Cycling Coach Playbook

Category: **endurance** | A research-use reference for coaches, performance staff and athletes.

WHY IT MATTERS

Grand-tour cycling is a recovery sport. Whoever recovers fastest between stages wins.

PHYSIOLOGICAL DEMANDS & COMMON INJURIES

Demands

- 20+ hr training weeks at threshold
- Mitochondrial density + VLA-max balance
- Power-to-weight optimization
- Stage-race recovery between days

Common injuries

- Patellofemoral pain
- IT band syndrome
- Saddle-area neuropathy
- Crash trauma (fractures, road rash)

KEY TRAINING PHASES & PERIODIZATION

Base — aerobic + mitochondrial. Build — threshold. Race — recovery + repair.

Phase	Primary Focus	Recovery Emphasis
Off-season	Structural strength, capacity build, address asymmetries	High — connective tissue, sleep extension, full nutrition
Pre-season	Sport-specific load, intensity ramp, skill integration	Moderate — soft tissue work, neuromuscular readiness
In-season	Performance maintenance, fixture/match recovery	Variable — turnaround-driven; protect tendons & CNS
Peak / Championships	Taper, freshness, mental load management	Restorative — sleep, HRV, soft tissue priority
Post-season	De-load, structural repair, full medical screen	Very high — connective tissue, body comp, sleep reset

COACH FOCUS

- Mitochondrial periodization (Z2 + threshold + VO2)
- Stage race recovery protocols
- UCI biological passport awareness
- Crash recovery and skin / soft-tissue triage

ATHLETE FOCUS

- Mitochondrial efficiency research (MOTS-c)
- Stage-race recovery research
- Skin and dermal repair research (GHK-Cu)
- Joint and tendon recovery research

RECOVERY RESEARCH MODEL

MOTS-c is the central peptide of interest in metabolic / mitochondrial research relevant to endurance cycling. Soft tissue and skin recovery research support post-crash and post-stage repair.

FIVE FOUNDATIONS OF A RECOVERY PROGRAM

Load monitoring as the first peptide protocol

Before considering any research compound, coaches should monitor load. GPS, jump counts, throw counts, RPE and HRV catch breakdowns earlier than any biomarker. The cheapest, safest recovery tool is reading the data you already have.

Sleep is the highest-leverage intervention

Endogenous GH secretion peaks during slow-wave sleep. Athletes sleeping <7 hours show measurable drops in tendon stiffness, reaction time and injury resistance. Optimize sleep before optimizing anything else.

Nutrition is structural

Protein at 1.6–2.2 g/kg/day, calories matched to load, and 30–60g carbs intra-session for >90 min efforts. Hydration: 6–8 mL/kg pre-event and 1.5x sweat losses post-event. Peptides build nothing without inputs.

Drug-testing literacy is non-negotiable

Most peptides researched for recovery are WADA-prohibited (S0 or S2). Coaches must know exactly which leagues test for what, and brief athletes accordingly. Research-use-only compounds are not for in-vivo athlete use without medical clearance and governing-body approval.

Periodize recovery, not just training

Map a recovery calendar against your training calendar. Tendon and ligament integrity windows differ from CNS recovery windows. The best programs schedule recovery blocks as deliberately as training blocks.

MOST-RESEARCHED COMPOUNDS FOR THIS SPORT

The peptides most frequently cited in this sport's recovery and performance research literature. All entries are research-use only. Anti-doping notices apply.

MOTS-c · metabolic

Mitochondrial-derived peptide studied for metabolic and exercise capacity.

Researched in glucose homeostasis, insulin sensitivity and aerobic capacity models. Of high interest to endurance athletes from a research perspective.

Research signals:

- AMPK activation in skeletal muscle models
- Aerobic capacity in rodent treadmill studies
- Metabolic flexibility studies

Anti-doping: WADA explicitly added MOTS-c-class mitochondrial peptides to the prohibited list under S2.

BPC-157 · recovery

Pentadecapeptide derived from a gastric protein, studied for soft-tissue repair.

Researched in tendon, ligament, gut and muscle repair models. Common in protocols studied for Tommy John–type elbow injury, hamstring strain and Achilles tendinopathy.

