

USEFUL INFORMATION FOR THE SHOOTING SPORT FAMILY ON COVID-19

Prepared by the ISSF-Medical Committee with the assistance of Dr. Neda Nozari

For specific guidelines, please see the Return to Play Guidelines that have been prepared jointly by the ISSF and World Para-Sport Medical Committees. [\(Add hyperlink URL\)](#)



Introduction

Coronavirus disease 2019, commonly known as “COVID-19”, is an infectious disease caused by severe acute respiratory syndrome coronavirus¹. Coronaviruses are a large family of viruses known to cause respiratory infections ranging from the common cold to more severe fatal diseases in humans.

¹ [Coronavirus disease 2019 \(COVID-19\)—Symptoms and causes](#)". *Mayo Clinic*. Retrieved 14 April 2020.

COVID-19 poses a serious health threat to humanity and currently affects 213 countries and territories around the world. The situation world-wide has been evolving daily since the World Health Organization declared it a pandemic on March 13, 2020² and it is far from being resolved.

As a result of COVID-19, all shooting competitions on the ISSF calendar have been cancelled for the balance of 2020.

How COVID-19 spreads

The disease spreads from person to person through small droplets produced from the nose or mouth when a person infected with COVID-19 coughs, sneezes, talks or exhales³. These droplets usually do not travel through air over long distances. However, those standing in close proximity may inhale the droplets or touch objects and surfaces on which the droplets fell and become infected. It is both possible to catch COVID-19 by inhaling the droplets or by touching objects or surfaces where the droplets might have landed. The virus gets transferred by entering another person's body by way of eyes, nose, or mouth⁴. This is why individuals are warned to avoid touching their face or rubbing their eyes without first carefully washing their hands, and why wearing masks and protective gloves has been recommended. Finally, the transmission may also occur through smaller droplets that are able to stay suspended in the air for longer periods of time in enclosed spaces.⁵

COVID-19 Symptoms

The most common COVID-19 symptoms are fever, dry cough, shortness of breath or breathing difficulties, fatigue and loss of smell and taste⁶. Some patients may have aches, nasal congestion,

² World Health Organization. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>.

³ ["How COVID-19 Spreads"](#). U.S. [Centers for Disease Control and Prevention \(CDC\)](#). 2 April 2020. [Archived](#) from the original on 3 April 2020. Retrieved 3 April 2020 ; [European Centre for Disease Prevention and Control](#). Retrieved 30 April 2020

⁴ Ibid 2.

⁵ ["How is COVID-19 transmitted?"](#). [World Health Organization \(WHO\)](#). Retrieved 12 July 2020.

⁶ ["The prevalence of symptoms in 24,410 adults infected by the novel coronavirus \(SARS-CoV-2; COVID-19\): A systematic review and meta-analysis of 148 studies from 9 countries"](#).

runny nose, sore throat, or diarrhea. These symptoms are usually mild and begin gradually. It is possible for one to become infected without developing any symptoms. Fortunately, 80% of people recover from the disease without any special treatment. It is critical for everybody to seek medical care for fever, cough, and difficulty breathing in the early phase⁷. The time from exposure to onset of symptoms is typically around five days but may range from two to fourteen days⁸.

Protective measures

There are currently no proven vaccines or specific antiviral treatments for COVID-19.

Please follow the latest information and real news on the COVID-19 outbreak, available on the WHO website www.who.int, and through your national and local public health authority. The situation is unpredictable and fluctuating daily. It is important to check regularly for the latest news⁹.

You can protect yourself by taking the following precautions:

- Frequently thoroughly wash your hands with an alcohol-based hand rub (at least 60%) or wash them with soap and water (warm or cold) at least 20 seconds¹⁰.
- Maintain social distance (2m) between yourself and others.
- Quarantine/self-isolate if you have any symptoms or if you have recently returned from travel abroad.
- Avoid touching eyes, nose and mouth.
- Stay home or seek medical attention if you feel unwell
- Follow the directions of your local health authority.
- Wear a protective face covering or mask.

⁷ Ibid 2

⁸ [Symptoms of Coronavirus](#)". U.S. *Centers for Disease Control and Prevention* (CDC). 13 May 2020. Archived from the original on 17 June 2020. Retrieved 18 June 2020 and Velavan TP, Meyer CG (March 2020). "[The COVID-19 epidemic](#)". *Tropical Medicine & International Health*. **25** (3): 278–280.

