

World Rowing: Covid-19 Pandemic:
Advice for training in post-peak and post-pandemic periods

1. revision, 18. October 2020
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World Rowing

Covid-19 Pandemic:

Advice for training in post-peak and post-pandemic periods

2. revision, 31 May 2021

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1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

Table of Contents

HEALTH SITUATION CAUSED BY THE CORONAVIRUS (Sars-CoV-2 - Covid-19).....	3
GENERAL INFORMATION ABOUT THE PANDEMIC.....	4
TRANSMISSION AND SAFETY CONSIDERATIONS	5
INFECTION RISK, SPORT AND RETURN TO SPORT	8
MITIGATION OF RISK.....	10
GENERAL INFORMATION ABOUT DEALING WITH COVID-INFECTIONS.....	13

1. revision, 18. October 2020
2. Revision, May 31, 2021

HEALTH SITUATION CAUSED BY THE CORONAVIRUS (Sars-CoV-2 - Covid-19)

The Coronavirus pandemic continues to evolve and is in different stages in different parts of the world. Within a country there might be areas in a peak phase with high risk of transmission close to others in which the situation may be even post-pandemic, in a so called second wave or normal. Therefore, the response to the pandemic is evolving differently across the world, in terms of governmental guidelines, the severity of the impact of COVID19 on different national populations and sports.

Acknowledging the important contribution of sport to global health and with their responsibility for athlete's health, WORLD ROWING Sport Medicine Commission, after consultation with international experts, published a guideline at 27 February 2020 for the spreading period and updated the guideline at 25 March 2020 for the Peak period in which daily transmission in communities is present (Table 1)³⁶. The "Advice for Training in post-peak and post-pandemic periods" (this document) was published 11 June 2020. This was updated 1. revision, 18. October 2020 and now with this document to reflect the evolving global health situation.

WORLD ROWING has published the guideline "Covid-19 Pandemic - Return to Staging Regattas - Advice for Event Organisers and Member Federations (2020)³⁶ and participated in the design of an "Infectious Diseases Outbreak Management Tool" with five international sports federations and WHO for sporting events with a rowing specific checklist^{1,10}.

The Principles of these tools requires assessing the risk level of the sport and a particular event in both quantitative and qualitative manner¹ with the view to implementing mitigation measure through the following steps

- Assessing disease prevalence and the risk of transmission
- Determining the public health and sport event's mitigation preparedness
- Proposing the steps to take to further mitigate and reduce the risk.

All guidelines cannot replace the priority provisions of the state governments and the locally responsible health authorities, but serve as a rowing-specific technical contribution.

This WORLD ROWING-guideline deals with the **post-peak and post-pandemic periods** by addressing a few important questions:

1. What is the risk of transmission for rowing?
2. How can the transmission risk of a region, county or city can be assessed for an IF, rowing club, venue?
3. How can the risk be mitigated?
4. Which measures are recommended for which disease activity?

Typical symptoms of SARS-CoV-2

**Fever, Dry Cough, Shortness of breath, tiredness.
Disturbed smell and taste, sore throat, congestion, headache, inflammation of the eyes – conjunctivitis, chills, muscle and joint pain, mild diarrhoea.**

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

GENERAL INFORMATION ABOUT THE PANDEMIC

According to the WHO-definition for pandemic, an outbreak has different phases. WHO defines (pandemic) severity in terms of three indicators: transmissibility of a virus, seriousness of disease and impact (Table 1)^{6,16}.

Table 1: WHO terminology of outbreaks^{6,16}

Definition	Disease activity	WHO-phase	Description
LOCAL OUTBREAK	Low	1-3	Animal to human transmission in single cases and small clusters
SPREADING PERIOD	Moderate	4	Human to human transmission in clusters and communities, disease is progressing to likely be declared pandemic
PEAK PERIOD	High	5	Significant daily community transmission with increasing new cases daily in a country
	Extra-ordinary	6	
POST PEAK PERIOD	Moderate	4	Levels of pandemic virus have dropped due to containment below peak levels with sustained decrease in community transmission
POST PANDEMIC PERIOD	low - None	1-3	Levels of virus activity have returned to low (normal) levels, but a new wave can be expected

