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The CFT Advantage

The Complete Scientific Case: An Overview of the CFT Advantage Series

An Overview of the CFT Advantage Series

SERIES OVERVIEW

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Abstract

The CFT Advantage Series comprises eleven papers covering the science, manufacture, safety and applications of Cell-Free Therapy (CFT). This overview draws them into a single argument written for medical and performance teams in elite sport. CFT is an autologous, cell-free preparation of an individual's own concentrated secretome – the extracellular vesicles, growth factors and cytokines that their cells release under controlled conditioning – banked from a single blood draw and delivered as a planned course. It is designed to support the body's normal regenerative signalling rather than to introduce anything foreign. The sections that follow set out what CFT is and how it works, what its signalling supports in recovery, where it sits relative to platelet-rich plasma, its position under the 2026 World Anti-Doping Agency framework, how it is manufactured and quality-controlled, the single-draw banking model that suits a long competitive season, its safety profile, and its relevance to protecting availability and career runway. Each section distils a full paper in the series, which readers can consult for the detailed evidence and references.

What this paper does not claim

This paper does not claim that CFT, or any other whole-secretome preparation, treats, prevents, cures, or mitigates any specific disease. It does not claim that whole-secretome superiority over single-component biologics has been established by definitive head-to-head clinical trials in humans; the case rests on the biology of multi-component signalling and on supporting pre-clinical comparative work. The discussion of recombinant growth factors, purified exosomes, and platelet-rich plasma identifies categorical limitations of those approaches in defined contexts; it does not deny that each has appropriate clinical applications. References to internal CFT characterisation are representative ranges, not regulatory release specifications.

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1. The Proposition: What Cell-Free Therapy Is

Cell-Free Therapy is an autologous, cell-free biological preparation built from an athlete's own blood. It begins with a single peripheral blood draw of approximately 150 mL. In a controlled laboratory, the white blood cells are exposed to a defined environmental challenge that prompts them to release their secretome: the mixture of extracellular vesicles, growth factors, cytokines and signalling molecules that cells use to coordinate repair. The cells are then removed. What is banked and later administered is that secretome, not the cells themselves.

Two features define the approach. First, it is autologous: every preparation is made from, and returned to, the same person, so nothing foreign is introduced. Second, it is cell-free: because no living cells are administered, the preparation cannot replicate, differentiate or engraft. The intent is not to override the body but to supply a concentrated dose of its own signalling molecules, supporting the normal biological processes of recovery and tissue maintenance.

This distinction – supporting the body's own signalling rather than introducing an engineered agent – runs through the whole series. It shapes the safety profile, because there are no living cells to behave unpredictably; the anti-doping position, because the active molecules are the athlete's own; and the way the therapy is delivered, because a single draw can be banked and drawn on over time.

A single draw yields enough characterised material for a planned course of infusions delivered over months, with the remainder held in cryopreserved storage. The economics and logistics follow from this: the collection and characterisation happen once, and the resulting supply can be planned into a competitive calendar. The banking model, the anti-doping position, the manufacturing controls and the underlying science are the subjects of the sections that follow.

2. How the Body Signals, and What CFT Delivers

2a. Cells Communicate Through the Secretome

Cells do not work in isolation. Across every tissue, they maintain a constant biochemical conversation that coordinates growth, repair, immune balance and metabolism. Signals travel locally between neighbouring cells (paracrine), back to the releasing cell itself (autocrine), and at distance through the circulation (endocrine). Much of this conversation is carried by the secretome:

the complete set of soluble proteins, lipids, metabolites and membrane-bound vesicles that cells release into their surroundings.

Extracellular vesicles are a central part of this system. These nanometre-scale carriers – including exosomes and microvesicles – package proteins, lipids and nucleic acids and deliver them to recipient cells, working alongside soluble growth factors and cytokines rather than in place of them. CFT is built directly on this biology: rather than introducing a synthetic drug, it concentrates and delivers the same signalling system the body already uses to coordinate its own repair.

