body. It is chronic until the cell environment is changed. The symptoms of chronic inflammation can vary widely depending on which part of the body is affected



Metabolic Syndrome

Eventually, when left unchecked, metabolic dysfunction will turn into a greater condition: metabolic syndrome. The big question is, how do you know when the "check engine light" is on when you can't see what is going on with the cells inside your body? The key takeaway is to go to a healthcare provider for your annual physical exam. Been a while since your last physical exam? Here's an outline of what to expect, and even more importantly, what to do with the information, including interpreting your lab results.



3. Oxidative Stress

When your cells are overwhelmed by stress and are struggling to process all the refuse, the cells start producing harmful and reactive byproducts called free radicals. These are unstable molecules that can damage healthy cells, kind of like sparks flying around in a dry forest. Too many free radicals lead to something called oxidative stress, which throws your body out of balance. Over time, oxidative stress wears down your cells and tissues and has been linked to a wide range of health issues.

Looking for ways to decrease your stress? Enjoy a recorded Mindful Moment break!

Metabolic Syndrome Cont.

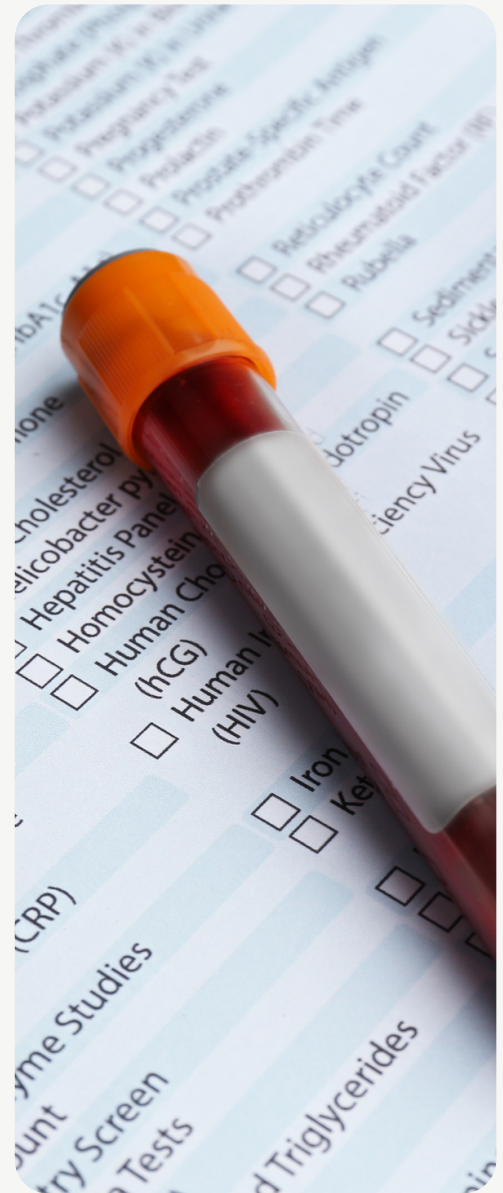
If left unchecked, small signs of metabolic dysfunction can eventually snowball into something more serious: metabolic syndrome—a cluster of conditions that raises your risk for heart disease, diabetes, and more. Having **three or more** of the following five traits, without the aid of medication, means that you have metabolic syndrome:

- Fasting Glucose of 100 mg/dL or higher.
- A waistline of more than 35 inches for women and 40 inches for men.
- HDL cholesterol less than 40 mg/dL for men and 50 mg/dL for women.
- Triglycerides of 150 mg/dL or higher.
- Blood pressure of 130/85 mmHg or higher.

If you do not have all of these lab results from your most recent annual physical examination, ask your doctor to provide you with additional tests so that you can better understand your metabolic health.

But here's the challenge: how can you tell something's off when you can't actually see what's going on inside your body? It's like your car's check engine light turning on. You know something needs attention, but without a diagnostic test, you have no idea what's causing the issue or how to fix it.