Research signals:

- Animal tendon transection repair models
- Gastric ulcer healing models
- Inflammation modulation in skeletal muscle research

Anti-doping: Prohibited by WADA at all times (S0 non-approved substances). All testing pools must avoid in-vivo use.

GHK-Cu · longevity

Copper-binding tripeptide studied for skin, hair and connective tissue repair.

Researched in dermal repair, collagen synthesis and antioxidant models. Relevant to skin trauma, road rash and surgical scar research.

Research signals:

- Wound healing and re-epithelialization models
- Collagen / decorin gene expression studies
- Antioxidant and anti-inflammatory research

Anti-doping: Not explicitly listed on the WADA Prohibited List, but anti-doping authorities reserve the right to test for non-approved substances under S0.

TB-500 (Thymosin Beta-4 fragment) · recovery

Synthetic fragment of thymosin β-4, studied for actin regulation and tissue repair.

Studied in models of tendon, ligament, dermal and cardiac tissue repair. Frequently paired with BPC-157 in animal repair literature.

Research signals:

- Dermal wound-healing models
- Myocardial repair models
- Tendon healing animal studies

Anti-doping: Prohibited by WADA (S2 peptide hormones / growth factors).

CJC-1295 / Ipamorelin · performance

GHRH analog + ghrelin-mimetic studied for pulsatile GH secretion.

Research-grade GH secretagogue blend studied in lean mass, sleep and recovery models.

Research signals:

- Pulsatile GH and IGF-1 modulation studies
- Sleep architecture research
- Body composition research in healthy adults

Anti-doping: Both prohibited by WADA at all times (S2 peptide hormones, GH releasing factors).

STUDY-LINKED BIBLIOGRAPHY

Selected primary sources relevant to this sport and its core research stack.

1. Chang CH et al. (2011). *BPC 157 and Standard Angiogenic Growth Factors: A Comprehensive Review of Tendon Healing*. Journal of Applied Physiology. doi:10.1152/japplphysiol.00115.2011

Takeaway: Animal model showed BPC-157 accelerated Achilles tendon-to-bone healing and improved tendon outgrowth.

2. Bock-Marquette I et al. (2004). *Thymosin β-4 promotes cardiac repair after acute myocardial infarction*. Nature. doi:10.1038/nature03000

Takeaway: Foundational study showing TB-4 promotes cell migration and cardiac repair — basis for athletic repair research.

3. Lee C et al. (2015). *The mitochondrial-derived peptide MOTS-c promotes metabolic homeostasis and reduces obesity and insulin resistance*. Cell Metabolism. doi:10.1016/j.cmet.2015.02.009

Takeaway: MOTS-c improved metabolic flexibility and exercise capacity in mouse models — central reference for endurance research interest.

4. Pickart L, Margolina A (2018). *GHK-Cu and skin regeneration: a review*. International Journal of Molecular Sciences. doi:10.3390/ijms19071987

Takeaway: Review of GHK-Cu's role in collagen synthesis, wound healing and anti-inflammatory pathways relevant to athletes.

5. Meinhardt U et al. (2010). *The effects of growth hormone on body composition and physical performance in recreational athletes*. Annals of Internal Medicine. doi:10.7326/0003-4819-152-9-201005040-00005

Takeaway: Showed measurable changes in body composition and sprint capacity following GH administration in recreational athletes — context for GH-axis peptide research.

6. Sikiric P et al. (2022). *Pentadecapeptide BPC 157 and the central nervous system*. Neural Regeneration Research. doi:10.4103/1673-5374.314287

Takeaway: Comprehensive review of BPC-157's CNS and peripheral repair signaling — basis for soft-tissue research relevant to nearly every sport.

COMPLIANCE & SAFETY NOTICE

All content in this playbook is published for laboratory / in-vitro research context only. Nothing in this document is medical advice, performance-enhancement advice, or a recommendation for in-vivo athlete use. Most peptides cited here are prohibited by WADA, USADA, NCAA, MLB, NFL, NBA, FIFA, UCI, FINA, ITF and similar bodies. Athletes in any testing pool must consult their governing body and a licensed physician before any in-vivo use. Peptide Logix sells research-use-only materials with HPLC-verified purity and a Certificate of Analysis. They are not sold as medicines, supplements, or performance-enhancing drugs.

Peptide Logix · peptidelogix.shop · taylor_witt1@yahoo.com · 714-856-4341