The grading system was developed by WHO for influenza pandemic based on previous collected data^{30,29,15,16}. Because COVID-19 is a new disease and SARS-CoV-2 a new virus, analogies to influenza, SARS-CoV-1 and other easily transmittable viral disease have to be drawn. Surveillance systems differ widely from one country to another and therefore, threshold values are difficult to compare and it is up to the state health authorities to determine and explain the level of disease activity^{15,16}. Therefore, WORLD ROWING strongly encourages each NF to guide their athletes on how to avoid exposure to Covid-19 by following recommendations for their regions expected to be promoted by official health authorities, such as local (government and public health) and WHO authorities.

When it can be assumed that COVID-19 disease will be prevalent for longer time, it is important to design rules and recommendations which can be adjusted also for the local and regional level. Local clusters of COVID-19-disease may arise in all phases of the pandemic^{30,29}. *There might be areas of high prevalence (and high risk) and those of low prevalence (and low risk) co-existing in regions and countries at the same time.* Those outbreaks will be assessed by health authorities, e.g. the likelihood of spreading and the possibility of containment, tracking of infected or quarantined people and the stress on the hospital system. Outbreaks in dormitories, nursing homes, in a factory may have high numbers, but may not have major effect on the other population in this region.

It is important that any athlete, team support and club member is aware of the importance of the recommended hygienic measures and social distancing to protect a safe environment for the sport. Rowing has shown with the European Championships in Duisburg (U23), Belgrade (U19) and Poznan, that single infected people or small groups did not spread to the other attendees with a proper hygiene and a mitigation concept.

Semi-confinement

Sport teams can effectively reduce risk of infection by semi-confinement which means voluntarily restriction of social contacts also in private life and consequent hygienic measures^{7, 21, 24}. Semi-confinement means that person entering the group should be illness-

1. revision, 18. October 2020
2. Revision, May 31, 2021

free for at least 10 days and be tested for SARS-CoV-2 when there are contact persons ill with COVID-19 or SARS-CoV-2 carriers.

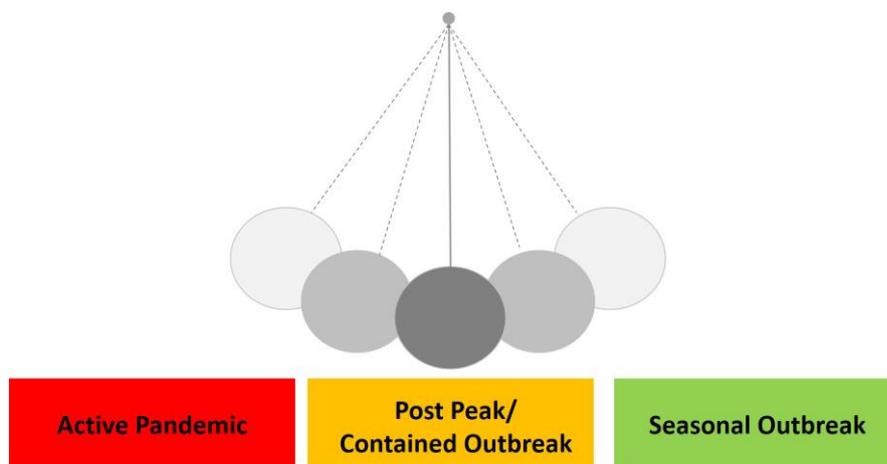


Figure 1. Pendulum of risk – the pandemic has various phases in different countries, regions and in and within cities. Therefore, the pandemic stresses careful risk assessment and appropriate risk mitigation. From Adami et al. 2020, with permission¹.

TRANSMISSION AND SAFETY CONSIDERATIONS

The basic rules to avoid being exposed to virus spread:

- **Wash your hands frequently for a minimum of thirty seconds with soap and water or disinfected with alcoholic disinfectant when water is not available.**
- **Don't touch your mouth or nose or eyes with your hands.**
- **Practice excellent cough and respiratory hygiene.**
- **Practice physical distancing and keep distance between people.**
- **Avoid mass gatherings** where physical distancing is not possible or where local health care resources may be overwhelmed.
- **Masks covering nose and mouth** decrease the risk of transmission significantly.