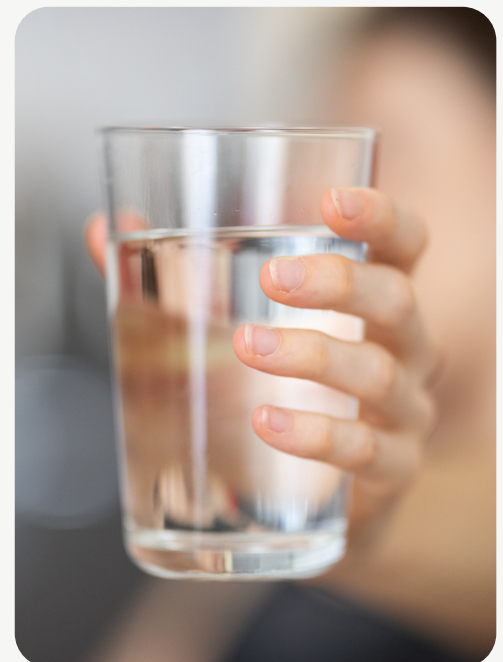
Getting your [annual physical exam](#) is so important because it's your opportunity to catch those early warning signs before they become bigger problems. Use those lab results and other tests to take charge of your metabolic health.



Everyday Choices for Metabolic Health

Metabolic health isn't just about carbs or calories—it's about creating a whole-body environment where your cells can thrive. These lifestyle factors work together to support hormone balance, reduce inflammation, and keep your energy systems running smoothly. The next section includes a lot of information and actionable tips. Don't feel pressured to tackle everything at once, but instead, choose a few areas to focus on without getting overwhelmed.

You may find that you are already mastering some areas, while others may need more attention.





Food

What you eat plays a powerful role in shaping the structure and function of your cells and even the trillions of microbes that make up your gut microbiome. In a very real way, eating is more than just a daily habit; it's the process of matching your body's cellular needs with the nutrients you take in. Every bite is a form of communication with your cells, sending signals that influence everything from energy levels to immune response. If you're experiencing intense food cravings, it might be your body's way of telling you it's getting mixed messages with too many processed inputs and not enough real nourishment.

Rather than getting caught up in the latest diet trends or restrictive food rules, focus on eating whole, unprocessed foods that your body can actually recognize and use. And most importantly, try to bring a sense of mindfulness to your meals by slowing down, appreciating where your food comes from, and finding a moment of awe in the simple act of nourishing yourself.

If you're looking for better energy, consider reducing three things that often get in the way:

- **Added sugar** (white sugar, brown sugar, powdered sugar, cane sugar, coconut sugar, maple syrup, honey, molasses, agave nectar, corn syrup, high-fructose corn syrup, glucose, etc.)
- **Refined grains** (standard breads, rice, pasta, etc.)
- **Industrial seed oils** (soybean oil, corn oil, cottonseed oil, sunflower oil, safflower oil, peanut oil, grapeseed oil, and any oil that says 'hydrogenated').

Aim to gradually work up to **50 grams of fiber per day**. Start with a more manageable amount—around 30 grams—until your gut adjusts. Begin with fiber-rich foods like avocados, raspberries, and chia seeds, then slowly add in beans and legumes as your digestion adapts.



Food Cont.

Eat 2-3 servings of probiotic foods per day. Examples of these include yogurt, kefir, sauerkraut, kimchi, miso, tempeh, natto, kvass, and apple cider vinegar. Make sure your yogurt and kefir have “live active cultures” on the label.

Increase omega-3 intake daily. Good sources of omega-3 include wild-caught salmon, sardines, Atlantic mackerel, rainbow trout, anchovies, organic pasture-raised eggs, chia seeds, basil seeds, flaxseeds, hemp seeds, walnuts, and algal oil.

Add diversity to the diet with antioxidants, micronutrients, and polyphenols by incorporating at least 30 different types of organic plant foods such as fruits, vegetables, nuts, seeds, beans, legumes, herbs, and spices. Include at least 2 servings of **cruciferous** vegetables per day (broccoli, cauliflower, brussels sprouts, kale, bok choy, arugula, watercress, collard greens, etc).

Aim for 30 grams of protein at each meal (90 grams daily). Good sources of protein include beef, chicken, turkey, pork, and game meats like elk and bison, fish and seafood, milk, Greek yogurt, cheese, eggs, beans, lentils, peas, edamame, tofu, tempeh, hemp seeds, chia seeds, pumpkin seeds, almonds, sunflower seeds, flaxseeds, cashews, and pistachios. If using protein powders, consider using organic and grass-fed or regenerative with minimal ingredients, no added sugars, no colorings, no “natural flavors” or artificial flavors, and no gums.



Movement

To support your metabolic health, aim to walk at least 7,000 steps spread throughout the day, gradually increasing to 10,000 daily. Consistent movement helps regulate blood sugar, improve insulin sensitivity, and reduce inflammation. In addition to walking, include at least 150 minutes of moderate intensity exercise each week. You can estimate your target heart rate for this level of effort by subtracting your age from

220 and aiming for around 64% of that number. To build strength and support muscle health, which is essential for metabolic function, incorporate resistance training three times a week, with each session lasting at least 30 minutes and targeting all major muscle groups each week. Lastly, get movement throughout your day. Try setting a goal to move around for at least 90 seconds every hour.





