

Let's Play Ball: COVID-19 Graduated Return to Play Guidelines

Posted on [November 18, 2022](#) by [jenduncan](#)

Keywords: Basketball, COVID-19, return to play

The outbreak of Coronavirus disease (COVID-19) resulted in suspension of youth, academic and professional sport in New Zealand, and around the world. Following resumption of domestic and international competition there have been several reports of an increased number of athletes testing positive for COVID-19 after returning to competition (1). In light of these concerns, it is essential that sporting organisations provide 'informative, consistent and specific guidance for safe return to training and competition' (2), delivered in context to the sport. This blog presents an overview of the Basketball New Zealand COVID-19 Graduated Return to Play (GRTP) Guidelines and is written to assist athletes resume safe training ahead of return to competition that promotes health and performance in an easy-to-follow GRTP infographic.

Guidance Scope

In light of recent concerns surrounding the return to play of athletes following COVID-19 disease, this document has been prepared by the Basketball New Zealand Coronavirus (COVID-19) Framework Project Team to provide guidelines for coaches and athletes, taking into consideration the New Zealand Public Health guidelines regarding COVID-19 at the time of publication (3). As public health guidelines will continue to change as greater levels of evidence are published (4-6), these changes need to be considered before advising athletes.

Target audience and applicability of guidelines

The guidelines are ONLY applicable to those who have had mild to moderate illness (or are asymptomatic), and not requiring hospital care. The guidelines are NOT suitable for those who are not being closely supervised by a healthcare practitioner. In such cases, it is recommended that you seek guidance from appropriate physician.

Expert Opinion

The guidance is based on expert opinion of leading medical, academic and high-performance personnel, taking into consideration the current available literature on Graduated Return to Play (GRTP) outlining experiences of athletes who are known to have contracted COVID-19. This has resulted in published guidelines moving closer to a 'symptoms' as opposed to 'time-course' based approach (7-10).

Progression

As athletes may unintentionally detrain as a result of self-isolation periods following COVID-19 infection due to the illness and/or lack of facilities to maintain their fitness (11, 12) it is recommended that athlete training progressions follow a linear step-type loading principle with incremental increases in training load (13, 14). The GRTP guidelines outline that the athlete can advance to the next stage ONLY if there are NO worsening of symptoms at rest, and at the level of physical activity achieved in the previous GRTP stage without a worsening of symptoms. The concepts of training load, progression, and recovery are key considerations for coaches, performance staff and team physicians supporting athletes (15), and have been previously addressed (13).

50/30/20/10 Rule

The "50/30/20/10" rule serves as a useful approach to individual and team load progression, as outlined in the Joint Consensus Paper by the National Strength and Conditioning Association (NSCA) and Collegiate Strength and Conditioning Coaches Association (CSCCa) (16). With the reintegration of players into the training environment, it is recommended to reduce the overall training volume by 50% of the uppermost planned volume initially. This is followed by a 30% reduction in uppermost planned volume, then 20%, and 10%. Such an approach to progressive overload may assist with the successful reintegration into the training environment. Follow this [link](#) for more detail of the 50/30/20/10 rule (13).

Recovery Strategies

Recovery is defined as a '*multifaceted (e.g., physiological and psychological) restorative process relative to time*' (17). From a basketball-specific perspective, recovery should target the physiological and psychological stress associated with the return to training and competition (18). Common recovery strategies include sleep, cold water immersion, massage, compression, nutrition and hydration interventions (19-21). It is also important that psychological and emotional wellness is not be overlooked during this process (22). As there is no '*one-size-fits-all*' approach to recovery (20), it is important to educate athletes about the importance of individualised, self-initiated, proactive recovery strategies (19-21).

Protocol Commencement

This GRTP protocol should only commence when the athlete is:

1. Free from all but the mildest 'above neck' symptoms (e.g., mild headache, loss of taste or smell); and
2. Off treatments that may mask symptoms (e.g., paracetamol).

NOTE: In the case that a symptomatic athlete tests negative for COVID-19 they should continue to consult with their physician during their recovery, as per any viral illnesses.

