

Cycling Race

Road race, gran fondo, 100 km plus. Two in three cramps arrive in the final quarter.

Small numbers point to the sources on page 2.

1 Where cramps bite

- Across 21,460 Cape Town Cycle Tour riders, 30.5% had cramped in their cycling lifetime, 18.7% in the past year¹.
- Quads take nearly half of all cramps (47.7%). Calves and hamstrings follow¹.
- 63% of cramps hit in the final quarter of the race¹.
- Men cramp more than women (34% vs 16%), and riders over 50 most of all¹.
- Risk goes up with chronic disease, allergies, medication use and injury history. Regular weekly training goes the other way¹.

2 Cut your risk

- Train frequency: more sessions per week was protective in the largest cyclist cohort¹.
- Do not race a power you have not trained. In Ironman data, a faster than usual bike was the top cramp predictor⁴.
- Stay seated and spin the last climb; standing loads a fatigued quad hardest.
- Bike fit: saddle too high or too far back overloads calves and hamstrings.
- Cramp history is the strongest personal predictor. Plan for it, do not hope⁴.

3 When it hits

- Back off 10 to 20% and shift to an easier gear before it locks.
- Stretch on the bike: drop the heel on the downstroke for calves, stand and straighten for quads, then sit and spin.
- **Early, not late.** Take your GOAT Shot at the first twinge. In the lab a small measured shot shortened cramps to about 85 s against 134 s with water, through a mouth-to-nerve reflex³.
- Do not chug plain water as a cramp fix; hydration status did not differ in crampers⁴.
- The evidence behind this tactic is lab-based and mixed: Miller (2010) found a clear effect, later trials found a small or non-significant one⁹. What it is not: an electrolyte top-up. Test it in training, not on race day.

4 Fuel

- Carb load 10 to 12 g/kg/day for 36 to 48 h before a race over 2.5 h⁵.
- Pre-race 1 to 4 g/kg carbohydrate, 1 to 4 h before⁵.
- 60 to 90 g/h from glucose plus fructose. Cyclists in the field average only 53 g/h^{5,6}.
- Eat on the flats and descents, not on the climbs. Set a 20 min alarm.
- Higher intake means more nausea unless the gut is trained. Practise race intake on long rides⁶.

5 Fluid and salt

- Pre-load 5 to 7 ml/kg about 4 h out⁷.
- Two bottles minimum: one carb mix, one electrolyte. Sweat sodium is about 1 g per litre⁷.
- Aim to finish within 2% of start weight. In heat, plan 500 to 750 ml/h and know where the refills are⁷.
- A sodium drink is warranted for anything over 2 h⁷.

6 Race day

- Taper 8 to 14 days, volume down 41 to 60%, keep short intensity⁸.
- Bike check the night before: tyres, brakes, chain, bottles, spares, charged computer.
- Jersey pockets: gels, GOAT Shot, spare tube, phone.
- Morning: eat 3 h out, arrive 90 min early, warm up 15 min with two short efforts.
- Draft smart in the first half; the race is won in the final quarter, exactly where the cramps live.

Sources and the fine print

Every numbered claim on page 1 traces to one of these. Peer-reviewed studies and consensus statements only, no influencer opinion.

1. Pohl et al. Independent risk factors associated with a history of EAMC in 21,460 Cape Town Cycle Tour cyclists. *Braz J Phys Ther* 2026; and Univ. of Pretoria SAFER cohort, 2016 event.

2. Maughan RJ, Shirreffs SM. Muscle cramping during exercise: causes, solutions and questions remaining. *Sports Med* 2019;49(S2):115-124.

3. Miller KC et al. Reflex inhibition of electrically induced muscle cramps in hypohydrated humans. *Med Sci Sports Exerc* 2010;42(5):953-961.

4. Schwellnus MP et al. Increased running speed and previous cramps rather than dehydration or serum sodium changes predict EAMC: 210 Ironman triathletes. *Br J Sports Med* 2011;45:650-656.

5. Burke LM et al. Carbohydrates for training and competition (IOC consensus). *J Sports Sci* 2011;29(S1):S17-27.

6. Pfeiffer B et al. Nutritional intake and gastrointestinal problems during competitive endurance events. *Med Sci Sports Exerc* 2012;44(2):344-351.

7. Thomas DT, Erdman KA, Burke LM. Nutrition and athletic performance: ACSM / Academy of Nutrition and Dietetics / Dietitians of Canada position. *Med Sci Sports Exerc* 2016;48:543-568; Sawka MN et al. ACSM exercise and fluid replacement, 2007.

8. Wang Z et al. Effects of tapering on performance in endurance athletes: systematic review and meta-analysis. *PLOS ONE* 2023;18(3):e0282838.

9. Behringer M et al. Effects of TRPV1 and TRPA1 activators on the cramp threshold frequency: randomised placebo-controlled trial. *Eur J Appl Physiol* 2017;117:1641-1647; Lavender AP et al. Mouth rinsing vs ingesting pickle juice. *Appl Sci* 2021;11:12096.

GOAT Shot, plainly

A 10 mL single-serve shot of Australian organic apple cider vinegar with the mother, saltbush brine and native botanicals, in a small thin sachet that opens easily. A food, not a medicine.

The research above (Miller 2010; Behringer 2017; Lavender 2021) is what the twinge tactic on page 1 is built on. Read it and make your own call.

Test any race-day tactic in training first. That includes this one.

Pickled GOAT is a food under the Food Standards Australia New Zealand code. It is not a therapeutic good and is not intended to diagnose, treat, cure or prevent any condition. This guide is general information for healthy adults, not medical advice. If cramps are frequent, severe or happen at rest, see a sports doctor. Informed Sport and HASTA certification are stated goals and are not currently held.

HERD members only. Passed on by a mate? Join the HERD at pickledgoat.com and every BLEAT lands in your inbox. Your sign-up answers, event, distance and where you cramp, decide which BLEAT we write next. Tell us and we will bleat back.