Sleep

Prioritize getting 7 to 8 hours of sleep each night, as quality sleep is essential for metabolic health, hormone regulation, and cellular repair. Aim for consistency by going to bed and waking up at the same times each day—even on weekends—to support your body's natural circadian rhythm. A stable sleep routine can improve energy levels, mood, and overall resilience.

Stress, Relationships & Emotional Health

Set aside at least 10 minutes each day for meditation to help calm the nervous system, reduce stress, and support emotional resilience. Use this time to observe your thoughts and emotions without judgment and begin to recognize any reactive or maladaptive patterns that may be impacting your well-being. With regular practice, meditation can improve focus, emotional regulation, and overall mental clarity.

Meal Timing and Habits

Establish a defined 10-hour eating window. For example, from 10 a.m. to 8 p.m. or 8 a.m. to 6 p.m. Practice mindful eating by sitting down for all main meals without screens or distractions. Before you begin, take 10 deep breaths and pause to express gratitude for your food. As you eat, chew each bite thoroughly, at least 15 times, putting down your silverware between bites to fully savor the meal and aid digestion.

Light

To support your natural circadian rhythm and overall metabolic health, maximize your exposure to natural sunlight during the day. Aim to spend at least 15 minutes outdoors without sunglasses within the first hour after waking. If sunlight isn't available at that time, try to be outside at sunrise or use bright lights or a light therapy box to simulate daylight.

Additionally, get outside for four or more 15-minute sessions throughout the day, and try to move indoor activities like eating or phone calls outdoors when possible. In the evening, minimize exposure to blue-light by wearing blue-light blocking glasses from sundown until bedtime. Dim or turn off unnecessary lights and use screen settings like dark mode or night shift to reduce light exposure, helping your body prepare for restful sleep.



Temperature

Incorporate regular heat and cold exposure into your routine to boost metabolic health and resilience. Aim for at least one cumulative hour of heat exposure each week through activities like dry or infrared sauna sessions or heated exercise classes such as hot yoga. The heat should be intense enough to make you sweat significantly and feel comfortably uncomfortable.

Complement this with cold exposure for a total of at least 12 minutes per week, using methods like cryotherapy, cold showers, or cold plunges. Each cold session should last about three minutes at temperatures between 35 to 45 degrees Fahrenheit, pushing your body to face an extreme challenge and build tolerance over time.

Ingested Toxins

Ensure you stay well-hydrated by drinking enough clean water each day—aim for at least half an ounce of water per pound of your body weight.

To maximize purity, use a reverse osmosis or high-grade carbon filter to remove contaminants. Avoid drinking tap water directly or from plastic bottles, as these can introduce unwanted chemicals. Instead, opt for metal or glass water bottles to keep your water fresh and free from harmful substances.

Proper hydration with clean water supports every aspect of your metabolic health and overall well-being. Additionally, do not smoke or vape any products as this can be extremely damaging to the body.

Environmental Toxins

Choose clean, non-toxic personal care and home care products that are unscented and free from colorings or dyes to reduce exposure to harmful chemicals. When scents are present, they should come exclusively from natural essential oils. Additionally, prioritize spending at least four hours each week immersed in nature, ideally in green spaces far from roads and traffic. This helps you connect deeply with natural plant life, promoting mental clarity, reducing stress, and supporting overall health.





Metabolic Health Starts Today

Metabolic health is the foundation of overall well-being, influencing everything from energy levels to chronic disease risk. It reflects how efficiently your body converts food into energy to fuel the function of over 200 specialized cell types. When this system breaks down, it leads to metabolic dysfunction, now affecting 93% of U.S. adults, which can quietly damage organs over time through mitochondrial dysfunction, chronic inflammation, and oxidative stress.

Left unchecked, metabolic dysfunction can progress into metabolic syndrome, a dangerous cluster of conditions that significantly raises the risk of heart disease, diabetes, and other chronic illnesses. Monitoring key biomarkers like fasting glucose, triglycerides, HDL cholesterol, waist circumference, and blood pressure during an annual physical exam is essential for catching early warning signs.

Optimizing metabolic health goes beyond just diet or exercise; it involves supporting cellular function through a balanced lifestyle that includes nourishing whole foods, quality sleep, stress management, and reducing toxic exposures. With the right knowledge and a few targeted changes, you can take control of your metabolic health and build a stronger foundation for lifelong disease prevention.

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