The vesicles themselves are diverse. They differ in size and origin – from smaller exosomes formed within the cell to larger microvesicles shed from its surface – and they carry proteins, lipids and regulatory nucleic acids selected by the releasing cell. It is this cargo, delivered to recipient cells, that makes vesicles an efficient way for the body to move complex, coordinated instructions rather than single molecules.

2b. Why the Whole Secretome, Not a Single Factor

Tissue repair is a coordinated, multi-phase response in which vesicles, growth factors, cytokines and lipid mediators act in concert, each at the right time and in the right relationship to the others. Approaches that isolate a single recombinant factor gain mechanistic clarity but face recurring limits: short pharmacokinetic half-lives, missing signalling context, an inability to address the redundancy built into biological pathways, and the need for higher exposure to produce an effect. Delivering one factor is like sounding a single instrument where the body expects the whole orchestra.

CFT preserves the broader secretome that the donor cells release under controlled conditioning, and it does so from autologous starting material. The argument, developed in full in Paper 06, is that the coordinated mixture carries the context a single factor lacks, which is why the complete secretome is the more faithful match to how repair actually proceeds.

2c. Personalised by Nature

The immune system is designed to distinguish self from non-self. When a preparation contains donor material, the recipient's immune system recognises it as foreign, which can trigger clearance, inflammation and sensitisation. Because CFT is made from and returned to the same individual, it avoids this donor-recipient mismatch by design.

The advantage extends beyond safety. Every person's cellular biology is distinct, shaped by immune history, inflammatory phenotype, age, genetic background and metabolic state. The secretome produced by an athlete's own conditioned cells reflects that individual's physiology, so the preparation is personalised at the molecular level without any additional engineering. Paper 07 sets out this case in detail.

3. What the Signalling Supports in Recovery

For a performance team the practical question is what this signalling actually does. The molecules concentrated in CFT participate in the same processes that govern recovery from training load and injury. Three are worth highlighting.

The first is the resolution of inflammation. After microtrauma, an initial inflammatory phase is necessary, but recovery depends on that phase resolving cleanly rather than persisting. Secretome signalling contributes to the transition from the inflammatory phase toward repair. The second is macrophage behaviour: macrophages shift between a pro-inflammatory state and a reparative, tissue-supportive state, and paracrine signals help drive that shift toward repair. The third is angiogenesis and microvascular recovery, where factors such as VEGF and FGF-2, present as part of the autologous secretome rather than added as purified agents, support the restoration of blood supply that healing tissue requires.

These are normal biological processes; CFT is intended to support them, not to replace or force them. The relevant biology is developed across Papers 01 and 09.

These processes have characteristic timelines. The inflammatory phase after load or injury is measured in days, the reparative and remodelling phases in weeks to months. CFT is positioned to support the signalling that carries tissue from one phase to the next; it does not shorten biology to order, and expectations should be set around the natural arc of recovery rather than an instant effect.

4. Beyond Platelet-Rich Plasma

Platelet-rich plasma (PRP) is the most widely adopted autologous regenerative therapy in sport, and its clinical familiarity is a genuine advantage: performance teams already understand blood-derived, autologous treatment. PRP concentrates platelets from whole blood and relies on the growth factors they release on activation. It is useful, but it is constrained by a narrow factor diversity, a short factor half-life, local-injection-only delivery, single use per draw, and considerable variability between operators and devices.

CFT shares PRP's autologous, blood-derived logic but is designed as a broader and more controlled preparation. It carries a wider secretome profile and an enriched vesicle fraction; it is manufactured in a laboratory with batch characterisation rather than prepared at the point of care; and a single draw supports a multi-dose course. Paper 03 positions CFT as the next step in the same lineage physicians already trust, not a departure from it.