⁹ Ibid 2

¹⁰ Ibid and Toresdahl BG, Asif IM. Coronavirus disease 2019 (COVID-19): considerations for the competitive athlete.

Face coverings and masks

Face masks are recommended for use by the general the public to help battle the COVID-19 crisis¹¹. A disposable face mask can only be used once¹². Reusable masks should be washed frequently.

Although face masks may induce a false sense of security if they are incorrectly fitted, not washed or changed frequently enough, or if virus caught within the mask and transferred to the person's hands during removal¹³ their use is now strongly recommended if not mandatory in most countries.

Please follow the following steps to ensure face masks are correctly used.

1. Before touching the mask, clean hands with an alcohol-based hand rub or soap and water.
2. Take the mask and inspect it for tears or holes.
3. Ensure the proper side of the mask faces outwards (the colored side).
4. Place the mask on your face. Pinch the metal strip or stiff edge of the mask (topside). Mask should attach to your nose.
5. Pull down the mask's bottom and cover your mouth and chin.
6. After use, remove the elastic loops from behind the ears while keeping the mask away from your face and clothes, to avoid touching potentially contaminated surfaces of the mask.
7. Discard the mask in a closed bin immediately after use.
8. Perform hand hygiene after touching or discarding the mask¹⁴.
9. If you are using reusable or non-disposable face masks, make sure you wash them regularly.

¹¹ Wackerhage H, Everett R, Krüger K, Murgia M, Simon P, Gehlert S, Neuberger E, Baumert P, Schönfelder M. Sport, Exercise and COVID-19, the Disease Caused by the SARS-CoV-2 Coronavirus. Dtsch Z Sportmed. 2020; 71:E1-2.

¹² Ibid 11

¹³ Ibid 10

¹⁴ Ibid 11

10. IF you are using one time use disposable face masks, they should not be reused.

Athletes should be made aware that the use of face masks when exercising may decrease the availability of oxygen by 14% on average and increase aspirated CO₂ levels by 30 times. As such, when expending more effort, the use of mask in athletes may cause hypoxic and hypercapnic.¹⁵

Athletes should also be aware that face masks absorb an increased amount of moisture during exercise and may lose their protective effect after 10-15 min thus restricting the protective effect. Accordingly, if you are using a mask while exercising or training, more than one mask should be available for use¹⁶.

Virus contamination on surfaces

Coronaviruses may persist on surfaces for a few hours or up to several days. This may vary under different conditions (e.g. type of surface, ventilation temperature, or humidity of the environment)¹⁷.

In poorly ventilated areas, the virus can remain viable for up to 72 hours on plastic and stainless steel, up to four hours on copper, up to 24 hours on cardboard. The date is unclear for fabric¹⁸.

Individuals should thus regularly wipe and clean surfaces in their home and avoid touching surfaces in public. As most public places now offer the use of hand sanitizers, these should be used whenever possible to prevent the virus from spreading and being transmitted by way of surfaces.

¹⁵ Pifarré F, Zabala DD, Grazioli G, de Yzaguirre I, Maura I, COVID 19 and mask in sports, Apunts Sports Medicine (2020).

¹⁶ Ibid 10

¹⁷ Ibid 11

¹⁸ World Health Organization. COVID-19 and food safety: guidance for food businesses: interim guidance, 07 April 2020. World Health Organization; 2020 Apr 7.

Shopping

The risk of catching COVID-19 from a package that has been moved, traveled, and exposed to different conditions and temperature is low¹⁹. The risk comes from close contact with an infected person while shopping or receiving deliveries²⁰.

There is also no evidence to confirm that COVID-19 virus can be transmitted through food or food packaging or coins or banknotes. In shopping place, keep social distance from others and avoid touching your eyes, mouth, and nose. Sanitize the handles of shopping trolleys or baskets before shopping if it is possible.

As always, once home, wash your hands thoroughly and also after handling and storing your purchased products²¹.

Cleaning at home

Clean and disinfect surfaces that are regularly touched in your home. Common surfaces that should be regularly cleaned include door handles, tables, chairs, handrails, kitchen and bathroom surfaces, taps, toilets, light switches, mobile phones, computers, tablets, keyboards, remote controls, game controllers, and favorite toys.