General safety considerations for boat rowing (Detailed phase-related considerations follow)

- As an outdoor and non-contact sport, rowing can be relatively safe due to air flow and distances possible between athletes when rowing.
- Rowing in a single is considered generally as safe.
- In crew boats, a minimum distance of 1.30m is maintained between crew members.
- Clubs are advised to maintain a log of crews training together so that, in case of infections, people exposed to virus can be traced.
- The virus has been shown to survive temporarily in fresh water, but transmission through fresh water is unknown^{5,31}. WORLD ROWING water quality guidelines apply.
- The recommendations explicitly apply to recreational and competitive rowing.

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

- Each rower should adopt the preventive measures, as Covid-19 follows classical dissemination via respiratory droplets and may survive on contaminated surfaces up to a few days.

Transmission of SARS-CoV-2 by air

SARS-CoV-2 is one of the representatives of the species SARS-associated coronavirus, it is an enveloped RNA virus with an unsegmented genome (monopartite), i.e. only a single nucleic acid molecule (here RNA) surrounded by a capsid. It is sensitive to disinfectants and physical procedures such as heating and drying^{8, 11}.

The main transmission of SARS-CoV-2 is via fluid particles that are produced by coughing and sneezing and are absorbed by the opposite person via the mucous membranes of the nose, mouth and possibly the conjunctiva; contact infections are also possible. Infected fluid particles are produced by breathing, coughing, speaking and sneezing^{8, 12, 18}. Depending on particle size, a distinction is made between droplets (larger than 5 µm) and smaller particles (infectious aerosols, smaller than 5 µm).

In principle, the likelihood of exposure to droplets and aerosols is increased within a radius of 1-2 m around an infected person. Droplets sink to the ground very quickly, aerosols can float in the air for a longer time and spread in closed rooms. The size of the particles, the air temperature, humidity and air currents are decisive factors in particle dispersion.⁸

Virus transmission by aerosols has been documented. In indoor conditions an effective air exchange system can reduce the aerosol concentration in a room and most likely decreases infection rate. The role of aerosols in poorly ventilated rooms may be important, particularly in enclosed working areas like mines, meat industry plants, goods packing and distribution centers, but also in restaurants, clubs and bars.⁷ There has been reports on Clusters in indoor sport clubs before measures have been introduced.⁷ Sports has to consider aerosol transmission and virus spread particularly in indoor training facilities with attention to ventilation and ability for maintaining a safe distance.⁸

Exercise capacity is decreased by wearing a mask^{13,6}. During ergometer training, face masks may interfere with training but athletes training on an erg exhale aerosol. There is no data on aerosols during ergometer rowing, but it is recommended to increase distance between ergometers and to ensure good ventilation. Opening windows facilitates ventilation.

Modification of buildings and indoor training facilities should be considered. Continuous exhaustion tubes should be considered for indoor ergo and training rooms. With room height aerosols also disperse and the risk of transmission decreases. Decreasing the number of athletes per space decreases the risk of transmission.

Vaccination decreases the risk of transmission significantly²⁰.

1. revision, 18. October 2020
2. Revision, May 31, 2021

Table 2: Summary of pandemic phases of Sars-CoV-2 – Covid-19, safety levels, distancing and precautions (for details see below)

Phase	Prevalence	Safety level	WHO-recommended Distance (m)	Rowing	Boat house	Weights room	Ergo exercise
LOCAL OUTBREAKS	Single cases and small clusters	Level 1 Normal sports Hygiene rules always apply	No regulation	Crew	open	Open Disinfection Hygiene	Open
SPREADING PERIOD	In clusters and first communities	Level 2 Sport with safety precautions	1.0	Crew <i>with safety</i>	Limited access	1 athlete for 5 sqm and 2.5 m room height & 1 coach ^a Disinfection ^b and Enhanced cleaning	Hygiene, Good ventilation or exhaustion recommended
Pandemic phase / ACTIVE OUTBREAK	High community prevalence	Level 3 Sport restricted	1.5	Single Crew when in semi-confinement	closed	Closed Training of crews when in semi-confinement	Private Training of crews when in semi-confinement
Post Peak phase / OUTBREAK UNDER CONTROL	Low community prevalence – widely contained	Level 2 Sport with safety precautions	1.0	Crew <i>with safety</i> ¹	Limited access	1 athlete for 5 sqm and 2.5 m room height & 1 coach ^a Disinfection ^b and Enhanced cleaning	1.0 m distance between ergometers Good ventilation or exhaustion recommended
CONTAINED OUTBREAK - Post Pandemic phase	Controlled / contained	Level 1 Normal sports Hygiene rules always apply	No regulation	Crew	Open	Open Disinfection Hygiene	Open

