

Protocol: Use of Masks or Face Coverings During Exercise

Date: July 22, 2020

Last amended: August 13, 2020

Issued by: Infectious/Communicable Disease Task Force

Affected parties: All Temple University employees, students, guests, visitors and vendors.

These guidelines are issued in accordance with the university Infectious/Communicable Disease policy, policy No. 04.64.01 and the university's Community Health Policy, policy No. 04.64.02 and other applicable policies. These guidelines give further detail with regard to actions required in safety protocols for COVID-19.

SCOPE: This statement addresses our position on the use of cloth face coverings on Temple University campuses while engaging in indoor exercise and for outdoor exercise where physical distancing cannot be maintained.

SUMMARY: A cloth face covering is required in all university fitness and recreation facilities. Experts report that exercising with a cloth face covering is safe for most people, as long as they monitor the intensity of their workouts and stop exercising if they feel any symptoms such as lightheadedness, dizziness, or numbness and tingling. Most people can exercise safely with a cloth face covering, provided that they do not have any pre-existing lung or cardiovascular issues and are monitoring their body's reaction to the workout.

TERMINOLOGY

Cloth face covering—an item of clothing designed to reduce distribution of the wearer's respiratory droplets (e.g., from breathing, coughing and/or sneezing)

NOTE: For the purpose of this guidance, face coverings specifically

- fully cover the user's nose and mouth;
- fit snugly against the sides of the face so there are no gaps; and
- do not cause difficulty breathing while wearing.

For the purpose of this guidance, face coverings specifically are not

- medical devices;
- personal protective equipment (PPE) or masks intended for use by healthcare personnel;
- bandana-style (or other fabrics that loosely cover the face and do not fit snugly against the sides of the face with no gaps);
- vented masks¹ that have holes in the fabric to facilitate breathing through the nose or mouth

RECOMMENDATIONS

Given recommendations from the Centers for Disease Control and Prevention (CDC) and other scientific findings with regard to COVID-19 transmission, cloth face coverings should be worn

¹ The purpose of masks is to keep respiratory droplets from reaching others to aid with source control. Masks with one-way valves or vents allow exhaled air to be expelled out through holes in the material. This can allow exhaled respiratory droplets to reach others and potentially spread the COVID-19 virus. Therefore, CDC does not recommend using masks if they have an exhalation valve or vent. CDC reference [here](#).

as much as possible when indoors. Guidance from Pennsylvania and from Philadelphia also expect the use of cloth face coverings while engaging in exercise.

1. Cloth face coverings are required inside all university buildings, including fitness and recreation facilities.
2. During exercise, cloth face coverings should be worn.
3. When exercising with a cloth face covering, individuals must monitor their own physical health during workouts, bring several cloth face coverings in order to replace when wet, and wash cloth face coverings following use.
4. If wearing a cloth face covering while exercising is not possible because of difficulty breathing or other health impacts, individuals should terminate exercise activity.
5. Ensure that physical distancing, hand hygiene and disinfecting protocols are followed scrupulously by staff and patrons in fitness and recreation facilities.

SUPPORTING EVIDENCE

Note: Oftentimes, “face coverings” and “masks” are used interchangeably in research studies and reporting about that research, even though they are very different products and may have different impacts on respiration during exercise. Only cloth face coverings should be worn when exercising indoors at Temple. Please note the definition in the Terminology section above.

1. Masks may reduce airflow and oxygen saturation.

- a. A 2014 study published in *The Annals of Occupational Hygiene* found that surgical masks, both sealed and unsealed, increase airflow resistance. Sealed masks were found to be the most uncomfortable, comparable to N95 respirators in level of airflow resistance (Skaria & Smaldone, 2014). Note: most patrons of fitness facilities will not be wearing surgical masks or respirators, but are likely to be wearing cloth face coverings which could produce different effects.

2. Masks can increase the intensity of a workout. Individuals should expect to fatigue faster than usual when wearing a mask while exercising and should monitor their level of effort and cease exercising if they experience dizziness, numbness and tingling, or lightheadedness.