Clean with soap or detergent and water if a surface is dirty. Then use a disinfectant product containing alcohol 70% or bleach. While vinegar and other natural products are good to clean, they are not recommended for the purpose of disinfecting.

Follow cleaning product instructions for safe and effective use, including precautions. It is better to wear gloves when applying disinfectant product and to do so in well ventilated areas to avoid breathing in the toxins often present in these disinfectants. It is also important not to wipe cleaning solutions off as soon as they have been applied it to a surface. Many disinfectant products, such

¹⁹ Ibid 2 and 10

²⁰ UNICEF. <https://www.unicef.org/coronavirus/cleaning-and-hygiene-tips-help-keep-coronavirus-covid-19-out-your-home>.

²¹ Ibid 2

as wipes and sprays, may need to stay wet on a surface for several minutes in order to be effective. Always read the directions to ensure that you are using the products as recommended and to avoid damaging sensitive items.

It is currently unclear how long the COVID-19 virus can survive on fabric. Consider that many items of clothing have plastic and metal elements on which it might live for a few hours to several days.

As precautionary measures:

- Remove your shoes and change into clean clothes when you return home after being in crowded places or shooting venues,
- Wash your hands with soap and water immediately after returning home from any outing,
- Clean bed sheets, towels and clothes regularly, (do not shake dirty laundry to minimize the possibility of dispersing the virus through the air).
- Launder items with soap or detergent, using the warmest appropriate water setting and dry items completely. These steps help to kill the virus²².
- Consider that certain materials like leather have special cleaning requirements²³. To avoid damaging such items, always follow the instructions.

Travel

Although countries are also performing entry screening for signs and symptoms of COVID-19.

If a 14-day quarantine is not a requirement in your country upon returning from travel, you should still consider in-home isolation for 14 days after returning from any destinations.

Needless to say, domestic travel is also as a common cause of person-to-person spread.²⁴

²² Ibid 20

²³ <https://www.safeworkaustralia.gov.au/covid-19-information-workplaces/cleaning-prevent-spread-covid-19>.

²⁴ <https://www.safeworkaustralia.gov.au/covid-19-information-workplaces/cleaning-prevent-spread-covid-19>.

Training

As a result of the safety advice of international and national organizations, some shooting venues are operating at minimum capacity until further notice.

Some coaches have provided and sent out remote training programs besides some technical equipment for shooters to train at their homes.

Studies showed that moderate intensity physical activity (30–60 min with intensity 60-80% maximum capacity for 3-5 days per week) has positive effects on immune system response against viral infection²⁵. But low and high intensity physical activity appear to be associated with an increased risk of respiratory infection. Elite shooters need to undertake vigorous or high-intensity sessions to keep shooting function in optimum level. Studies recommend elite shooters can continue with high intensity training without increased risk of COVID-19, providing there is no sudden increase in training load²⁶. A well-balanced training program includes a combination of aerobic, strengthening, stretching and balance exercises besides shooting training.

Keep in mind due to the high risk of spread (by person to person or contaminated surfaces), it is strongly advised to exercise in safe, clean, and private facilities with good ventilation. It is always best to use one's own personal equipment.

If you do exercise or train outside your home or private facilities, carefully follow social distance. In the absence of wind, social distance for walking fast at 4 km/h is about 5 m , 10 m for running at 14.4 km/h and >20 m for cycling. This social distance is critical to avoid substantial exposure droplets from an infected person²⁷.

The careful planning and organization of altitude training camps are more critical during the current COVID-19 pandemic. Altitude training may induce a greater susceptibility to COVID-19

²⁵ Martin SA, Pence BD, Woods JA. Exercise and respiratory tract viral infections. *Exercise and sport sciences reviews*. 2009 Oct; 37(4):157 and Hull JH, Loosemore M, Schwellnus M. Respiratory health in athletes: facing the COVID-19 challenge. *The Lancet Respiratory Medicine*. 2020 Jun 1; 8(6):557-8.