- a. Number of crew members or group size depends on local prevalence and conditions and on assessment by public health authorities
- b. Disinfection of each equipment contact point before and after use

WORLD ROWING's focus is to guide on measures which effectively prevent exposure as well as measures that limit the environmental risk and the risk in the social environment. Furthermore, risk is greatly reduced by the fact that the rowing groups are relatively small and training groups and team do not change much within time. Rowers also come from socially very reliable groups with a high level of health awareness and very good hygiene behavior. In addition, logs of crews training together allow that chains of infection can be traced very well and SARS-CoV-2-transmission in rowing can be controlled effectively.

As an outdoor and non-contact sport, on-water-rowing can be considered relatively safe due to airflow and distances possible between athletes when rowing. Furthermore, a minimum distance of 1.30 m is maintained between crewmembers that are not facing themselves and do not breath in each other's face. The international society for aerosol research has quoted that for outdoor rowing in teams there is a very low risk of transmission.

There are no reports or studies available on transmission while crew rowing on water, but emphasis should be on the risk mitigation on land. From the 2020 competitions and from reports it can be concluded: rowers in an eight were not infected by ill team mates, but from roommates. Rowers were infected by physiotherapist or during social contacts with friends or in the family. World rowing has released guidelines for physiotherapy.³⁴

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

The risk of transmission can be mitigated significantly by masks covering nose and mouth^{19,11,18}. Masks can decrease the number of aerosols and particles inhaled significantly and therefore decrease the likelihood of infection or the severity of disease, because viral load is decreased. Masks should be used consequently outside the rowing boat, particularly, in boat house facilities, during meetings and travel^{4, 11, 18}. WR SMC recommends strongly FFP2-Masks. Face shields should not be used because they are not effective, they only protect against direct exposure by droplets during coughing and speaking, but not protect against aerosols^{8,18,24}. In WR Events, Face shields are only allowed in combination with appropriate masking.

INFECTION RISK, SPORT AND RETURN TO SPORT

Return to Training Considerations in post-peak and post-pandemic periods:

- Is the rate of community COVID-19 transmission, and therefore the risk of infection, low enough to allow group training or sharing of equipment?
- Are athletes and staff trained sufficiently in hygienic measures and responsible practices?
- Are there appropriate resources (hand washing facilities, soap, disinfectant, face masks) and are hygienic measures secured (cleaning of facilities, surfaces, toilets, ..)

WHO recommends to evaluate the (pandemic) severity in terms of three indicators: transmissibility of a virus, seriousness of disease and impact in the so-called PISA-assessment (Pandemic Influenza Severity Assessment) which is used in analogy also for COVID-19^{16, 330}. The Cut-off points by method for threshold settings for transmissibility and impact are defined by epidemiological methods. The seriousness of disease will be assessed by official health authorities and the impact is related to the use of emergency capacities and hospital beds of the country²⁹.

The rate of acute respiratory illnesses (ARI) surveillance is established for analysis of transmissibility of a virus according to the PISA-method^{15, 29, 32}. For the comparability of transmissibility among countries and seasons the moving epidemic method (new cases in the last seven days per 100.000 inhabitants) is widely used in Europe^{25, 26} and also a recommended method by WHO²⁹.

Cut-off points for threshold settings for transmissibility are used as recommended by the German Robert-Koch-Institute¹⁷ with thresholds of lower than 50/100.000 per inhabitants for moderate risk and 20/100.000 per inhabitants for low risk.