A related point concerns how such products are judged. Some allogeneic exosome products are marketed on raw particle counts, advertising trillions of particles per dose. Particle number is a poor proxy for biological activity: high counts can be achieved through industrial cell expansion and pooled donors, and mismatched allogeneic particles are cleared rapidly by the recipient's immune

system. An autologous preparation may deliver a smaller particle volume of greater biological relevance, because it carries the full, self-matched secretome rather than an isolated fraction. Paper 05 makes this case.

Set against the alternatives, the trade-offs are clear. Platelet-rich plasma is familiar and autologous but narrow and single-use. Autologous stem cell and bone-marrow approaches introduce living cells, with the collection burden and the cell-specific risks that implies. Allogeneic exosome products offer scale and off-the-shelf convenience but carry donor material and the immune-matching and provenance questions that come with it. CFT aims to combine the autologous, self-matched safety logic of PRP with a broader, laboratory-characterised secretome and a bankable, multi-dose supply, without administering living cells.

5. Anti-Doping: The Compliance Case for Elite Sport

For any team operating under the World Anti-Doping Agency (WADA) framework, the first question about a regenerative preparation is its anti-doping status. It is worth being precise about how that status is determined. WADA writes the Code and the annual Prohibited List and handles oversight and appeals, but it does not rule on individual cases. Those determinations are made by national anti-doping organisations – for example UK Anti-Doping – through their Therapeutic Use Exemption committees and advisory routes. An athlete applies to their national body, not to WADA, and each assessment is made case by case.

Against the published 2026 Prohibited List, CFT occupies a comparatively defensible position, provided the preparation is confirmed to be acellular, autologous, free of red blood cells, free of any added prohibited substances, and administered within permitted route and volume limits. The relevant parts of the List are the M1 prohibition on blood and blood-component manipulation, the M2.2 limit on intravenous infusions of more than 100 mL per 12-hour period, the M3 prohibition on gene and cell doping (expanded in 2026 to include cell components such as mitochondria and ribosomes, where performance-enhancing), and the S2 restriction on added growth factors and hormones.

CFT's design speaks to each. It contains no living cells or cell components; it is autologous and adds no exogenous growth factors or hormones, so the growth factors present are the athlete's own endogenous output rather than an added substance; and a typical infusion volume sits well below the M2.2 threshold. A further category, S0 (Non-Approved Substances), turns on whether CFT is read as a pharmacological substance or as an autologous procedure of the kind that governs PRP and autologous stem cells. Established practice treats such preparations as procedures, judged on whether anything prohibited has been added and on whether the intent is restorative rather than performance-enhancing. That characterisation is not settled by any single global pronouncement; it is confirmed case by case by the athlete's national anti-doping organisation.

The practical implication is straightforward: confirm status with the relevant national anti-doping organisation and, where required, the sport's federation before treatment, and retain the documentation – collection date, processing parameters, release results and infusion dates – that supports the compliance position. Autologous, additive-free regenerative preparations used to restore rather than enhance function have been accommodated within this framework before, and CFT has itself been taken through case-by-case review by national anti-doping organisations. Paper 09 sets out the full analysis.

In practice this is a short due-diligence sequence before any treatment: confirm the preparation's status with the athlete's national anti-doping organisation; where the sport requires it, confirm with the federation as well, since some apply rules stricter than the List; obtain a written description confirming the preparation is acellular, autologous and free of added growth factors, hormones or donor material; and retain the full treatment record for the duration relevant to the athlete's testing window.

6. From Draw to Batch: Manufacture and Quality Control

CFT is manufactured from a single 150 mL venous draw, well below the volume of a standard blood donation and performed in minutes by a phlebotomist or trained clinician. The draw does not require fasting, only normal hydration. The blood is transported under temperature control to a controlled laboratory, where the white blood cells are conditioned to release their secretome and are then removed.

Each batch is characterised before release. The quality-control programme confirms identity, composition and concentration ranges, and applies defined contamination criteria, so that what is administered is a known, documented preparation rather than an unstandardised one. Every preparation is traceable to the individual throughout, by a unique laboratory identifier that links the banked material to the person it came from.

