



FREE GUIDE

Contact sports

Rugby, football and martial arts: muscle, recovery, vitamin D and iron.

Blood tests for contact sports: rugby, football, martial arts

Contact and match days move your muscle markers for days. A pre-season baseline, taken away from games and weight cuts, gives you numbers to compare with.

It can

- ✓ Show how much contact raises your CK, against your own baseline
- ✓ Show your vitamin D as winter comes in
- ✓ Give you a pre-season baseline to compare the season with

It cannot

- ✗ Assess a head injury: concussion is assessed by a clinician, not by a blood test
- ✗ Clear you to play: that is a clinical decision
- ✗ Read a high CK as an injury: it rises with a normal match

WHY IT MATTERS

01

Contact hurts the muscle, and CK shows how much

After rugby matches, CK peaked 24 hours later, and the peak rose with the number of tackles. It is the marker that moves most in contact sport.^[1]

02

Recovery from a match takes more than 72 hours

In a review of 77 studies of football players, CK, hamstring strength and muscle soreness were still changed 72 hours after the match. A test the day after a game shows the game, not your baseline.^[2]

03

UK winters lower players' vitamin D

In Premier League players, vitamin D fell from August to December, and 65% were under 50 nmol/L in winter. In another UK study, 62% of professional athletes were under 50 nmol/L in winter.^[3, 4]

WHY IT MATTERS

04

In martial arts, making weight changes the body and the blood

About half of combat sport athletes lose weight fast, with methods such as diuretics, laxatives, plastic suits and saunas that harm performance and health. A test in the middle of a weight cut is not your baseline.^[5]

05

A knock to the head is for a clinician, not a blood test

Blood markers for concussion are still research tools, without enough evidence for clinical use. If you have had a knock to the head, follow your club's concussion process and see your GP.^[6, 7]

THE TESTS

What usually makes sense, and when to repeat it

TEST	WHY	WHEN TO REPEAT
CK (creatine kinase)	The muscle enzyme. Tackles and contact raise it, and it can stay up for three days after a match. It is the fatigue marker of team sport, read against your own value. ^[1, 2, 8, 9]	Pre-season and mid-season, always at least 72 hours after a match, at the same point in the week.
Urea and kidneys (creatinine, eGFR)	Kidney function and training load. Test away from a weight cut, so the result shows your usual state. ^[5, 10]	With your season panel.
Vitamin D, 25(OH)D	Your vitamin D level. Many UK players are low by December. ^[3, 4, 11]	Late autumn or winter; after supplements, as your GP advises.
Ferritin and full blood count	Iron stores and red cells. Women who play, and anyone on a restrictive diet, are at higher risk of low iron. ^[12, 13]	About twice a year.
High-sensitivity CRP	Inflammation. A match raises it for a short time, so it is read with ferritin and away from game day. ^[2, 14]	With your ferritin.

What to do with your result

Your result arrives in your account, with reference ranges. A value outside the range, or a symptom with a normal result, is a conversation with your GP: treatment and supplements are their call. Repeat the same test later to compare.

SOURCES

1. Takarada Y. Evaluation of muscle damage after a rugby match with special reference to tackle plays. *Br J Sports Med.* 2003;37:416-419. doi:10.1136/bjsm.37.5.416. PMID 14514532
2. Silva JR, Rumpf MC, Hertzog M, et al. Acute and Residual Soccer Match-Related Fatigue: A Systematic Review and Meta-analysis. *Sports Med.* 2018;48:539-583. doi:10.1007/s40279-017-0798-8. PMID 29098658
3. Morton JP, Iqbal Z, Drust B, Burgess D, Close GL, Brukner PD. Seasonal variation in vitamin D status in professional soccer players of the English Premier League. *Appl Physiol Nutr Metab.* 2012;37:798-802. doi:10.1139/h2012-037. PMID 22554144
4. Close GL, Russell J, Cobley JN, et al. Assessment of vitamin D concentration in non-supplemented professional athletes and healthy adults during the winter months in the UK: implications for skeletal muscle function. *J Sports Sci.* 2013;31:344-353. doi:10.1080/02640414.2012.733822. PMID 23083379
5. Franchini E, Brito CJ, Artioli GG. Weight loss in combat sports: physiological, psychological and performance effects. *J Int Soc Sports Nutr.* 2012;9:52. doi:10.1186/1550-2783-9-52. PMID 23237303
6. McCrear M, Meier T, Huber D, et al. Role of advanced neuroimaging, fluid biomarkers and genetic testing in the assessment of sport-related concussion: a systematic review. *Br J Sports Med.* 2017;51:919-929. doi:10.1136/bjsports-2016-097447. PMID 28455364
7. Tabor JB, Brett BL, Nelson L, et al. Role of biomarkers and emerging technologies in defining and assessing neurobiological recovery after sport-related concussion: a systematic review. *Br J Sports Med.* 2023;57:789-797. doi:10.1136/bjsports-2022-106680. PMID 37316184
8. Hecksteden A, Skorski S, Schwindling S, et al. Blood-Borne Markers of Fatigue in Competitive Athletes - Results from Simulated Training Camps. *PLoS One.* 2016;11:e0148810. doi:10.1371/journal.pone.0148810. PMID 26891051
9. Hecksteden A, Pitsch W, Julian R, et al. A New Method to Individualize Monitoring of Muscle Recovery in Athletes. *Int J Sports Physiol Perform.* 2017;12:1137-1142. doi:10.1123/ijspp.2016-0120. PMID 27967274
10. Haller N, Behringer M, Reichel T, et al. Blood-Based Biomarkers for Managing Workload in Athletes: Considerations and Recommendations for Evidence-Based Use of Established Biomarkers. *Sports Med.* 2023;53:1315-1333. doi:10.1007/s40279-023-01836-x. PMID 37204619
11. Farrokhyar F, Tabasinejad R, Dao D, et al. Prevalence of vitamin D inadequacy in athletes: a systematic-review and meta-analysis. *Sports Med.* 2015;45:365-378. doi:10.1007/s40279-014-0267-6. PMID 25277808
12. Clénin G, Cordes M, Huber A, et al. Iron deficiency in sports - definition, influence on performance and therapy. *Swiss Med Wkly.* 2015;145:w14196. doi:10.4414/smw.2015.14196. PMID 26512429
13. Sim M, Garvican-Lewis LA, Cox GR, et al. Iron considerations for the athlete: a narrative review. *Eur J Appl Physiol.* 2019;119:1463-1478. doi:10.1007/s00421-019-04157-y. PMID 31055680
14. Pedlar CR, Bruognara C, Bruinvels G, Burden R. Iron balance and iron supplementation for the female athlete: A practical approach. *Eur J Sport Sci.* 2018;18:295-305. doi:10.1080/17461391.2017.1416178. PMID 29280410



Scan for the full page, the tests that cover these markers, a short video and the guided check-up.

bpr.clinic/blood-tests/for/contact-sports

General information, not personal medical advice. Talk to your GP about your own situation. Questions: hello@bpr.clinic or message us in the BPR app.

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