

What happens in our bodies when we fast?

Our bodies only exist in two states – the fed (high insulin, storing energy) state or the fasted (low insulin, burning energy) state. The body stores food energy as either sugar (glycogen) or body fat (triglycerides). During fasting, our body transitions from using sugar (glucose)



PHASE	TIME FROM LAST MEAL	ACTIONS
Feeding	0 HOURS	<ul style="list-style-type: none"> Glucose and insulin levels rise Excess glucose stored as glycogen in the liver or converted to fat
Using glycogen stores	6 – 24 HOURS	<ul style="list-style-type: none"> As insulin levels fall glycogen is broken down for fuel Liver glycogen stores last for approximately 24 hours
Gluconeogenesis	24 – 36 HOURS	<ul style="list-style-type: none"> Body transitioning from burning glucose to triglycerides New glucose is made from amino acids (protein) in a process called gluconeogenesis The proteins that supply amino acid are not necessarily muscle or useful tissue. Excess proteins like skin or connective tissue may also be used.
Ketosis	1 – 3 DAYS	<ul style="list-style-type: none"> Most of the tissues of the body (except brain) are fully transitioned to using triglycerides from body fat for fuel. Triglycerides converted to ketone bodies, which can cross the blood-brain barrier and provide up to 75% of energy needed by the brain Gluconeogenesis slows down but is still required for fuelling part of the brain
Protein conservation	5 DAYS	<ul style="list-style-type: none"> High levels of human growth hormone (HGH) maintain muscle mass and lean tissues The energy for basic metabolism is almost entirely supplied by fatty acids and ketones Blood glucose levels are maintained by converting the glycerol backbone of the fatty acids into glucose in the liver by gluconeogenesis Increased norepinephrine (adrenaline) levels maintain your metabolic rate