


# Infographic. COVID-19 RT-PCR testing for elite athletes

Alan Rankin <sup>1,2</sup>, Andrew Massey <sup>3</sup>, Éanna Cian Falvey <sup>4,5</sup>, Todd Ellenbecker,<sup>6</sup> Peter Harcourt,<sup>7</sup> Andrew Murray <sup>8,9</sup>, Denis Kinane,<sup>10</sup> Bert Niesters,<sup>11</sup> Nigel Jones,<sup>12</sup> Rhodri Martin,<sup>13,14</sup> Michael Roshon,<sup>15</sup> Michael Edmund David McLarnon <sup>16</sup>, James Calder,<sup>17</sup> Dionisio Izquierdo,<sup>18</sup> Babette M Pluim <sup>19,20</sup>, Niall Elliott <sup>21</sup>, Neil Heron <sup>22</sup>


## COVID-19 RT-PCR Testing for Elite Athletes


### Recommendations for elite sport\*


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**Key symptoms of COVID-19**


  
High temperature


  
New continuous cough


  
Loss of taste or smell

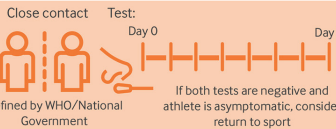
  
Unexplained fatigue

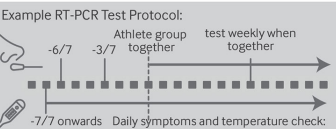
- 1.** Consider forming an expert group to aid in the interpretation and give advice on any unusual or unexpected results. The group should liaise with local public health officials to the sporting event.

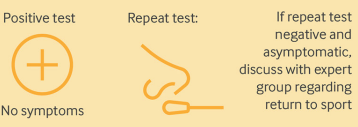

- 2.** Ensure the quality of the test; The test should be sensitive and specific for COVID-19. The use of the test should be in agreement with local public health authorities (PHA).



- 3.** Testing is only an adjunct to preventative measures, which should be implemented at all times in the elite sporting environment. Minimise social contacts.



- 4.** Considerations for close contacts of confirmed positive cases - quarantine & monitor daily temp/symptoms. Consider RT-PCR to test 'out' of quarantine (e.g. day 7) if local PHA in agreement.

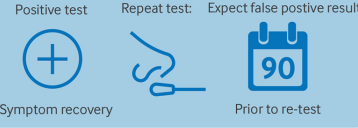

- 5.** Prior to an athlete gathering, consider performing 2 RT-PCR swabs e.g. at 3 and 6 days prior to the event. Test 48 hours before the event and then weekly during the event.



- 6.** For an asymptomatic athlete who tests positive for COVID-19 in screening, consider an immediate retest and immediate repeating testing of the initial sample. Correlate the test result with the symptoms and the pre-test probability, as well as considering antibody testing.


- 7.** Interpret the result with the pre-test probability. If the athlete has COVID-19 symptoms, RT-PCR test should be positive. If symptoms present and test is negative, repeat test within 24-48 hours. If this is negative consider alternative diagnoses.


- 8.** For unusual test results, discuss in the expert group. Consider repeating the test as soon as possible, within 24-48 hours.


- 9.** Post-COVID infection, RT-PCR test may remain positive for months. Repeat testing is not recommended within 90 days after infection. Consider antibody testing 2-3 weeks after the initial infection.


- 10.** For a positive case in the sporting 'bubble', isolate the case as well as all close contacts and discuss with local public health officials. Consider further RT-PCR testing for asymptomatic contacts (point 4). Consider testing all close contacts.



\*Subject to local government approval.

This infographic outlines evidence-based recommendations on COVID-19 reverse transcriptase PCR (RT-PCR) testing in elite sport settings, aiming to protect personal and population health, and acknowledging resources and expertise that are often available in elite sport. Public health recommendations vary by country and region, and protocol decisions should be made in consultation with relevant public health authorities.

### FORM AN EXPERT GROUP

An expert, multidisciplinary group with input from clinical virology, microbiology, public health, infectious diseases and sports medicine provides optimal

implementation and interpretation of testing.

### PREVENTION IS BEST

Interventions to prevent COVID-19 transmission should be implemented consistently<sup>1,2</sup> and should include

- ▶ Effective hand hygiene.
- ▶ Physical distancing: athletes should minimise discretionary social contacts and maintain a distance of at least one metre from others.
- ▶ Wearing a mask at all times when around others, especially indoors.<sup>3</sup>
- ▶ Prioritising outdoor over indoor activity where possible.

### COVID-19 AND RT-PCR TESTING

The current gold standard of testing is RT-PCR testing.<sup>4-6</sup> The test is highly sensitive and specific to SARS-CoV-2 viral RNA in laboratory conditions.<sup>2</sup> Test results should be interpreted on the basis of the pretest probability, previous test results and clinical history. Test sensitivity and specificity will rely on the (1) quality and location of swabbing; (2) testing equipment and reagents, and (3) laboratory expertise.

Close contacts<sup>7</sup> to a positive-testing athlete should be isolated and proceed with daily monitoring for symptoms and temperature, and where available testing. If the contact is asymptomatic

and COVID-19 RT-PCR tests are negative at 7 hours of follow-up, the close contact could be considered for a return to sport, depending on discussions with local public health authorities.

### TESTING AND ELITE ATHLETE GATHERINGS

Prior to a gathering of elite athletes, for example, at a training camp or competition, all athletes should have regular symptom checks and should undergo RT-PCR or other screening for the virus. For the first gathering, testing 6 and 3 days prior to the event is recommended, as well as testing as close to the event as logistically possible, ideally within 48 hours of the meeting. Interval (eg, weekly) PCR testing for the duration of the gathering should be considered.