Red Flag Indicators

If any of the 'red flags' indicators outlined in Table 1 or other concerning symptoms occur, a medical practitioner should be consulted immediately, and as a minimum the athlete should rest and reattempt the previous stage after at least 24 hour without symptoms. It is recommended that a medical practitioner be consulted at any stage if there are concerning symptoms or indications (i.e., 'red flags').

Table 1. Red Flags Indications

Indicator	Descriptor
Severe or increasing breathlessness	Disproportionate to the amount of effort.
Thromboembolic events	Unusual, sharp, pain or discomfort in chest or abdomen, muscle pain +/- limb swelling.
Exertional light-headedness	Not just when standing up from a sitting position
Syncope	Fainting / passing out
Unusually high heart rate	During exercise or slow HR recovery on cessation of exercise.
Unusually high RPE	For a given exercise intensity (compared with previous known RPE responses).
Psychological	Increased mental health / anxiety-related difficulties
Athlete illness perception	Increased perception of moderate / severe illness symptoms

Adapted from the UK Home Countries Institutes of Sport (10) and Elliott and colleagues (23).

GRTP descriptions and progressions

Table 2 describes GRTP actives and progression of stages for athletes who experience any 'below neck' symptoms. While Table 3 outlines GRTP actives and progression of stages for athletes who are either asymptomatic or have mild above neck symptoms only. These stages are outlined in the accompanying infographic at the bottom of this blog.

Table 2. GRTP descriptions and progressions: 'below neck' symptoms

Stage Descriptor

- | | |
|--------------|---|
| STAGE | <ul style="list-style-type: none"> Involves minimum rest period during 7-days self-isolation (19) in order to optimise the recovery and protect the cardio-respiratory system. |
| 1 | <ul style="list-style-type: none"> Household activities and light exercise when feeling well enough. |

- If symptoms are improving, and physician approves, progression to stage 2.
 - Light aerobic activity. Keep the intensity low (RPE 1-2).
- STAGE 2**
- <70% HR max working for 15 minutes only.
 - Monitor how you feel the next day.
 - Progression over a minimum of 2 days.
- STAGE 3a**
- Increase the intensity of the activities working at <80% HR max (RPE 3-4).
 - Complete <50% uppermost training load.
 - Progression over a minimum of 2 days.
- STAGE 3b**
- Progress to more complex training drills at RPE 5-6 for 45 minutes.
 - Perform conditioning activities at a heart rate <80% HR max.
 - Introduce competitive drills <20% of session time.
 - Complete <70% uppermost training load.
 - Progression over a minimum of 2 days.
- STAGE 4**
- Resume team training
 - Complete <80% uppermost training load.
 - Keep heart rate <80% HR max and train for 60 minutes.
 - Competitive and contact work <30% of session time.
- STAGE 5**
- Medical physician review to determine return to competition status.
 - Back into high intensity and full training leading into competition.
 - Manipulate training components as required to meet player needs.
 - Continue to monitor Health and Wellness status.

Table 3. GRTP descriptions and progressions: Mild above neck symptoms only

Stage	Descriptor
STAGE 2	<ul style="list-style-type: none"> • Commence at Stage 2, minimum of 7 days self-isolation period (19). • Light aerobic activity. Keep the intensity low (RPE 1-2). • <70% HR max working for 15 minutes only. • Monitor how you feel the next day.
STAGE 3a	<ul style="list-style-type: none"> • Increase the intensity of the activities working at <80% HR max (RPE 3-4). • Complete <50% uppermost training load. • Progression over a minimum of 2 days.
STAGE 3b	<ul style="list-style-type: none"> • Progress to more complex training drills at RPE 5-6 for 45 minutes. • Perform conditioning activities at a heart rate <80% HR max. • Introduce competitive drills <20% of session time. • Complete <70% uppermost training load. • Progression over a minimum of 2 days.

- Resume team training
 - Complete <80% uppermost training load.
- STAGE 4**
- Keep heart rate <80% HR max and train for 60 minutes.
 - Competitive and contact work <30% of session time.
-
- Medical physician review to determine return to competition status.
 - Back into high intensity and full training leading into competition.
- STAGE 5**
- Manipulate training components as required to meet player needs.
 - Continue to monitor Health and Wellness status.