These cut-points allow to assess and compare the risk of transmission for COVID-19 between cities, regions and countries and allow organizers to evaluate the risk and tailor their mitigation procedures to the local or regional context (Table 3)¹⁵

Health authorities should adjust and tailor their approach to the local context^{29,32,33}. Health authorities may also use more variables than transmissibility to assess the risk like regional intensive care use or local clustering.

When new clusters of Sars-CoV-2 - Covid-19 appear in a region, the relevance for this population and the risk of transmission has to be assessed by local health authorities¹⁵. When an outbreak is contained (e.g., in a work place, nursing home ...) the risk for the other population may be much lower.

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

Table 3: Risk attribution and mitigation procedures according to different regional scenarios of Sars-CoV-2 - Covid-19 according to the WHO-guidelines^{16, 33} and using the RKI-threshold cut-off for transmissibility¹⁷

Risk	Scenario	Region / County: New Cases per 100.000 inhabitants in 7 days ¹⁷	WHO- recommen- ded Distance (m)	Rowing	Boat house	Weights room	Ergo exercise
High & extra-ordinary	Countries / Regions experiencing larger outbreaks of local transmission (Community transmission).	More than 150 cases per 100,000 in 7 days	1.5	Single, doubles, bigger crews in semi-confinement	Closed	Closed. Training of crews when in semi-confinement	Private Training of crews when in semi-confinement
moderate	Countries / Regions experiencing cases clusters in time, geographic location, or common exposure (Contained clusters of cases);	Between 50 and 150 cases per 100,000 in 7 days, or, higher prevalence but contained clusters	1.0	Crew <i>with safety</i>	Limited access	1 athlete for 5 sqm and 2.5 m room height. 5 athletes + 1 coach ^a Disinfection ^b Enhanced cleaning	1.5 m distance between ergometers Good ventilation
low	Countries / Regions with one or more cases, imported or locally detected (Sporadic cases);	Less than 50 cases per 100,000 in 7 days	1.0	Crew ^c <i>with safety</i>	Limited access	1 athlete for 5 sqm and 2.5 m room height. Group size 10 athletes + 1 coach ¹ Disinfection ^b Hygiene	Good ventilation
No	Countries / Regions with no cases (No cases);	Not applicable	No regulation	Crew	Open	Open Disinfection Hygiene	Open

- a. Number of crew members or group size depends on local prevalence and conditions and on assessment by public health authorities
- b. Disinfection of each equipment contact point before and after use
- c. Crew size can be increased to big boats due to local prevalence and conditions

1. revision, 18. October 2020
2. Revision, May 31, 2021

MITIGATION OF RISK

1. Minimize risks in all areas (at all times)

- Athletes and support staff must not participate in training if they show any symptoms of illness or have been exposed to a COVID-positive person.** They must stay at home or in isolation and call their family doctor and follow their instructions; this also applies to accompanying persons. The training group or other contacts must be informed immediately. The use of common facilities and training rooms for ill athletes is not permitted.
- Training is not allowed if there are symptoms of illness.**
- Typical symptoms of Sars-CoV-2 - Covid-19 illness are fever, dry cough, disturbed smell and taste, conjunctivitis, mild diarrhea, tiredness or shortness of breath.

2. Observe distance rules

Table 3

- When training outdoors alone, a person has a low risk of infection. The risk can be increased secondarily by the proximity to training partners and the length of time in that proximity. It is therefore important to keep a distance according to the risk phase (Table 1) when interacting on the boathouse premises, especially when maintaining equipment and launching the boats.
- Wearing of a mouth and nose mask decreases risk of transmitting the virus to others, particularly when distancing is not possible (work place or at the dock). Community masks may decrease droplets depending on material between 10 and 95% (dense cotton seems to be best), surgical masks by 85-97%. Eye protection inhibits further infection. Ensure proper training on how to handle a mask.
- With increased risk, rowers should wear a mask in the boat house and on the dock at all times.

