

# Fueling your body's powerhouses

A whole-person care approach to energy and wellness

## What is whole-person mitochondrial support?

Your body is made up of trillions of cells, and inside nearly every one of those cells are tiny structures called mitochondria. Often called the “powerhouses” of the cell, mitochondria are responsible for creating the energy your body needs to function. They take the food you eat and the oxygen you breathe and convert them into energy.



When mitochondria aren't working properly—a problem known as mitochondrial dysfunction—your cells can't produce enough energy. Over time, this energy shortfall can contribute to a wide range of health concerns. Fatigue, brain fog, muscle weakness, and even more serious issues affecting the nervous, metabolic, and immune systems have been linked to mitochondrial dysfunction.

Whole-person care means looking at the entire picture of your health—not just isolated symptoms. Instead of focusing only on one part of the body or a specific diagnosis, whole-person mitochondrial support considers how different areas of your life and body systems might be impacting your energy production. This approach may include looking at your nutrition, stress levels, sleep quality, toxin exposure, genetics, and more to create a personalized treatment plan tailored to your unique needs.



## Step 1

# Personalized assessment

Your healthcare provider may recommend lab testing to help evaluate how well your mitochondria are functioning and identify areas where support may be needed.

**Testing options could include:**

**Nutritional analysis:** Nutritional deficiencies can negatively impact mitochondrial health. This test evaluates nutrients (vitamins, minerals) required for mitochondrial energy production and repair.

**Organic acid test:** This test helps providers understand how well the body turns food into energy. It looks at organic acids—natural substances made when the body breaks down food. The results can show how well the cells are working, whether nutrient levels are balanced, and how well the body is making energy.

**Oxidative stress:** Oxidative stress happens when there are too many harmful molecules called free radicals in the body and not enough antioxidants to keep them in check. Measuring markers of oxidative stress helps us see if these molecules are damaging your mitochondria, which can interfere with how your cells make energy.





## Step 2

# Lifestyle foundations for mitochondrial support

## Nutrition

Focus on a whole-foods, plant-forward eating pattern, such as the Mediterranean diet:

- Build meals around vegetables, fruits, legumes, whole grains, nuts, and seeds.
- Use extra-virgin olive oil as your primary source of fat.
- Aim to eat at least two servings of fish (especially fatty fishlike salmon, sardines, or mackerel) per week.
- Enjoy moderate portions of poultry, eggs, and dairy (in smaller servings than plant foods and fish).
- Eat red meat occasionally, and opt for lean cuts when you do.
- Minimize packaged snacks, sugary drinks, refined grains, and fast food.
- Reduce salt by seasoning food with herbs, garlic, lemon, and other natural spices.
- Drink water as your main beverage. If you drink alcohol, consume red wine in moderation.
- Eat slowly, savor your food, and make meals a time for connecting with others.

Eat foods that are naturally rich in mitochondrial-specific nutrients, including:

- **B vitamins:** Leafy greens, whole grains, legumes, and eggs
- **Magnesium:** Nuts, seeds, and leafy greens
- **Omega-3 fatty acids:** Fatty fish, flaxseed, and walnuts
- **Coenzyme Q10 (CoQ10):** Eggs, nuts, whole grains, organ meats, chicken, and fish
- **Resveratrol:** Red grapes, berries, cocoa, and peanuts



Consider intermittent fasting—when appropriate and under the guidance of a healthcare professional—to reduce inflammation and improve how mitochondria produce energy. Benefits of intermittent fasting include:

- Weight loss
- Improved metabolic health
- Reduced risk of cardiovascular disease
- Nervous system protection
- Better sleep
- Improved gut health



Types of intermittent fasting

Fasting method	Description	Feeding window	Fasting window
Alternate day fasting (ADF)	Abstain from all calorie-containing food and beverages during the fasting window. Consume food <i>ad libitum</i> during the feeding window	Every other day	Every other day
Modified alternate day fasting (mADF)	Restrict energy intake to 20–25% of daily caloric requirement during the fasting window. Consume food <i>ad libitum</i> during the feeding window.	Every other day	Every other day
Time-restricted feeding (TRF)	Abstain from all calorie-containing food and beverages during the fasting window. Consume food <i>ad libitum</i> during the feeding window.	4–12 hours per day	12–20 hours per day
Early time-restricted feeding (eTRF)	Abstain from all calorie-containing food and beverages during the fasting window. Consume food <i>ad libitum</i> during the feeding window.	6 hours per day, early (e.g., 8 a.m.–2 p.m.)	The remainder of the day
5:2 diet - Periodic or cyclic fasting	Restrict energy intake to 20–25% of daily caloric requirement during the fasting window. Consume food <i>ad libitum</i> during the feeding window	5 days per week	2 non-consecutive days per week
6:1 diet - Periodic or cyclic fasting	Abstain from all calorie-containing food and beverages during the fasting window. Consume food <i>ad libitum</i> during the feeding window.	6 days per week	1 day per week