²⁶ Ibid

²⁷ Blocken B, Malizia F, van Druenen T, Marchal T. Towards aerodynamically equivalent COVID19 1.5 m social distancing for walking and running. Questions and Answers. Website Bert Blocken, Eindhoven University of Technology (The Netherlands) and KU Leuven (Belgium). Disponibile su: <http://www.urbanphysics.net/COVID19.html> (ultimo accesso 21 aprile 2020). 2020.

infection and its side effects by increasing the level of hypoxemia and reducing immune function. Clinicians advise adopting specific caution before, during and in return from altitude exposure²⁸.

Shooting venues

Follow all principles on the COVID-19 outbreak by your national and local public health authority for sport places. Following items recommends for shooting ranges.

- Clean and disinfect frequently touched surfaces on the shooting ranges at least daily, or between uses as much as possible. Disinfectants are usually only necessary if a surface has been contaminated with potentially infectious material. When and how often should undertake disinfection depends on contaminated material being present at the shooting ranges²⁹.
- In indoor shooting ranges increase air circulation as much as possible. Ensure ventilation systems or fans operate properly.
- Keep each shooter's belongings separated from others and in individually labeled containers, bags, or areas.
- Shooter should train at every other or every 3rd firing point where possible to ensure proper distancing.
- If food is served at shooting range, consider pre-packaged boxes or bags for each shooter instead of a buffet or family-style meal. Avoid sharing food and dishes.
- Ensure that all water systems are safe to use.
- Encourage staff and shooters to bring their own water to minimize touching and drinking from water fountains. If still in use, drinking fountains should be cleaned and disinfected regularly.
- Educate coaches, staff, and shooters on all safety protocols.
- Offer hand sanitizer and encourage hand washing.

²⁸ Manferdelli G, Bishop DJ, Franchi MV, et al. Br J Sports Med Br J Sports Med 2020; 0:1–2.

²⁹ Ibid

- Close off areas used by a sick staff and do not use surfaces or shared objects until after cleaning and disinfecting them. Wait at least 24 hours before cleaning and disinfecting. If 24 hours is not feasible, wait as long as possible³⁰.
- Restrooms should be opened with functional toilets. Restrooms must be cleaned and disinfected regularly, particularly high-touch surfaces such as faucets, toilets, doorknobs, and light switches and be well stocked with hand washing supplies, including soap and paper towels for drying hands or hand sanitizer with at least 60% alcohol and no touch trash cans³¹.
- During the global COVID-19 pandemic, sporting events without spectators could allow a safe situation with a controlled COVID-19 infection risk.
- Although, pre-participation screening of each shooter by specific tests for COVID-19 could prove to be expensive³², ideally shooters should be screened for COVID-19 infection and COVID-19 symptoms before training and certainly before competing in any event.

Cleaning of shooting venues/ranges

The following steps should be followed to clean surfaces and equipment at the range:

- Wear gloves when cleaning. Gloves should be discarded after each clean.
- Always clean from the cleanest surfaces to the dirtiest surfaces. This stops the transfer of germs to cleaner surfaces and allows you to physically remove and dispose of the largest possible number of germs.
- If you need to use a disinfectant, clean the surface first using detergent then apply a disinfectant or use a combined detergent and disinfectant (Please read the instruction of each equipment and material carefully to make sure not use harmful material for shooting equipment). A disinfectant will not kill germs if the surface has not been cleaned first. Apply disinfectant to surfaces using disposable paper towel.

³⁰ CDC, <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/youth-sports.html>.

³¹ CDC, <https://www.cdc.gov/coronavirus/2019-ncov/community/parks-rec/park-administrators.html>.

³² Ibid 20

- Allow the disinfectant to remain on the surface for the period of time required to kill the virus (contact time) as specified by the manufacturer or leave for 10 minutes before wiping.
- Use removable washable cloths or disposable cloths for soft or porous surfaces that require regular cleaning. Replace these as regularly as you would clean the surfaces³³.

Return to shooting sport after recovering from COVID 19

Prevention of COVID-19 is imperative for a competitive shooter to minimize interruptions in training. The adverse effect of COVID-19 influences respiratory system and aerobic capacity for long term³⁴.

Notwithstanding all precautionary measures that may be taken, it is possible that some shooters or their coaches will contract COVID-19. As stated above, strict 2-week isolation at minimum is highly recommended to each shooter or coach or staff with suspected or established COVID-19 disease³⁵.

Isometric and dynamic contractions may decrease with fever so it is imperative to remain at rest until complete recovery (normal heart rate and body temperature)³⁶.

