

THE CELLULAR ENGINE: ZONE 2

The Anatomy of Aerobic Capacity

Build The Engine (Mitochondria)

Zone 2 training stimulates **Mitochondrial Biogenesis**—literally growing more "power plants" inside your muscle cells.

This increased density allows you to use **Fat and Lactate** as your primary fuel sources (ATP). Instead of lactate building up and slowing you down, your mitochondria vacuum it up and reuse it for energy.

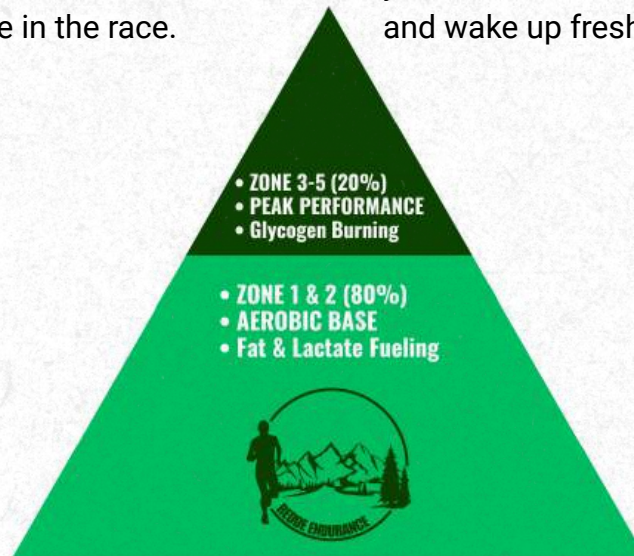
The Athlete Benefit: You stop burning through your limited sugar reserves (Glycogen). This means you can sustain speed for hours without "hitting the wall" or fading late in the race.

Build The Plumbing (Capillaries)

Low-intensity volume drives **Capillary Angiogenesis**, creating a dense network of blood vessels surrounding your muscle fibers.

Think of this as upgrading a single-lane road to a superhighway. It delivers massive amounts of oxygen to working muscles while simultaneously flushing out metabolic waste (protons and CO₂).

The Athlete Benefit: This superior plumbing delays the onset of acidosis (the burn). It allows you to recover rapidly between hard intervals and wake up fresh after long sessions.



The Talk Test: If you cannot speak in full sentences, you have left the aerobic zone and missed the cellular benefits.