Key Considerations

1. In all cases, if any of the previously detailed 'red flag' symptoms manifest, or if the athlete or anyone else supporting them has any concerns, the medical physician should be consulted immediately, and the GRTP should be ceased.
2. Some people take over 3 weeks to recover and return to full training, and some mild symptoms may also persist (e.g., mild breathlessness, fatigue, reduced or altered smell / taste), which may extend the return to training process, according to the clinical scenario and performance requirements.
3. As previously detailed the self-isolation period should be followed in accordance with follow directions of the appropriate Health Authorities (i.e., 7 days) (24), so all activities during that period will need to be performed within the athlete's home.

Basketball New Zealand GRTP Infographic for coaches and athletes:

Basketball New Zealand
COVID-19 Graduated Return to Play (G RTP)
 Guidelines for coaches and players to help transition through the RTP stages

Stage 1 7 days * (minimum)	<ul style="list-style-type: none"> Minimum rest period (self-isolation). Household activities of daily living Light core strength exercises when feeling well enough Light body weight strengthening exercises when feeling well enough Light roller and stretching exercises may be useful at this stage 	
Self-isolation: After 7-days I have no worsening of symptoms or more fatigued than day before.		
Stage 2 2 days (minimum)	<ul style="list-style-type: none"> Light aerobic activity (Running, Bike and Body weight circuits) Keep the intensity low (RPE 1-2) at <70% HR_{max} working for 15 minutes only Monitor how you feel the next day (must not be more fatigued than day before) To aid your recovery use the Recovery Checklist 	
Above neck symptoms only: After 2-days I have no worsening of symptoms or more fatigued than day before.		
Stage 3a 2 days (minimum)	<ul style="list-style-type: none"> Increase the intensity of the activities working at <80% HR_{max} (RPE 3-4) Individual ball handling and shooting drills for 30 minutes only Check heart rate and modify intensity as necessary No more than 50% uppermost training load 	
Asymptomatic (No symptoms): After 2-days I have no worsening of symptoms or more fatigued than day before.		
Stage 3b 2 days (minimum)	<ul style="list-style-type: none"> Progress to more complex training drills at RPE 5-6 for 45 minutes Perform conditioning activities at a heart rate <80% HR_{max} Introduce competitive drills <20% of session time No more than 70% uppermost training load 	
Actual training volume to equal 30% reduction uppermost planned training volume After 1-day I have no worsening of symptoms or more fatigued than day before.		
Stage 4 2 days (minimum)	<ul style="list-style-type: none"> Resume team training at 80% uppermost training load Keep heart rate <80% HR_{max} and train for 60 minutes Competitive and contact work <30% of session time Maximise recovery – use the Recovery Checklist to aid recovery 	
Actual training volume to equal 20% reduction uppermost planned training volume After 2-days I have no worsening of symptoms or more fatigued than day before.		
Stage 5 2 days (minimum)	<ul style="list-style-type: none"> Back into high intensity and full training leading into competition Manipulate training components as required to meet player needs Progress to live ball play situations Continue to monitor Health and Wellness status 	
RETURN TO PLAY		
<ol style="list-style-type: none"> Calculate your max heart rate: $220 - \text{age} = \text{HR}_{\text{max}}$ (used to gauge your intensity) Continue to monitor how you feel the next day (Health, Wellness and Recovery status) Days allocated to each stage are a guide only (will differ based on the individual) Progression allowed when minimum days achieved with no worsening of symptoms or more fatigued than day before 		
<small>* New Zealand Government, Ministry of Health, People with COVID-19 https://www.health.govt.nz/our-services/health-advice-public/people/covid-19</small>		
<small>Adapted from:</small> <ol style="list-style-type: none"> Elliott, N., et al. (2020). Infographic: Graduated return to play guidance following COVID-19 infection. <i>Sports</i>, <i>Journal of Sports Medicine</i>, 4(3), 176-177. Bird, S.P., et al. (2020). Basketball New Zealand Guidelines: Safe return to training for players in preparation for a condensed National Basketball League season following COVID-19 restrictions. <i>New Zealand Journal of Sports Medicine</i>, 47(1), 49-54. NetballSmart COVID-19 Care. Netball New Zealand. 		
https://nz.basketball bbnz@nz.basketball +64 4 498 5950		