3. Reducing the size of training groups in the post-peak period (risk medium)

Table 3

- Water training is always permitted in singles.
- Training in a crew is possible if all members are from a household or quarantined together.
- Reduce the size of a training group to five persons (high risk) or 10 (medium risk) plus the coach. A good rule is one athlete per 5 sqm (Table 3).
- Training in a crew boat is also possible according to risk (Table 3).
- Training group should not be changed in terms of personnel.
- If the respective legal regulations concerning the distance or composition of groups require it, an intermediate seat can be left free in boats or rowers wear face masks.
- If a coxswain is participating, face mask could be worn.
- Oar handles should be cleaned and disinfected after training. Disinfectant cleaning agents approved by health authorities are recommended.

4. Semi-Confinement:

- Trainings groups can be seen as semi-confined and of lower risk, when members keep social distancing out-side their training group, wear consequently face masks and follow the related regulations.

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

- b. The entry in such a Semi-Confinement-group (“Bubble”) should be allowed after negative PCR-Test.
- c. Members of the group with social contacts (Family. Children) could use daily self-tests (rapid-Antigen tests)
- e. Members of the group with symptoms or after breaking the confinement will undertake testing, for explanation see “World Rowing COVID Event Testing Policy”³⁵

5. Boat house use

- a. Reopening of rowing clubs and national training centers is upon discretion of the health authorities.
- b. WORLD ROWING SMC recommends strictly limiting the use of boat house facilities, particularly dressing rooms, showers and training facilities, depending on risk assessment. (Table 2). If possible, rowers should change and shower at home rather than at boat house facilities. When the risk is rated low, reopening should be considered (Table 3).
- c. Daily cleaning of all facilities and maintaining hygiene is mandatory. Washrooms, toilets (surfaces and contact points) and door handles should be disinfected frequently. Do not use fan hand dryers; use single user paper towels. Close the hood in toilets before flushing.

6. Exercise and weight rooms

- a. Access to exercise and gym rooms must be strictly controlled to ensure cleanliness and hygiene. For room occupation where indoor training is permitted, a r per person, with controlled flow patterns to ensure distancing, is recommended. This should be eased when disease activity and risk is low (Table 3).
- b. Ergometer exercise should be done with open windows and a distance > 1.5 m between ergometers when disease activity and risk is moderate (Table 3).
- c. Rooms should be ventilated regularly. Exhaustion tubing should be considered in the Exercise and weight rooms. Disinfection of the room air with UV-radiation is effective, but security guidelines regarding UV-rays has to be followed (shielded device).
- d. Prior to first-time use, all surfaces and the floor must be treated with an approved disinfectant cleaning agent. This must be repeated at least weekly; daily cleaning is recommended.
- e. All equipment, ergometers, dumbbells, etc. must be treated with an approved disinfectant before and after use at all contact points and exposed surfaces.
- f. Except during ergometer training, a mask should be worn. Hands must be washed before and after training.

7. Competition and regattas:

- a. WORLD ROWING has gain experience through regional and continental events and encourages all NF’s to organize safe competitions to enable rowers to compete.
- b. The risk in rowing events is related to the number of persons gathered and the possible transmission by inadvertent carriers. Hygiene rules, social distancing have to be observed carefully. Face mask should be used on the venue in pandemic
- c. The WHO Risk assessment tool helps to assess risks, mitigate spread, and enhance communication with local health authorities²⁸. This was translated in an online

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

guideline for risk analysis and mitigation procedures which is available for organizers.¹

- d. WORLD ROWING has published a “World Rowing guideline for Event Organisers and Member Federations³⁶” and a “World Rowing COVID Event Testing Policy³⁵”
- e. Pandemic-specific regulations of local health authorities have to be followed.

8. Prevention:

- a. Follow the rules. Wash hands with soap before and after meals. WR recommends that before a meal of crews all disinfect their hands.
- b. Food should not be served in buffet style when access cannot be limited to a defined and controlled group.
- c. In public transport (train, bus, air transport), FFP2-face masks should be used, but may not fully protect against infection. Eye protection may be considered. In the plane, disinfection of the seat tray is recommended. Personal containers of hand sanitizer or disinfectant should be carried and used regularly.
- d. A varied, vitamin-rich diet with sufficient vegetables and fruit helps prevent infections or reduce symptoms by improving immunity. Athletes should also drink enough to keep mucous membranes moist. In cold weather, the immune function of the mucous membranes is particularly disturbed, so keep the respiratory tract as warm as possible.

