

Malnutrition

A plain-English guide for you and your family

WHAT IS HAPPENING

Normally, the food you eat gives your body the fuel and building blocks it needs to run. Carbs and fats burn for energy. Protein builds and repairs muscle, skin, and the cells that fight germs. When everything is working, your weight stays steady and your body hums along. Malnutrition means this balance breaks. It happens when someone does not eat enough (maybe they lost their appetite, feel too sad to eat, cannot afford food, or have trouble swallowing), when the gut cannot absorb food (like in Crohn disease or after part of the bowel is removed), when the body burns fuel too fast (like in cancer or a bad infection), or when the body loses food before it can be used (like in constant vomiting or diarrhea). When the body runs out of incoming fuel, it does not just sit still—it starts breaking down its own muscle and fat to keep the heart beating and the brain thinking. At first you feel tired and weak because your muscles shrink. Then your immune system slows down because it does not have the protein and energy it needs to make germ-fighting cells, so you catch infections more easily. Wounds heal slowly because your body cannot build new skin fast enough. If you are lying in bed a lot, pressure sores form on bony spots like your tailbone or heels because your starved body cannot repair the tiny damage that happens when skin gets pressed flat for hours. None of this is random; every weird finding traces back to one upstream problem: not enough fuel. The danger is that vital signs can look okay for a while as the body tries hard to cope, so the team might miss how bad things really are. And if you refeed someone too fast—especially with a lot of carbs or sugar—you can trigger refeeding syndrome: suddenly phosphorus, potassium, and magnesium in the blood drop dangerously low, the heart rhythm goes haywire, seizures can happen, and the person can die. So the fix is to count calories, figure out why the person is not getting enough food, and feed carefully and slowly to let the body rebuild safely.

What you might feel

- Weight loss over time — you drop pounds without trying
- Muscle wasting — arms and legs look thinner, you feel weak
- Low energy and constant tiredness

- Swelling in the legs, feet, or belly (edema)
- Skin problems — dry, peeling, slow to heal, or bruises easily
- Hair loss or hair that pulls out easily
- Pale skin and inside of eyelids (anemia)
- Confusion, trouble concentrating, or mood changes
- Infections that keep coming back
- Very low body mass index (BMI under 18.5 in adults, or weight dropping below growth curve in children)

Call the doctor right away if...

- Sudden, large weight loss (more than 10 percent of body weight in 3–6 months) — the body is burning through reserves too fast and may soon fail to keep vital organs working
- Swelling in the belly or legs that keeps getting worse — a sign that the liver or heart may be struggling because protein levels are critically low
- Confusion, severe weakness, or inability to get out of bed — the brain and muscles are starving and shutting down; this is a medical emergency
- Repeated infections or wounds that will not heal — the immune system is too weak to fight off germs, and the body cannot repair itself

What the care team will do

- Check labs for phosphate, magnesium, potassium, and glucose before starting any feeding and monitor daily for three to five days
- Give thiamine 100 to 300 milligrams IV or by mouth, plus multivitamin with folate and other B vitamins, before or with the first feeding
- Start nutrition at 50 percent of estimated calorie needs (usually 10 to 20 calories per kilogram per day) and increase slowly over three to five days if labs stay stable
- Weigh the patient daily at the same time with the same scale and measure intake and output every shift
- Replace phosphate, magnesium, and potassium aggressively per protocol when levels drop below normal even if the patient has no symptoms
- Sit the patient upright at 30 to 90 degrees for all meals and tube feedings and keep head elevated for 30 minutes after eating
- Coordinate with speech therapy for swallow evaluation and dietitian for calorie goals and protein needs (usually 1.2 to 1.5 grams per kilogram per day)

- Monitor for swelling (edema) (swelling) in ankles and legs, check lung sounds every shift, and report new shortness of breath immediately

Medicines you may be given — and why

Oral multivitamin with minerals

Replaces vitamins and minerals the body has run out of during long stretches of not eating enough. Think of it like refilling empty shelves in a warehouse — the body needs dozens of tiny helpers (vitamins like B, C, D, and minerals like zinc and iron) to run every job, from healing wounds to making energy. When these run low, organs slow down or break. A multivitamin tops them back up so cells can work normally again.

Thiamine (vitamin B1)

Replaces thiamine, a vitamin the brain and heart need to turn sugar into energy. When someone has been starving or living on alcohol with almost no food, thiamine runs out fast. Without it, brain cells (especially in the thalamus and mammillary bodies, deep memory and coordination centers) and heart muscle cells cannot burn glucose for fuel — like trying to start a car with no spark plugs. Giving thiamine back lets those cells make energy again and prevents permanent brain damage.

Phosphate supplement (oral sodium phosphate or potassium phosphate, or IV sodium phosphate)

Replaces phosphate, a mineral that is the backbone of ATP (the energy molecule every cell uses). When someone starts eating again after long starvation, insulin rises and shoves glucose AND phosphate into cells to rebuild. If blood phosphate is already low, it can crash dangerously (refeeding hypophosphatemia), and cells cannot make ATP — the heart, lungs, and muscles stop working, and red blood cells fall apart. Giving phosphate back keeps blood levels safe so cells can make energy without crashing.

Magnesium supplement (oral magnesium oxide or citrate, or IV magnesium sulfate)

Replaces magnesium, a mineral that steadies the heart's rhythm and helps muscles relax after they contract. Magnesium also activates enzymes that make ATP and build protein. In starvation, magnesium leaks out of cells, and when refeeding starts, it rushes back in — blood levels can drop dangerously (refeeding low magnesium (hypomagnesemia)), triggering dangerous heart rhythms, muscle cramps, and seizures. Giving magnesium back keeps blood and cell levels safe during the refeed.

Potassium supplement (oral potassium chloride, or IV potassium chloride)

Replaces potassium, the main mineral inside cells that keeps the heart beating steadily and muscles contracting normally. In starvation, potassium leaks out of cells, and total body stores drop even if blood tests look okay. When refeeding starts, insulin drives potassium (and glucose) back into cells, and blood potassium can crash (refeeding low potassium (hypokalemia)), causing dangerous heart rhythms, muscle weakness, and paralysis. Giving potassium back keeps blood levels safe and cells working.

Zinc supplement (oral zinc sulfate or zinc gluconate)

Replaces zinc, a trace mineral that over 300 enzymes need to build proteins, copy DNA, heal wounds, and keep the immune system sharp. Malnutrition depletes zinc stores, slowing wound healing, weakening immunity (more infections), and damaging taste and smell. Giving zinc back helps cells repair tissue, fight infection, and recover normal function.

Where this information comes from

- ASPEN (American Society for Parenteral and Enteral Nutrition) consensus statement on malnutrition 2020
- WHO (World Health Organization) guidelines on malnutrition management
- Academy of Nutrition and Dietetics malnutrition identification standards
- Cochrane reviews on nutritional interventions

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