AUTHOR NAMES & AFFILIATIONS:

Stephen P. Bird, BHMvt(Hons), PhD

Athlete Health and Performance Lead, Basketball New Zealand, Wellington New Zealand

Professor, Sport and Exercise, School of Health and Medical Science, University of Southern Queensland, Ipswich QLD Australia

<https://orcid.org/0000-0002-5607-3829>

Anousith Bouaaphone, PGDHSc (Musculo), BHSc(Phty)

Physiotherapist New Zealand Men's Basketball Team, Wellington New Zealand

Hamish Osborne, MBChB, MMedSci, FACSEP

and Exercise Physician, New Zealand Men's Basketball Team, Wellington, New Zealand

Senior Lecturer, Sport and Exercise Medicine, University of Otago

Mel Downer

National Pathways Manager at Basketball New Zealand, Wellington New Zealand

Chris McLellan, BExSc, MPhty, PhD.

Vice President of Sports Performance, Florida Panthers, Sunrise Florida

Professor, Sport and Exercise, School of Health and Medical Science, University of Southern Queensland, Ipswich QLD Australia

COMPETING INTERESTS

None for any author.

REFERENCES:

1. Forster V. Tokyo Olympic Games Releases Covid-19 Data – 127 People Test Positive So Far. Forbes Magazine. Jersey City, NJ Forbes Media, 2021.
2. Löllgen H, Bachl N, Papadopoulou T, et al. Infographic. Clinical recommendations for return to play during the COVID-19 pandemic. *Br J Sports Med* 2021;55(6):344-45.
3. New Zealand Government. COVID-19 (novel coronavirus) Wellington, New Zealand: Ministry of Health, New Zealand Government; 2022 [updated Apr 22. Available from: <https://www.health.govt.nz/covid-19-novel-coronavirus> [Accessed Apr 6 2022].
4. Biswas A, Elliott Niall, Martin R, et al. The BASES Expert Statement on Graduated Return to Play Following Covid-19 infection. *Sport Exerc Sci* 2021;67(Spring):62-67.
5. Davey MS, Davey MG, Hurley R, et al. Return to play following COVID-19 infection—a systematic review of current evidence. *J Sport Rehab* 2022;31(2):218-23.
6. Udelson JE, Rowin EJ, Maron BJ. Return to play for athletes after COVID-19 infection: The fog begins to clear. *JAMA Cardiol* 2021;6(9):997-99.
7. Elliott N, Martin R, Heron N, et al. Infographic. Graduated return to play guidance following COVID-19 infection. *Br J Sports Med* 2020;54(19):1174-75.
8. Hughes D, Saw R, Perera NKP, et al. The Australian Institute of Sport Framework for rebooting sport in a COVID-19 environment. *J Sci Med Sport* 2020;23(7):639-63.
9. Netball New Zealand. COVID-19 Care NetballSmart Auckland, New Zealand: Netball New Zealand,; 2022 [Available from: <https://netballsmart.co.nz/netball-smart/resources.html#key-resources> [Accessed Apr 10 2022].
10. UK Home Countries Institutes of Sport. Coronavirus graduated return to play for performance athletes: Guidance for healthcare practitioners who are supporting performance athletes: UK Home Countries Institute of Sport; 2021 [updated Apr 05. Available from:

<https://sportscotland.org.uk/media/7163/hcsi-coronavirus-grtp-v2-080421.pdf> [Accessed Jan 12 2022].