### MANAGING A POSITIVE TEST

Positive tests should be managed according to national and local public health guidance, but elite sport can often provide additional medical and testing support. The positive case, as well as all close contacts, should be isolated as soon as possible, and contact tracing should be undertaken.

If an asymptomatic athlete tests positive in screening, they should be isolated but retested to ascertain whether the result represents a true or false positive. False positives are less likely when the prevalence of COVID-19 is high. In a symptomatic individual, a positive result is considered a true positive. Careful attention should be paid to the PCR cycle threshold (Ct) and the gene expression of the result, as this correlates strongly with cultivable virus.<sup>4</sup> A test with a high Ct (>30, and especially >35) may not indicate current infectivity,<sup>4,5</sup> although the viral load may rise in subsequent days.

### INTERPRETING A NEGATIVE TEST IN AN ATHLETE

If an athlete has symptoms indicative of coronavirus (eg, loss of taste/smell, dry cough or fever) but test results are negative, repeat testing is recommended to exclude a false negative, especially if there is a high prevalence of COVID-19 activity. An alternative diagnosis with testing for other viral aetiologies should also be considered. Unusual test results should be discussed within the expert group.

### RETESTING POST-COVID INFECTION

Viral RNA can persist in individuals beyond infectivity for several months.<sup>4-6</sup>

For this reason, repeat PCR screening in asymptomatic athletes is not routinely recommended for 90 days postinfection. Repeat testing can stratify whether viral load is decreasing and may inform decisions to isolate a patient beyond 10 days in some cases. In the event an athlete has been retested within 90 days, consider their Ct value. When Ct is >35 and the patient's symptoms have resolved, infectivity is unlikely.<sup>6</sup>

### RETURN TO SPORT FOR A COVID-19 CONFIRMED CASE

Following infection, there should be a graduated return to sport, guided by professional advice which may vary based on the severity of the illness, the demands of the sport and logistical factors.<sup>8-10</sup> Additional cardiac testing should be considered based on the severity of illness.<sup>11</sup>

<sup>1</sup>Sports Medicine, SportNI Sports Institute, Newtownabbey, UK

<sup>2</sup>Sports Medicine NI, Belfast, UK

<sup>3</sup>Medical and Anti-Doping Department, Federation Internationale de Football Association, Zurich, Zürich, Switzerland

<sup>4</sup>Sport Medicine Department, World Rugby, Dublin, Ireland

<sup>5</sup>Department of Medicine, University College Cork, Cork, Ireland

<sup>6</sup>ATP Medical Services, Ponte Vedra, Florida, USA

<sup>7</sup>Australian Football League, Docklands, Victoria, Australia

<sup>8</sup>St Andrew's House Edinburgh, Scottish Government Sport and Physical Activity Policy Team, Edinburgh, UK

<sup>9</sup>Sports Medicine, Scottish Institute of Sport, Stirling, UK

<sup>10</sup>Department of Immunology, University of Bern, Bern, Switzerland

<sup>11</sup>Microbiology, University of Groningen, Groningen, The Netherlands

<sup>12</sup>Medical Department, British Cycling, Manchester, UK

<sup>13</sup>Sports Medicine, Sport Wales, Cardiff, UK

<sup>14</sup>Cwm Taf Morgannwg University Health Board, Abercynon, UK

<sup>15</sup>Medicine, USA Cycling, Colorado Springs, Colorado, USA

<sup>16</sup>School of Medicine, Dentistry and Biomedical Sciences, Queen's University Belfast, Belfast, UK

<sup>17</sup>Trauma and Orthopaedics, Chelsea and Westminster Hospital, London, UK

<sup>18</sup>Public Health/SEM, Barts Health NHS Trust, London, UK

<sup>19</sup>Faculty of Health Sciences, University of Pretoria, Pretoria, South Africa

<sup>20</sup>AMC/VUmc IOC Research Center of Excellence, Amsterdam Collaboration on Health & Safety in Sports (ACHSS), Amsterdam, The Netherlands

<sup>21</sup>Sports Medicine, Sport Scotland Institute of Sport, Stirling, UK

<sup>22</sup>Department of Family Practice, Queen's University Belfast, Belfast, UK

**Correspondence** to Dr Neil Heron, Department of Family Practice, Queen's University Belfast, Belfast BT7 1NN, UK; neilheron@yahoo.co.uk

**Twitter** Andrew Massey @andy\_massey, Andrew Murray @docandrewmurray, Michael Edmund David McLarnon @mmdlarnon98, Dionisio Izquierdo @DrDionisioizq, Babette M Pluim @docpluim, Niall Elliott @dundeessportsmed and Neil Heron @neilSportDoc

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doi:10.1136/bjsports-2020-103751

### ORCID iDs

Alan Rankin <http://orcid.org/0000-0001-5132-1937>

Andrew Massey <http://orcid.org/0000-0002-8253-932X>

Eanna Cian Falvey <http://orcid.org/0000-0003-3961-1805>

Andrew Murray <http://orcid.org/0000-0003-3327-8028>

Michael Edmund David McLarnon <http://orcid.org/0000-0002-9478-8569>

Babette M Pluim <http://orcid.org/0000-0003-0655-8980>

Niall Elliott <http://orcid.org/0000-0002-5394-975X>

Neil Heron <http://orcid.org/0000-0002-4123-9806>

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