- a. According to an article in the New York Times, which collected the findings of several small studies, heart rates are about 8–10bpm higher when exercising at the same relative intensity with a mask on than without (Reynolds, 2020). The intensity of the workout should be reduced, or the workout should be ended, if the athlete feels lightheaded or dizzy.
- b. Cloth masks or neck gaiters could cause some buildup of carbon dioxide and simulate the effects of altitude training on a small scale. While it is unlikely that this will be a problem for most people, it could be for those with underlying conditions or those participating in high-intensity training. People with existing heart or lung conditions should be exercising at lower intensities than they would without a mask. People who are new to exercising or haven’t exercised in a long time should carefully monitor the intensity of their workouts and stay at a moderate or low intensity to avoid dizziness or fainting (Khan et al., 2020).
- c. Because wearing the protective mask decreases the flow of air into the individual’s lungs, and thus also decreases the flow of oxygen through the

bloodstream and to the muscles, training will be more difficult. **Everyone wearing a mask while exercising should expect to fatigue faster than otherwise, and may not be able to perform at the same level as they would without a mask.** Over time, the body should adapt by becoming more efficient at metabolizing oxygen, but this may take weeks (Capritto, 2020).

- d. Mask use can decrease athletic performance. A study done at the University of Mississippi found that athletes were able to complete fewer reps when exercising the lower body (Andre et al., 2018). The efficacy of mask use as resistance training is not effective at increasing athletic ability (Paoli et al., 2017).

3. Extra precautions should be taken to ensure the safety and efficacy of wearing a mask while working out. Masks should be worn unless it is physically unsafe for the participant to do so.

- a. Face coverings and masks can get wet during a workout due to a buildup of sweat, which will make it more difficult to breathe and will reduce the efficacy of the mask as a preventive measure. It is important to bring extra face coverings or masks in order to replace one that has gotten damp or wet, especially if the athlete will be exercising for longer than 30 minutes. Paper surgical masks should be avoided because they quickly become wet; cloth face coverings made from breathable materials such as polyester can lessen the buildup of moisture. Any face covering or mask should fit properly and be comfortable, as constant adjustment of the mask or wearing a mask that does not fit reduces the efficacy of wearing a mask (Reynolds, 2020).
- b. Masks should have two layers of fabric to avoid overheating or constriction of breathing (Khan & van Rensburg, 2020). Two layers should be suitable for providing comfort and protection against infection.

Authorities, References, Relevant Guidelines

Reference	Last Date	Link
Governor of PA: Plan for Pennsylvania	July 19, 2020	Link here
Order of the Secretary of the Pennsylvania Department of Health Directing Public Health Safety Measures for Businesses Permitted to Maintain In-person Operations (April 19, 2020)	July 19, 2020	Link here
Department of Education Guidance for Postsecondary Education	July 19, 2020	Link here

American Industrial Hygiene Association Guidance for Reopening Gyms and Workout Facilities	July 19, 2020	Link here
CDC Guidelines for How to Clean and Disinfect	July 19, 2020	Link here
City of Philadelphia Safer at Home Guidance	July 19, 2020	Link here
Governor of PA Guidance for All Sports Permitted to Operate During the COVID-19 Disaster Emergency To Ensure the Safety and Health of Employees, Athletes and the Public	July 19, 2020	Link here
City of Philadelphia Reopening Guidance: Outdoor Recreational Activities and Sports	July 19, 2020	Link here
ASTM 2100: Standard Specification for Performance of Materials Used in Medical Face Masks	July 19, 2002	Link here
CDC: About Face Coverings and Masks	August 13, 2020	Link here

Further References

Andre, T. L., Gann, J. J., Hwang, P. S., Ziperman, E., Magnussen, M. J., Willoughby, D. S. (2018, Aug). Restrictive Breathing Mask Reduces Repetitions to Failure During a Session of Lower-Body Resistance Exercise. Journal of Strength & Conditioning Research 32: 8. Retrieved from <http://web.b.ebscohost.com.libproxy.temple.edu/ehost/detail/detail?vid=6&sid=5b27a43a-5c07-4de7-b6d7-1f0145a27305%40pdc-v-sessmgr01&bdata=JnNpdGU9ZWwhvc3QtbGl2ZSZzY29wZT1zaXRi#AN=131162199&db=s3h>

