

ESTIMATED, NOT PROMISED

# Intermittent fasting phases, hour by hour

Reviewed on 24 September 2026 · By the KYNIO team

Fasting apps love precise numbers: fat burning at 12 hours, autophagy at 16. The evidence is less tidy. These are the six phases KYNIO shows, the hours it uses, what studies in people actually observed, and where the evidence runs out.

| HOURS   | ESTIMATED PHASE | WHAT CHANGES                         |
|---------|-----------------|--------------------------------------|
| 0-4 h   | Digestion       | Glucose and insulin rise             |
| 4-12 h  | Glucose burn    | The liver draws on stored glycogen   |
| 12-18 h | Fat burning     | Fat becomes a bigger share of fuel   |
| 18-24 h | Ketosis         | Ketone bodies rise                   |
| 24-48 h | Autophagy       | Cell recycling likely increases      |
| 48 h+   | Deep renewal    | Studied with fasting-mimicking diets |

## 0-4 h Digestion

### WHAT HAPPENS

After a meal, glucose and insulin rise while your body digests and absorbs what you ate. Cells use that glucose as their main fuel, and part of it is stored as glycogen in the liver and muscles.

### WHAT STUDIES OBSERVED

In 36 healthy young adults given a balanced mixed meal, blood glucose and insulin rose in the first hours after eating (sampled for up to 180 minutes).

### LIMITS

How long this lasts depends on the size and make-up of the meal. A large, rich dinner keeps you here longer than a light snack.

The PubMed references for this phase are in KYNIO Pro.

## 4-12 h Glucose burn

### WHAT HAPPENS

Insulin falls and the liver releases stored glycogen to keep blood glucose steady. Over time it also makes new glucose from other sources (gluconeogenesis).

### WHAT STUDIES OBSERVED

Using carbon-13 magnetic resonance in healthy adults, researchers tracked liver glycogen falling across a 68-hour fast. In the first 22 hours, gluconeogenesis already supplied about 64% of the glucose the body produced.

### LIMITS

A small study from 1991. It measured the liver directly, which is rare, but it doesn't give one switch-over hour that applies to everyone.

The PubMed references for this phase are in KYNIO Pro.

## 12-18 h Fat burning

### WHAT HAPPENS

As liver glycogen runs lower, fat becomes a bigger share of the fuel you burn. Stored fat is broken down (lipolysis) and released into the blood.

### WHAT STUDIES OBSERVED

A randomized trial in 36 lean, healthy adults compared 24-hour fasts with continuous energy restriction, to isolate the effects of fasting itself, including fat mobilisation.

### LIMITS

"Fat burning" is a shift in fuel mix, not an on/off switch, and it isn't the same as losing body fat. Fat loss over weeks depends on your overall energy balance.

The PubMed references for this phase are in KYNIO Pro.

## 18-24 h Ketosis

### WHAT HAPPENS

The liver turns more fatty acids into ketone bodies, such as beta-hydroxybutyrate, which the brain and muscles can use for energy.

### WHAT STUDIES OBSERVED

In a randomized trial with 60 healthy, non-obese adults, four weeks of alternate-day fasting raised beta-hydroxybutyrate, even on non-fasting days. A small pilot with 5 adults on a 72-hour fast documented the fall in insulin and glucose and the wider metabolic shift.

### LIMITS

When ketones rise varies a lot from person to person: people who eat low-carb or train a lot often get there sooner. The 72-hour study is a pilot with only five people.

The PubMed references for this phase are in KYNIO Pro.

## 24-48 h Autophagy

### WHAT HAPPENS

Autophagy is the cell's recycling system: damaged components are broken down and reused. Fasting likely increases it.

### WHAT STUDIES OBSERVED

One of the few studies to measure autophagy directly in people was a pilot with 30 participants on a fasting-mimicking diet, which measured autophagic flux in blood cells. The 72-hour pilot above described a metabolic state “conducive to autophagy”, but its authors stress that autophagy itself wasn't measured.

#### LIMITS

The exact start of autophagy has not been measured directly in humans. The popular “16 hours” or “24 hours” figures come mostly from animal studies. KYNIO's 24-hour mark is an estimate, and the app says so.

 The PubMed references for this phase are in KYNIO Pro.

## 48 h+ Deep renewal

#### WHAT HAPPENS

Longer fasts, and diets that mimic fasting, have been tested in clinical trials for their effect on markers linked to ageing and metabolic health.

#### WHAT STUDIES OBSERVED

In a randomized trial with 100 participants, three monthly cycles of a 5-day fasting-mimicking diet lowered weight, blood pressure and IGF-1, without serious adverse effects. An analysis of two human trials linked three cycles to an estimated 2.5-year reduction in median biological age.

#### LIMITS

These trials used a specific fasting-mimicking diet, not water-only fasting. The results are promising and the research continues. Don't try fasts longer than 24 hours without talking to a doctor.

 The PubMed references for this phase are in KYNIO Pro.

## What we still don't know

- The exact hour any phase starts in a specific person.
- When autophagy starts in humans, and how much fasting changes it in different tissues.
- Whether results from fasting-mimicking diet trials apply to water-only fasting at home.
- How much of the effect of time-restricted eating comes from the window itself rather than from eating less. In a 12-month trial, adding an 8-hour eating window to calorie restriction didn't add significant weight loss (**more on 16:8**).

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<https://kynioapp.com/phases> · Estimates, not medical advice. Talk to a doctor before fasting if you are pregnant, under 18, have diabetes or a history of eating disorders. · KYNIO, free on Android and at [kynioapp.com/app](https://kynioapp.com/app)