Training intensity distribution

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Advanced: for experienced endurance athletes.

Elite endurance athletes do most of their training easy and a small share very hard.

Why it matters: "80/20," "polarized" and "threshold" training are popular buzzwords. Knowing what the research does and doesn't show helps you plan your week without chasing a formula.

The big picture: Polarized and pyramidal mixes both work well. Two 2024–2025 analyses found no clear winner overall; polarized may give competitive athletes a little more. What matters most is lots of easy volume plus some genuinely hard work.

What to do with this

- **Keep most of your training easy,** below your first threshold, where you can talk comfortably.
- **Include some hard work** each week, such as intervals near your maximum aerobic effort.
- **Moderate "comfortably hard" work is allowed.** Pyramidal plans include more of it than polarized plans, and both work.
- **Don't let easy days creep into moderate.** That's the most common mistake.
- **Train consistently for months.** Differences between sensible mixes are small, if they exist at all.

Go deeper

The terms:

- **Training intensity distribution (TID):** how your training time is split across easy, moderate and hard zones.
- **Three-zone model:** zone 1 is below the first threshold (easy), zone 2 is between the first and second thresholds (moderate), zone 3 is above the second threshold (hard). See "Thresholds and training zones."
- **Polarized:** mostly zone 1, a little zone 3, very little zone 2.
- **Pyramidal:** mostly zone 1, less zone 2, least zone 3.
- **Threshold:** a lot of time in zone 2.

What people believe: There's one best ratio, such as exactly 80% easy and 20% hard, that works for everyone.

What elite athletes do:

- Competitive endurance athletes training 10 to 13 times a week do about 80% of sessions at low intensity, with most of the rest as hard intervals [1].
- In athletes already training a lot, adding more high-intensity work hasn't shown convincing long-term gains [1].

What trials show:

- A 2019 meta-analysis of randomized trials found polarized training improved time-trial performance more than threshold training. It included only three trials in the main analysis, and their quality was moderate to low [2].
- In 30 recreational runners, polarized and threshold-heavy plans both improved 10K times over 10 weeks; the difference wasn't statistically significant [3].
- A 2024 meta-analysis of 17 studies and 437 athletes found race times and other performance tests came out the same with polarized and other mixes. Polarized gave a small edge in maximal oxygen uptake (VO2max) only in programs shorter than 12 weeks and in highly trained athletes [5].
- A 2025 analysis pooled the raw data of 348 athletes from 13 studies. Polarized and pyramidal training produced the same gains in maximal oxygen uptake and time-trial performance, and no model was clearly best. Competitive athletes may gain a little more maximal oxygen uptake from polarized training; recreational athletes leaned toward pyramidal, though that difference wasn't significant [6].
- A 2025 scoping review of 15 studies with 412 athletes found polarized and pyramidal plans worked best for elite and world-class athletes. In trained and developing athletes, all models, including threshold training, could work. A small amount of zone 3, at least about 6% of training, seemed important [4].

Between the lines: For most people, the big wins are enough easy volume and a little genuinely hard work. The exact split between polarized and pyramidal matters mostly at the elite level.

Reality check: Trials are small and short, and athletes often don't follow their assigned split exactly. How zones are measured differs between studies.

How sure are we: Moderate that mostly easy training with some hard work suits endurance athletes. Moderate that polarized and pyramidal mixes work about equally well; Early on whether polarized gives competitive athletes an edge.

Plan your week

1. **Count sessions, not minutes,** for a simple check: of 6 sessions, about 4 or 5 easy, 1 or 2 hard.
2. **Make hard sessions hard:** intervals near your maximum sustainable effort (see "Designing intervals").
3. **Add moderate work** as tempo runs or long-run finishes if you like a pyramidal plan.
4. **Review every 4 weeks.** If easy days feel hard, slow them down.

Sources

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