Bottoms, L. (2020). Why it could be dangerous to exercise with a face mask on. Retrieved from <http://theconversation.com/why-it-could-be-dangerous-to-exercise-with-a-face-mask-on-140277>

Capritto, A. (2020). How to exercise with a face mask – and what not to do. Retrieved from <https://www.cnet.com/health/how-to-exercise-with-a-face-mask/>

Goldman, T. (2020). Just keep moving. and sometimes, double your distance. Retrieved from <https://www.npr.org/2020/04/01/825143172/just-keep-moving-and-sometimes-double-your-distance>

Khan, K., Blanco, J. & Janse van Rensburg, D. (2020). Should people wear a face mask during exercise: What should clinicians advise? Retrieved from <https://blogs.bmj.com/bjbm/2020/06/12/should-people-wear-a-face-mask-during-exercise-what-should-clinicians-advise/>

Paoli, A., Gentil, P., Moro, T., Marcolin, G., & Bianco, A. (2017, Dec 22). Resistance Training with Single vs. Multi-joint Exercises at Equal Total Load Volume: Effects on Body Composition, Cardiorespiratory Fitness, and Muscle Strength. *Frontiers in Physiology* 8: 1105. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5744434/>

Q&A: Wearing a face mask while working out. (2020). Retrieved from <https://about.underarmour.com/news/2020/06/expert-advice-wearing-face-mask-while-working-out>



Reynolds, G. (2020a, June 17,). Exercising while wearing a mask. *New York Times* Retrieved from <https://www.nytimes.com/2020/06/17/well/move/exercising-while-wearing-a-mask.html>

Reynolds, G. (2020b, April 15,). For runners, is 15 feet the new 6 feet for social distancing? <https://www.nytimes.com/2020/04/15/well/move/running-social-distancing.html>

Skaria, S. & Smaldone, G. (2014, July). Respiratory Source Control Using Surgical Masks with Nanofiber Media, *The Annals of Occupational Hygiene* 58: 6 p. 771–781. <https://doi.org/10.1093/annhyg/meu023>

Appendix A: Types of Respirators and Face Coverings

Types of Respirators and Face Coverings

	N-95 Respirator	Medical-Grade Surgical Mask	Disposable Face Mask	Face Covering
Description	Designed to protect the wearer from exposure to airborne particles by using layers of filter material. A proper seal between the user's face and the respirator forces inhaled air through the respirator's filter material, thereby providing protection. Available in various sizes needing proper selection.	FDA-approved mask to protect the wearer from large droplets, splashes or sprays of bodily or other hazardous fluids. It helps to contain the wearer's respiratory emissions.	Commercially manufactured mask that helps to contain the wearer's respiratory emissions.	Hand-made or commercially manufactured face covering that helps to contain the wearer's respiratory emissions.
Intended Use	Reserved for healthcare workers, and approved areas and/or task-specific hazards as determined by EHRS.		Face masks and coverings are intended for community use (office spaces, community areas where 6' social distancing cannot be maintained). Not required when working alone in an office.	
Use Limitations	Generally single use, discard when damaged or contaminated. Requires medical clearance and testing for proper fit.	Generally single use, discard when damaged or contaminated. Does not require medical clearance or testing for proper fit.	Generally single use, discard when damaged or contaminated. Face coverings can be reused with proper wash and care. Does not require medical clearance or testing for proper fit.	
Examples				

Appendix B: Infographic on the use of face masks during exercise

Practicalities of wearing a face mask during exercise

DURING EXERCISE

- Face covering should be comfortable & secure before leaving the house
- Maintain social distance
- Sanitise by taking along travel-sized sanitisers in your pocket
- Existing heart or lung conditions: exercise at a lower intensity than usual while wearing a mask
- Avoid touching your face during exercise
- Take a second mask/buff along during exercise sessions for replacement of the damp one

AFTER EXERCISE

- Effective Hand Hygiene**
when you return home after exercise
- Remove the Mask Correctly**
after exercise by untying it from behind. Avoid touching the front area of the mask, particularly the inner layer
- Wash Your Mask/ Buff Regularly**
preferably iron it dry and do not re-use masks designed for single use

TAKE NOTE
do not exercise with febrile illness