Once the symptoms have disappeared and the individual is on his or her way to recovery, there are two strategies for discontinuing home isolation depending on availability of testing resources.

1. Test-based strategy (with the assistance a physician or clinic)
 - No fever without the use of medication
 - Resolution of respiratory symptoms
 - Two consecutive negative COVID-19 tests (≥ 24 hours apart)

³³ <https://www.safeworkaustralia.gov.au/covid-19-information-workplaces/cleaning-prevent-spread-covid-19>.

³⁴ Ibid 10

³⁵ Ibid 10

³⁶ Ahmadinejad Z, Alijani N, Mansori S, Ziaee V. Common sports-related infections: a review on clinical pictures, management and time to return to sports. Asian journal of sports medicine. 2014 Mar; 5(1):1.

2. Non test-based strategy (based on common sense)

- At least 7 days have passed since any symptoms last occurred
- At least 72 hours/3 days have passed since the resolution of all symptoms without the use of medication.

In either scenario, a shooter can initiate low-intensity indoor training at least 72 hours after resolution of symptoms³⁷.

It should be noted that coronaviruses can cause injury to heart muscles as well as the respiratory system. Therefore, further to an Athlete recovering from COVID-19, team physicians should do a complete examination to rule out serious injuries in a shooter before he or she resumes heavy training in order to avoid complications³⁸. Shooters should perform 10-14 days of mild exercise after recovery then start normal shooting training. Two days of light exercise for every day of rest are recommended³⁹.

The criteria also differ between return to training and taking part in a competition. Competition requires full recovery and a perfect health state of shooter⁴⁰. Some clinicians advise a more prolonged rest period and conservative return (≥ 10 days from onset of symptoms plus 7 days from symptom resolution) before a shooter who has fully recovered from COVID 19 may be entered to competitions⁴¹.

Coping with stress

It is common for an athlete to feel sad, grief, anxiety, frustration, and sadness during a crisis, suspending seasons and canceling competitions⁴² all of which cause sleep disturbances. This however is the new reality for the foreseeable future.

³⁷ Ibid 6

³⁸ Yanguas X, Dominguez D, Ferrer E, Florit D, Mourtabib Y, Rodas G. Returning to Sport during the Covid-19 pandemic: The sports physicians' role. *Apunts Sports Medicine*. 2020 Apr 1; 55(206):49-51.

³⁹ Ibid 34

⁴⁰ Gałązka-Franta A, Jura-Szołtys E, Smółka W, Gawlik R. Upper respiratory tract diseases in athletes in different sports disciplines. *Journal of human kinetics*. 2016 Dec 1; 53(1):99-106

⁴¹ Hull JH, Loosemore M, Schwellnus M. Respiratory health in athletes: facing the COVID-19 challenge. *The Lancet Respiratory Medicine*. 2020 Jun 1; 8(6):557-8

⁴² Ibid 6

Athletes are encouraged in this time “off” to routinely follow a healthy lifestyle including diet, sleep and exercise. Training routines for shooting sport should try to be maintained as much as possible. Or use this time to follow a new training program prepared by your coach. Either way you need to maintain your physical and mental well-being.

Stay in regular contact with your friends and coaches by socially distanced meetings, email, phone or through social media. Be creative, stay flexible, and maintain your fitness and shooting skill. Consult with your psychotherapist if required.

Conclusion

This is a challenging time the ISSF and its athletes. All major shooting competitions have been suspended or canceled due to COVID-19 since March 2020. IOC announced that the Olympic and Paralympic Games Tokyo 2020 would be postponed to summer 2021.

The ISSF’s current focus is on the prevention of a COVID-19 spread in the shooting-sport family. The ISSF Medical Committee is committed to sharing scientific data in a transparent and supportive way and protect from the health and wellbeing of all. We appreciate that shooters have specific needs and hope that this article has correctly identifies some challenges and questions that all shooters currently have.

For additional specific guidelines, please see the Return to Play Guidelines that have been prepared jointly by the ISSF and World Para-Sport Medical Committees.

<https://www.issf-sports.org/getfile.aspx?mod=docf&pane=1&inst=473&file=ISSF-Return-to-Sport-COVID-19-Guidelines.pdf>

You are also strongly encouraged to follow the real news on the COVID-19 outbreak, available on your national and local public health authority.