9. Drawing up a hygiene plan

- a. Clubs and event organizers are requested to draw up a hygiene plan and document the measures taken. This should include the maximum occupancy according to the risk evaluation.
- b. For events, a hygiene plan is necessary. WHO guidelines on mass gatherings and WORLD ROWING guidelines should be considered. Local health authority regulations should also be followed.

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

GENERAL INFORMATION ABOUT DEALING WITH COVID-INFECTIONS

The basic rules for those who are infected or do feel not well:

- **Typical symptoms of COVID-19 are fever, dry cough, disturbed smell and taste, inflammation of the eyes - conjunctivitis, mild diarrhea, but also tiredness or shortness of breath can be felt.**
- **You should stay in self-quarantine at home and communicate with your doctor.**
- **Avoid sports practice in groups.**
- **Go into self-quarantine. Do not get close to your partner, family members or other people, keeping a minimum distance of 2 meters.**
- **Eat separately and use a separate toilet.**
- **Wash your hands regularly with soap.**
- **Contact your medical doctor and others by phone.**
- **Only when cleared by your doctor can you return to your normal routine.**

1. If athletes feel sick

- a. With symptoms, athletes and entourage should take a break from training and call their team or family doctor and follow their instructions. They should inform team members and other recent contacts.
- b. Such athletes and entourage should be separated from the rest of the team, self-isolate and carefully disinfect their hands. They should wear a face mask during acute symptoms and ensure that the mask is used correctly.
- c. The separation should be at least 2-3 days more than the actual signs of infection and should be decided by the attending doctor. It is wise to have separated toilets for such athletes to break the transmission of virus on hard surfaces.

2. How can I exclude Coronavirus (Sars-CoV-2 / COVID-19) infection if I have symptoms?

- a. Fever is uncommon with most colds and upper respiratory infections but is more common with COVID-19 and the flu.
- b. The probability of infection with the coronavirus (Sars-CoV-2 / COVID - 19) is very high in regions where the infection is widespread (community infection). Caution is generally required for any contact outside the family.
- c. Most infections with Coronavirus (Sars-CoV-2 / COVID - 19) are mild (in many there may be very few or no symptoms), but more severe complications may arise, particularly in older and immunocompromised people.
- d. Coronavirus (Sars-CoV-2 / COVID - 19) infection should be considered a possible cause of infection in acute respiratory illness and should be assessed by a medical doctor.
- e. Transmission time appears to be 14 days. During that time an infected person may transmit the virus to others, even if there are no clinical signs of infection. During this asymptomatic period, the virus may also not be detectable by the PCR (Nasal swab) or serological (Blood) test.

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

3. Return to Sport after Coronavirus infection (SARS-CoV-2 / COVID-19)

(NOTE: All the recommendations for return to sport after COVID-19 are expert consensus; no controlled studies available).

- a. Athletes and entourage **who are ill and had contact** with an infected individual or someone who traveled to affected regions should seek medical advice in a public health office where Coronavirus (Sars-CoV-2 / COVID - 19) testing can be performed (following and according to local health instructions).
- b. **Work-up-plans for athletes** have been published^{9, 14, 22, 23}
- c. All athletes with symptoms should be seen by their sports medicine doctor before resuming training.
- d. In athletes with a **positive SARS-CoV-2 test WITHOUT** signs of infection or symptoms, a 14-day-quarantine will likely be required, but it is important to follow local public health or WHO recommendations regarding further testing and isolation. Only light activity for 2 weeks and then return to training should be considered^{22,23,13}.
- e. Athletes with a **positive SARS-CoV-2 test WITH symptoms** but **WITHOUT** confirmed pneumonia, should be examined by their doctor. No heavy training for 2 to 4 weeks, then gradual return to training should be considered^{13,12,22,23}
- f. In athletes with a **positive SARS-CoV-2 test WITH pneumonia**, exercise testing with measurement of oxygen saturation should be performed. Further examinations should take place as recommended. No sports for at least 4 weeks, then gradual return to training under doctor's supervision should be considered^{9,12, 22, 23}.
- g. In athletes with **positive SARS-CoV-2 test WITH suspected or confirmed myocarditis** with/without pulmonary involvement, cardiac testing should be performed. If there is no evidence of myocarditis, return to sports may be permitted. If myocarditis is diagnosed, no sports for at least 3 months with gradual return to training after reevaluation by and under the supervision of a cardiologist^{9, 14}