11. Bhatia RT, Marwaha S, Malhotra A, et al. Exercise in the severe acute respiratory syndrome Coronavirus-2 (SARS-COV-2) era: A question and answer session with the experts endorsed by the section of Sports Cardiology and Exercise of the European Association of Preventive Cardiology (EAPC). *Eur J Prev Cardiol* 2020;27(12):1242-51.
12. Jukic I, Calleja-González J, Cos F, et al. Strategies and solutions for team sports athletes in isolation due to COVID-19. *Sports* 2020;8(56)
13. Bird SP, Osborne H, King L, et al. Basketball New Zealand Guidelines: Safe return to training for players in preparation for a condensed National Basketball League season following COVID-19 restrictions. *NZ J Sports Med* 2020;47(1):49-53.
14. Reiman MP, Lorenz DS. Integration of strength and conditioning principles into a rehabilitation program. *Int J Sports Phys Ther* 2011;6(3):241-53.
15. American College of Sports Medicine. Load, overload, and recovery in the athlete: Select issues for the team physician—A consensus statement. *Med Sci Sports Exerc* 2019;51(4):821-28.
16. Caterisano A, Decker D, Snyder B, et al. CSCCa and NSCA Joint Consensus guidelines for transition periods: Safe return to training following inactivity. *Strength Cond J* 2019;41(3):1-23.
17. Kellmann M, Bertollo M, Bosquet L, et al. Recovery and performance in sport: Consensus statement. *Int J Sports Physiol Perform* 2018;13(2):240-45.
18. Calleja-González J, Terrados N, Mielgo-Ayuso J, et al. Evidence-based post-exercise recovery strategies in basketball. *Physician Sportsmed* 2016;44(1):74-78.
19. Halson SL. Recovery techniques for athletes. *ASPETAR Sports Med J* 2015;4(4):12-16.
20. Minett GM, Costello JT. Specificity and context in post-exercise recovery: it is not a one-size-fits-all approach. *Front Physiol* 2015;6(130)
21. Bird SP. Implementation of recovery strategies: 100-point weekly recovery checklist. *Int J Athl Ther Train* 2011;16(2):16-19.
22. Bird SP. Impact of COVID-19 on athlete mental health: Strategies to promote emotional wellness. *Int J Strength Cond* 2021;1(1):e1-5.
23. Elliott N, Biswas A, Heron N, et al. Graduated Return to Play after SARS-CoV-2 infection – what have we learned and why we've updated the guidance [Blog]. *British Journal of Sports Medicine* 2022 [updated Apr 23. Available from: <https://blogs.bmj.com/bjbm/2022/04/23/graduated-return-to-play-after-sars-cov-2-infection-what-have-we-learned-and-why-weve-updated-the-guidance/>].
24. New Zealand Government. Advice for people with COVID-19 Wellington, New Zealand: Ministry of Health, New Zealand Government; 2022 [updated Apr 8. Available from: <https://www.health.govt.nz/covid-19-novel-coronavirus/covid-19-health-advice-public/advice-people-covid-19> [Accessed Apr 8 2022].

Rate This

(Visited 451 times, 67 visits today)

eral

« PREVIOUS
POST

NEXT POST »

Sponsored

Government Fund Money You Don't Have To Repay (See The List)

Government Funds | Search AD

Search Now

Unsold Mobility Scooters are being sold for almost nothing

Mobility Scooters | Search Ads

The Oldest Stars Who Are Still Living In 2022

Reportingly

Time To Upgrade Your Credit Card? Find Options

Credit Card Options | Search Ads

Villas Prices In Dubai Might Be More Affordable Than You Think

apartments-for-sale-98221.com

Are You From Australia? Online Big Data Courses Will Surely Surprise You

Sponsored Listings

0 Comments



Start the discussion...

LOG IN WITH

OR SIGN UP WITH DISQUS

Name

/ Best

Be the first to comment.

Sponsored

Government Fund Money You Don't Have To Repay (See The List)

Government Funds | Search AD

Search Now

Time To Upgrade Your Credit Card? Find Options

Credit Card Options | Search Ads

Unsold Mobility Scooters are being sold for almost nothing

Mobility Scooters | Search Ads

Villas Prices In Dubai Might Be More Affordable Than You Think

apartments-for-sale-98221.com

Are You From Australia? Online Big Data Courses Will Surely Surprise You

Sponsored Listings

Top 14 Highly Rated Horror Movies

OMGIFacts

From the latest research on sports injuries, to experiences and insights of those working at the coalface of the Sport and Exercise world, we aim to provide cutting-edge content to the Sport and Exercise Medicine community around the world.