On regulation, CFT is positioned as an autologous, cell-free preparation that supports the body's normal biological function. It is not presented as a drug that diagnoses, treats or cures disease, and nothing here implies review, clearance or approval by any medicines regulator. Requirements vary by jurisdiction and depend on intended use, processing, route of administration and the claims made. Paper 02 walks through the full workflow and the regulatory framing.

7. One Draw, a Season of Availability

The banking model is what makes CFT suited to a long season. One collection produces a characterised, cryopreserved supply that supports a planned course: the standard protocol is three

infusions, three months apart, followed by further infusions as required, all drawn from the same batch while material remains.

Three consequences matter for a performance programme. First, comparability: because every dose comes from one draw, the infusions are consistent with one another rather than varying batch to batch. Second, planning: the timing of the course can be arranged around the competitive calendar rather than dictated by the need to collect fresh material each time, so a banking draw taken at a quiet point can support availability across the months that follow. Third, continuity: the model supports an ongoing relationship between athlete and clinician, with each infusion a point of reassessment, rather than a series of one-off procedures. Paper 08 develops the model in full.

8. Safety: No Living Cells, No Living-Cell Risk

Cell-based regenerative therapies carry risks rooted in the properties of living cells: tumour formation from pluripotent or extensively expanded cells, ectopic tissue growth from aberrant differentiation, rejection of foreign cells, and vascular obstruction from injected cell suspensions. These are not hypothetical; the published literature documents such outcomes following various forms of stem cell intervention at clinics worldwide.

CFT removes the living-cell behaviours that drive those concerns. Because no living cells are administered, the preparation cannot replicate, differentiate or engraft, and the autologous, cell-free composition avoids the donor-recipient mismatch behind allogeneic rejection. This is the safety argument set out in full in Paper 11: the risks that matter most in cell therapy are, by design, the ones CFT does not carry. As with any intervention, this does not remove the need for sound clinical practice and proper documentation, but the category of risk specific to living cells is absent.

The specific harms on record make the point concrete. The published literature includes loss of vision following injection of autologous fat-derived stem cells around the eye, donor-derived tumour growth after fetal neural stem cell transplantation, proliferative spinal lesions after unregulated stem cell procedures, and kidney lesions after percutaneous stem cell injection. Each traces to the behaviour of living cells – proliferation, differentiation, engraftment or vascular obstruction – which a cell-free preparation does not introduce.

9. Career Runway and the Long Arc

One feature of ageing, and of the accumulated load of a long career, is a gradual decline in the coordination and responsiveness of cellular signalling. The paracrine machinery that cells use to speak to one another becomes less coordinated over time, tissues respond more slowly, and low-grade background inflammation rises. CFT is designed to support that signalling environment with a concentrated, autologous, conditioned secretome derived from the individual's own cells.

For an elite athlete the relevant framing is not anti-ageing but durability: supporting the body's own maintenance and recovery signalling across the long arc of a career, and protecting the availability that underpins a player's value. Paper 10 develops this case, drawing on the wider scientific literature on age-related signalling decline, and is careful to distinguish it from more speculative young-donor-plasma approaches.

This framing draws on a substantial body of research into circulating factors and tissue ageing, including the parabiosis literature on how the systemic signalling environment influences repair. CFT does not attempt to import youth from a donor; it concentrates the individual's own signalling molecules, which is both the more conservative approach and the one consistent with the autologous, self-matched logic of the rest of the series.

10. Applying CFT in a Performance Programme

CFT is intended to sit alongside, not replace, the strength, conditioning and medical work a performance team already does. Its structure lends itself to several situations common in elite sport: supporting recovery through congested fixture periods; supporting the long rehabilitation arc after a structural injury, where comparable infusions over months match the shape of the return; and supporting availability during sustained high-load phases of a season. Because the whole course comes from one banked draw, treatment can be planned into the calendar rather than improvised.

