

Practical Microcycle Monitoring Framework Using Firstbeat

Created by Sport Scientist Dr James Malone, this guide provides a simple structure for how a team can use recovery monitoring (QRT), fitness testing (SMFT), and internal load management to guide decision-making during a 7-day microcycle.

Why Internal Load Often Fails to Influence Planning



In many environments, internal load is collected every session. Reports are generated automatically. Dashboards are reviewed briefly.

But the training plan rarely changes because of it.

The problem is not the technology. It is intent.

External load tells you what the player did. Internal load tells you what it cost. Adaptation happens at the internal level, not the external one.



STIMULUS VS COST



External Load =
What the player did

Internal Load =
What it cost

Adaptation occurs at the internal level



One hard session does not tell the story. A single spike in TRIMP should not trigger panic. Instead, look at three to five day trends. Stability versus deviation is what matters.

The key question after every session is this.

What was the cardiovascular intent, and did the internal load match it?

If MD-3 was designed to be a high intensity stimulus, did the data reflect that? If not, what changes tomorrow?

Without anchoring metrics to intent, internal load is just information. Not direction.

MD+1 and MD+2: Understanding Recovery Direction

QUICK RECOVERY TEST (QRT) IN CONTEXT

Suppression Is Normal on MD+1

- Match strain high
- QRT suppressed expected
- Not a red flag by default



The Quick Recovery Test (QRT) is often misunderstood.

Suppression on MD+1 is normal. Match strain is high. A reduced score the following morning is expected and not a red flag by default.

The more important question comes on MD+2. Is recovery moving in the right direction?

If MD+1 is suppressed and MD+2 improves meaningfully, you can usually proceed with the planned intensity progression.

If MD+1 is suppressed and MD+2 shows no meaningful improvement, that is where you control volume and protect intensity.

QRT should be treated as a trend indicator, not a traffic light.

It is the direction that matters, not the colour of a single score.

RECOVERY ON MD+2

Key Question: Is recovery moving in the right direction?

Scenario A:

MD+1: Suppressed

MD+2: Improved vs MD+1

→ Proceed with planned intensity progression



Scenario B:

MD+1: Suppressed

MD+2: No meaningful improvement

→ Control volume, protect intensity



QRT is a trend indicator, not a traffic light



Starter vs Non-Starter Balance

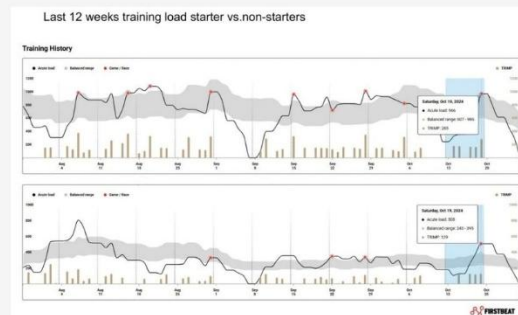
STARTER VS NON-STARTER BALANCE

Compensatory sessions should aim to:

- Close internal load gap
- Replicate match-level cardiovascular strain
- Maintain aerobic stimulus continuity

Not just:

“Top up high-speed distance”



One of the biggest internal load gaps across a season is between starters and non-starters.

Compensatory sessions should aim to close the internal load gap, replicate match level cardiovascular strain, and maintain aerobic stimulus continuity.

Too often, we focus purely on topping up high speed distance. That may address external load deficits but ignore the internal cost required to maintain aerobic conditioning.

If the match is your primary stimulus for starters, you must recreate something physiologically comparable for non-starters across the week.

Otherwise, deconditioning is gradual and often unnoticed until performance drops.

Are We Ready to Push on MD-4 and MD-3?

MD-4/MD-3 LOADING

Can we expose them to meaningful high-intensity stimulus without degrading quality?

Combine:

- Match strain
- Cumulative TRIMP
- QRT direction

Decision:

- Push/Modify

	Typical values	% of game values
Load (TRIMP)	150-180	55-70%
Intensity (4min Trimp/min)	2.6-3.2	80-100%
Aerobic TE	3.5-4.0	
Anaerobic TE	3.5-4.0	

These are typically your main loading days.

The question is not simply can we push. It is can we expose players to meaningful high intensity stimulus without degrading quality.

This requires combining match strain, cumulative TRIMP across the week, and QRT direction.

If readiness is high, full exposure makes sense. For example, 3 x 3-minute-high intensity bouts with equal rest in a 6v6 plus two neutral formats.

If readiness is moderate, maintain intensity but reduce volume. Two bouts instead of three. Increase rest if needed.

Reduce training volume, not intent.