\**ad libitum* = without restrictions



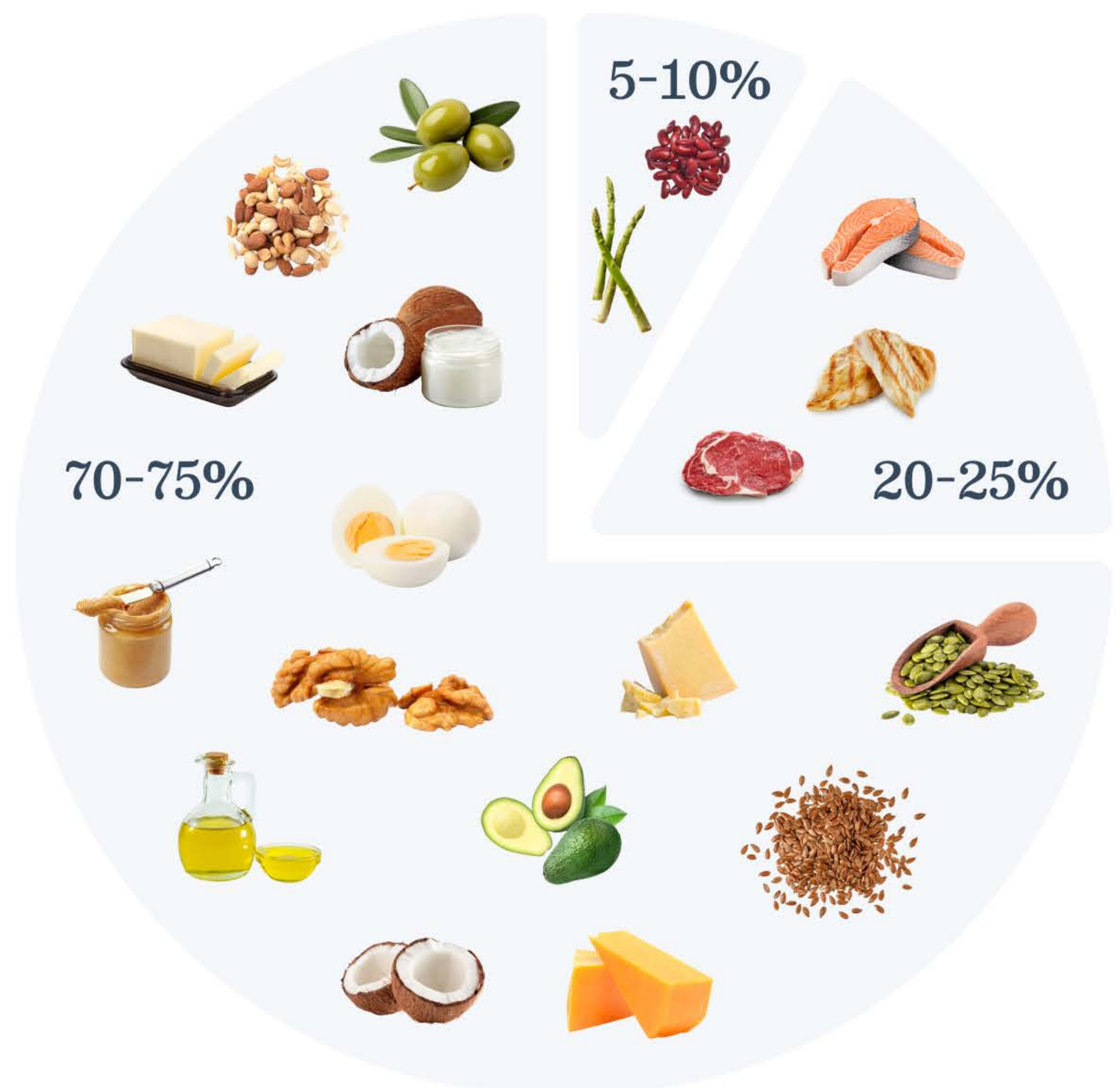
**If fasting is too challenging**, a well-planned ketogenic diet can support mitochondrial and metabolic health by shifting the body's energy system toward fat-burning and reducing oxidative stress/inflammation.