None of this displaces clinical judgement. Candidate selection, timing and integration with an athlete's wider care plan remain decisions for the medical and performance staff, and, as set out above, anti-doping status should be confirmed with the relevant national body before any treatment. The value of CFT in this setting is that it offers a controlled, autologous, documentable option that fits the rhythm of a competitive season.

11. Questions Performance Teams Ask

Does the draw require any special preparation? No. The collection is a routine venous draw and does not require fasting, only good hydration.

What is actually administered? The athlete's own concentrated secretome – the extracellular vesicles, growth factors and cytokines released by their own cells under controlled conditioning. There are no living cells, no donor material and no added growth factors or hormones.

How is the material stored, and how long does it last? The characterised batch is cryopreserved and drawn on for the planned course and any further infusions while material remains. Long-term cryopreservation of biological material is a well-established clinical technology.

Can treatment be timed around fixtures and testing windows? Yes. Because the whole course comes from one banked draw, infusions can be planned into the calendar rather than dictated by fresh collection, and the per-infusion details should be recorded in the athlete's compliance file.

Is a Therapeutic Use Exemption required? On a plain reading of the 2026 framework, CFT would not appear to require an exemption on intravenous-volume grounds alone, but status should always be confirmed case by case with the national anti-doping organisation, whose determination is definitive.

How does CFT sit alongside PRP and existing treatments? It shares PRP's autologous, blood-derived logic but delivers a broader, laboratory-characterised preparation and a multi-dose course. Selection, timing and integration with an athlete's wider care remain matters of clinical judgement for the medical team.

12. The Series at a Glance

Each of the eleven papers in the CFT Advantage Series can be read on its own. This overview draws on all of them; the list below is a guide to where the detailed evidence sits.

Paper 01, The Science of Cellular Communication – how cells signal through the secretome and extracellular vesicles. Paper 02, From Blood Draw to Biology – the manufacturing workflow, quality control and regulatory framework. Paper 03, Beyond PRP – how CFT extends the logic of platelet-rich plasma. Paper 04, Crossing the Blood-Brain Barrier – the mechanisms and limits of vesicle-mediated transit. Paper 05, Quality Over Quantity – why particle count is the wrong measure of potency. Paper 06, The Whole Secretome Advantage – the case for the complete signalling mix over single factors.

Paper 07, Personalised by Nature – the autologous advantage over allogeneic products. Paper 08, Bank Once, Treat Many – the single-draw, multi-dose banking model. Paper 09, The Athlete's Edge – CFT and the 2026 WADA framework. Paper 10, The Longevity Case – supporting age-related and load-related signalling decline. Paper 11, No Living Cells, No Living-Cell Risk – the safety case for cell-free preparations.

13. In Summary

Cell-Free Therapy offers a medical and performance team a controlled, autologous, cell-free option built on the body's own signalling. It is designed to support normal recovery and maintenance; it occupies a defensible position under the 2026 anti-doping framework when properly confirmed with the national body; it is manufactured to a documented standard; its single-draw banking model fits the rhythm of a competitive season; and it carries none of the risks specific to living cells. The eleven papers behind this overview set out the evidence in full, and are available on request.

A note on what this overview does not assert. It does not claim that CFT diagnoses, treats, cures or prevents any disease; it does not claim regulatory approval; and it does not claim a formal anti-doping ruling, because those are made nationally and case by case. What it does set out is a coherent, autologous, cell-free approach to supporting the body's normal recovery and maintenance signalling, and the evidence base that the eleven papers draw upon.

Disclaimer: Individual results vary. Cell-Free Therapy is not intended to diagnose, treat, cure, or prevent any disease. The information in this paper is provided for educational purposes and does not constitute medical advice. CFT supports the body's normal biological function through autologous, cell-free biological preparations.

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Contact: Tristan Lewinsohn, tristan@wellbeingint.com