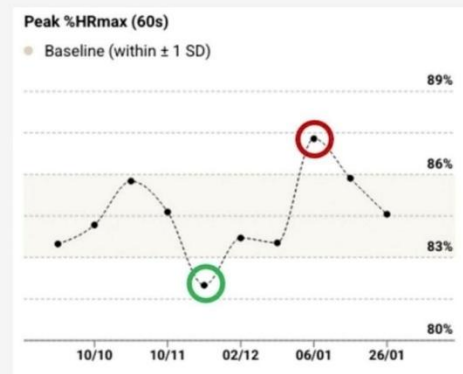
This protects intensity quality, avoids stacking fatigue, and maintains the stimulus you are actually trying to create.

Not every suppressed score requires intervention. Trust trends. Avoid overcorrection.

Using SMFT to Distinguish Fatigue from Deconditioning

SUB-MAXIMAL FITNESS TESTING (SMFT)

- Efficiency at a fixed workload
- HR drift upward → **fatigue**
- Gradual downward trend → **adaptation**
- Persistent elevation → **deconditioning**



Submaximal fitness testing, SMFT, provides another layer of clarity.

At a fixed workload, an upward heart rate drift often reflects fatigue. A gradual downward trend over time reflects positive adaptation. A persistent elevation with stable recovery scores may indicate deconditioning.

The interaction between SMFT and QRT is powerful.

Elevated SMFT and suppressed QRT usually points to acute fatigue. Manage short term volume.

Elevated SMFT with stable QRT may indicate insufficient stimulus over time. Rebuild aerobic exposure.

Reduced SMFT at the same workload is a sign of improved efficiency. Maintain or progress the stimulus.

Consistency beats perfect timing. Test at the same point in the week, for example MD-1 or at the start of MD-4, and always before training.

From Insight to Microcycle Clarity

ASSIGN PHYSIOLOGICAL INTENT

Every Day Has a Cardiovascular Objective

- MD+1 – Recovery
- MD-3 – Intensity
- MD-2 – Controlled
- MD-1 – Priming

Typical values for MD-4 and MD-3 "HARD" sessions

	Typical values	% of game values
Load (TRIMP)	150-180	55-70%
Intensity (4min Trimp/min)	2.6-3.2	80-100%
Aerobic TE	3.5-4.0	
Anaerobic TE	3.5-4.0	

Typical values for MD-2 and MD-1 "MODERATE" sessions

	Typical values	% of game values
Load (TRIMP)	50-70	20-25%
Intensity (4min Trimp/min)	2.3-2.5	85-95%
Aerobic TE	2.0-2.5	
Anaerobic TE	2.0-2.5	



Every day in the microcycle should have a clear cardiovascular objective.

For example:

- MD+1 is recovery
- MD-3 is intensity
- MD-2 is controlled
- MD-1 is priming

Match day anchors the week.

From there, group players into readiness buckets. Ready to push. Push but control volume. Monitor closely. Recovery priority.

Adjust selectively, not universally.

During congested fixture periods, track cumulative strain rather than single sessions. Protect intensity, cut volume, and prioritise freshness over fitness.

IMPACT TRAINING DECISIONS

● Ready to Push

Match load moderate
QRT trending upward
Controlled cumulative Training Load
Stable SMFT trend

Action: Full session exposure.

● Push but Control Volume

Match load high
QRT improving but not fully restored
Elevated 48h load density

Action: Maintain intensity, reduce bouts or density.

● Monitor Closely

Disproportionate Training Load
Flat or suppressed QRT trend
Elevated HR response during training

Action: Modify exposure, adjust rest, remove final bout.

● Recovery Priority

Persistent suppressed QRT
High cumulative load
Negative SMFT drift
Signs of maladaptation

Action: Reduce exposure significantly, recovery emphasis.



Final Take Home Points

- Use match day as the starting point for microcycle planning.
- Track recovery direction across the week, not isolated scores.
- Protect intensity by adjusting exposure, not abandoning stimulus.
- Use QRT and SMFT trends together to distinguish fatigue from adaptation.
- Move from reactive monitoring to proactive design.
- Internal load only becomes meaningful when it shapes tomorrow's session.

That is how you turn data into clarity.

Watch Our Full Webinar Series with Jame Malone to Learn More:

[Turning Internal Load into Microcycle Clarity](#)

[Beyond the Numbers: Heart Rate Insights for Smarter Recovery in Football](#)

[Pre-Season Planning in Soccer: Why Heart Rate Still Matters](#)

[Bridging the Gap: Supporting Youth-to-First Team Transition with Internal Load Monitoring](#)

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