## Following a ketogenic diet

The daily breakdown of calories from macronutrients should be approximately:

- **70–75%** from anti-inflammatory fat
- **20–25%** from good-quality protein
- **5–10%** from low-glycemic, nutrient-dense carbohydrates

On a 2,000 calorie per day diet, the carbohydrates consumed should be approximately 20–50 g per day. Many individuals find using a dietary tracking app helps them stay adherent with the ketogenic diet.



## Movement and exercise

As we age, mitochondrial function naturally declines. Regular exercise can slow or even reverse this by helping your body make more mitochondria and improving how well they work.

- **High-intensity interval training (HIIT):** Try short bursts of higher-effort activity (like fast walking or cycling) followed by rest or slower movement, for about 20–30 minutes, 3–5 times per week.
- **Moderate-intensity aerobic exercise:** Partake in activities like brisk walking, cycling, or swimming for 30–60 minutes, at least 3–5 times per week.
- **Resistance (strength) training:** Do exercises like weight lifting, resistance bands, or bodyweight movements (such as squats or push-ups) for 20–40 minutes, 2–3 times per week.

Begin at a pace that feels manageable and gradually increase over time. Take breaks if you're not feeling well, and pick exercises you find fun to help you stay consistent and motivated.



## Stress management

Mitochondria play a key role in how your body responds to stress, helping to supply the energy needed to deal with both physical and emotional challenges. When stress becomes constant, it places ongoing demands on your mitochondria. Over time, this can lead to increased inflammation, oxidative stress, and damage to the mitochondria, reducing their ability to produce energy efficiently.

### Tips to help manage stress:

- For just a few minutes each day, take slow, deep breaths or listen to a guided meditation to calm the nervous system.
- Engage in regular physical activity, which not only supports mitochondrial health directly but also acts as a natural stress reliever.
- Spend time in nature by planning walks outside or simply being in green spaces.
- Stay socially connected with friends and loved ones.
- Write your thoughts and feelings in a journal to help process emotions and reduce mental tension.

## Sleep

Lack of sleep has direct negative impacts on mitochondria, in addition to increasing the body's stress response.

- Sleep 7–9 hours every night.
- If you have trouble falling or staying asleep, try optimizing your sleep habits: keep a regular sleep schedule; avoid screens at least an hour before bed; create a dark, quiet, and cool sleep environment; and avoid caffeine or heavy meals late in the day.
- If sleep issues persist or you snore, gasp, or choke while sleeping, talk to your doctor about being evaluated for sleep apnea or other sleep disorders.

## Environmental health

Environmental toxins are harmful substances found in the air we breathe, the food we eat, the products we use, and even the water we drink. These toxins increase oxidative stress and damage mitochondria.





## Common toxins and tips to avoid them



### Pesticides

Buy organic produce when possible, especially for items on the Environmental Working Group's Dirty Dozen™ list.



### Household chemicals

Choose non-toxic, fragrance-free cleaning and personal care products. Read labels and look for eco-certified or “green” options.



### Heavy metals (lead, mercury, arsenic)

Avoid eating high-mercury fish (like swordfish and tuna), use a water filter that removes heavy metals, and be cautious with old paint and plumbing.



### Mold toxins

Keep indoor spaces dry and well-ventilated, fix leaks promptly, and consider professional testing if you suspect mold in your home.



### Plastic chemicals (BPA, phthalates)

Store food in glass or stainless steel containers, avoid microwaving plastic, and choose BPA-free products.



### Smoking

Avoid exposure to secondhand smoke, and if you smoke, seek out support to help you quit.



### Air pollutants

Use a high-quality air purifier indoors, avoid exercising near busy roads, and open windows for ventilation when safe to do so.



### Alcohol

Drink only in moderation—no more than two drinks per day for men and one for women.

## Step 3

## Targeted supplement support

In some cases, your provider may recommend specific supplements to support your mitochondria. While not a replacement for a healthy lifestyle, targeted supplements support the benefits of diet and other lifestyle modifications—especially when testing shows specific nutrient deficiencies.

Examples of recommended ingredients include:

- B vitamins
- Magnesium
- CoQ10
- L-carnitine
- Alpha-lipoic acid (ALA)
- Glutathione



# Final thoughts: You're not alone

Caring for your mitochondria is one of the most powerful steps toward lasting energy, better health, and graceful aging. These tiny engines inside your cells influence everything from how clearly you think to how resilient your body is. You can protect mitochondrial function by focusing on personalized assessments, lifestyle changes, and targeted support. With informed guidance, you can take steps to support mitochondrial function and overall well-being.



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