4. Is there a role for vaccination?

- a. YES, there is now vaccination available for Coronavirus (Sars-CoV-2 / COVID-19). Many pharmaceutical companies continue to work on vaccines. The current types of vaccines are adenovirus-based or RNA-based. WORLD ROWING SMC recommends that any athlete and staff should be vaccinated. The choice of vaccine is depending on availability, national regulations, individual conditions and recommendation of the physician. Vaccination decreases transmission, and, severity, morbidity and mortality of SARS-CoV-2 infections.²⁰
- b. **WORLD ROWING SMC recommends strongly the vaccination for all athletes competing and traveling, furthermore for coaches and staff**
- c. Vaccination should be on a training-free day without stress, the day after vaccination. training should be light.
- d. Annual vaccination is recommended with quadrivalent flu vaccines against viral influenza for athletes and their entourage. Flu vaccination is most effective in the northern hemisphere in November and in the southern hemisphere in June and is updated annually by the WHO.

5. The role of prospective SARS-CoV-2 screening?

- a. World Rowing has released an Event testing guideline for World Rowing Events at 23 April 2021. The policies and procedures presented are World Rowing's recommendations for implementation by local public health authorities in host countries of events. However, local authorities have jurisdiction and all local

1. revision, 18. October 2020
2. 2. Revision, May 31, 2021

guidelines and policies take precedence and must be followed by all participants at World Rowing events in 2021.

- b. Testing before or after an event is advised in the case of positive cases or ill cases and contacts in a NF. National authorities may demand testing when crossing borders.
- c. WORLD ROWING presently does not advise general asymptomatic testing when a very low rate of positive cases is expected. For example, when specificity of the PCR test for detection of virus antigen is assumed very high at 99.9% and prevalence of COVID is assumed to be very low at 0.1%, this would generate 50 % false positive cases, when specificity is already 99 %, it would generate 90% false positives (prevalence 0.1%).
- d. A second test significantly increases the diagnostic certainty. For groups of people who have spent a long time together (e.g. teams in training camps or families), the probability of the correctness of positive test results increases with the number of positive test results within the community (because infection within the community is likely).
- e. Conversely, the opposite is true: if there are only a few positive test results in communities, this reduces the probability that these results are correct. Individual positive tests in communities (without documented contact to risk areas or symptoms etc.) must therefore be treated with great caution. Such test results would in fact be (arithmetically) more false than correct.
- f. If the majority of a team is tested positive during a training camp, then the results are almost certainly correct. However, if only one or two of the 30 people in the team test positive, a false positive result is much more likely.
- g. The PCR-test is very specific and has a high sensitivity. There are also various rapid tests available. These have lower specificity and sensitivity which means a higher rate of false positive and negative results and therefore used and interpreted with caution. But when technology is improved, rapid test may a useful tool.

1. revision, 18. October 2020
2. Revision, May 31, 2021

Where is information available?

The following webpages allow the most recent international information:

- **WHO-Websites:**
 - <https://www.olympic.org/athlete365/covid-19-resources/>
 - <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- **FISA (will be updated regularly)**
 - http://www.worldrowing.com/mm/Document/General/General/14/28/56/FISA_ReturntoRegattasGuidance-Version2180920_Neutral.pdf
- **WHO Risk assessment tool** helps to assess risks, mitigate spread, and enhance communication with local health authorities:
 - <https://www.who.int/publications-detail/key-planning-recommendations-for-mass-gatherings-in-the-context-of-the-current-covid-19-outbreak>
 - Event risk and mitigation-tool with rowing-specific mitigation checklist: <https://idom.worldathletics.org/>
- **Return to Sport after Covid:**
 - <https://www.germanjournalsportsmedicine.com/archiv/archive-2020/issue-5/position-stand-return-to-sport-in-the-current-coronavirus-pandemic-sars-cov-2-covid-19/>

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