Search	Search
--------	--------

CATEGORIES

Select Category 

TAGS

[@exerciseworks](#) [acl](#) [ACL injuries](#) [ACPSEM series](#) [basem](#) [BJSMFridayPodcast](#) [Concussion](#) [conference](#) [Conferences](#)
[cover](#) [competition](#) [COVID-19](#) [Education](#) [exercise](#) [Exercise is Medicine](#) [Exercise prescription](#) **featured**
[featured-list](#) [Female athlete](#) [Football](#) [injury](#) [Injury prevention](#) [ioc](#) [knee](#) [knowledge](#) [translation](#) [Letter to the editor](#) [Mental](#)
[Health](#) [Mobile apps](#) [nutrition](#) [Olympics](#) [physical activity](#) [physiotherapists](#) [physiotherapy](#) [Podcast](#) [RED-S](#) [Return to Play](#)
[rugby](#) [running](#) [running injuries](#) [SEM Registrars](#) [sports medicine](#) [sudden cardiac death](#) [Swiss series](#) [tendinopathy](#)
[undergraduate perspective](#) [Youth](#)

MOST POPULAR

Soft tissue injuries simply need PEACE & LOVE

al activity for children and young people aged...

Ready, steady...GO! Ensuring postnatal women are run-ready!


Lateral 'hip' pain? Don't always blame the glutes....

Your patient has an 'exercise associated wheeze'... it...


SOCIAL MEDIA



PODCASTS



[BMJ talk medicine](#)
Exercise Medicine a...

 **SOUNDCLOUD**

5.5K
5.5K
7.7K
8.2K
7.9K
9.2K
9.3K
10.5K

BMJ talk medicine
BJSM

[Privacy policy](#)

medicine · BJSM

BJSM MOBILE APP

LATEST JOURNAL CONTENT

ORIGINAL RESEARCH

[Longitudinal study of six seasons of match injuries in elite female rugby union](#)

25 November 2022

ORIGINAL RESEARCH

[Transform-Us! cluster RCT: 18-month and 30-month effects on childrens physical activity, sedentary time and cardiometabolic risk markers](#)

25 November 2022 

PATIENT VOICES

[Hope is not enough: my journey through concussion recovery](#)

24 November 2022

ORIGINAL RESEARCH

[Impact of COVID-19 on the physical activity, quality of life and mental health of adolescent athletes: a 2-year evaluation of over 17 000 athletes](#)

24 November 2022

PHD ACADEMY AWARD

[Exercise rehabilitation for mid-portion Achilles tendinopathy: a critique of evidence and assumptions \(PhD Academy Award\)](#)

24 November 2022

BMJ CAREERS



Consultant Physicians

UAE | Very Competitive

We have fantastic opportunities in Abu Dhabi and Dubai for Consultants to join one of the region's top private hospital groups, Mediclinic Middle E...

Recruiter: Head Medical

[Apply for this job](#)

Consultant in Gastroenterology with interest in Hepatology

Jersey (GB) (JE) | Depending on experience £94,615 to £170,025 Points 18-20 by application & panel agreement

The Island of Jersey is seeking a third consultant gastroenterologist. We are looking to appoint a dynamic-forward thinking consultant

Recruiter: Government of Jersey

[Apply for this job](#)

Salaried Remote GPs

Homeworking options throughout England, Scotland and Wales and clinics in London and Birmingham | Up to £11,500 per session, per annum (dependant on day and time of week)

BMJ Blogs

Comment and Opinion | Open Debate

The views and opinions expressed on this site are solely those of the original authors. They do not necessarily represent the views of BMJ and should not be used to replace medical advice. Please see our full website [terms and conditions](#).

All BMJ blog posts are posted under a CC-BY-NC licence

BMJ Journals

[Cookie settings](#)

© BMJ Publishing Group Limited 2022. All rights reserved.