FOR RESEARCHERS: FACE COVERINGS, SURGICAL MASKS, AND RESPIRATORS

This fact sheet describes the various forms of face coverings and respiratory protection used at Yale, both on campus and in the research environment.

Face Coverings

For the latest university face covering requirements, please visit ehs.yale.edu/mask-guidance.

Face coverings can be either cloth or 3-ply disposable masks. KN95s can also be used as face coverings, but because of problems with quality control and the large percentage of counterfeit KN95s, are not recommended for this purpose.

See EHS’s separate fact sheet for more details about the Use and Care of Face Coverings.

Cloth Face Coverings

The University has provided everyone with cloth face coverings upon their return. These can be worn indoors in many University spaces, but cloth face coverings are not allowed inside Yale laboratories.

Surgical Masks as Face Coverings for Yale Laboratories

Everyone in a laboratory is provided a supply of disposable, water-resistant 3-ply disposable masks (surgical masks). These masks not only serve the wearer as a face covering, but—together with eye protection—the water-resistant 3-ply mask also protects the wearer from droplets—an important means of disease transmission.

Yale’s Personal Protective Equipment (PPE) policy requires every person in a laboratory to wear eye protection. Gloves and a lab coat are required when handling hazardous materials. PPE procedures for laboratories are described at https://ehs.yale.edu/sites/default/files/files/ppe-procedure-labs.pdf.

Face coverings are only effective if used properly:

- Wash hands or use hand sanitizer before putting on and removing the face covering.
- Face coverings should cover both your nose and mouth, to impede virus-containing respiratory droplets that can enter and be expelled from both the nose and mouth.
- If you have difficulty breathing when wearing a face covering, it should be removed.
- Laboratory surgical masks should be disposed of at the end of the day, or if damaged or contaminated. When removing your mask, only touch the loops that go around your ear.
Additional points about wearing surgical masks:¹

- You are not required to wear a surgical mask if doing so is contrary to your health or safety because of a medical condition. In this case, do not enter the laboratory. Contact EHS at ehs@yale.edu to determine if alternative protections can be provided.
- A surgical mask may be used as a face covering outside of the laboratory, but do not wear the same mask both inside and outside of the lab. As you do with other laboratory PPE—such as a lab coat and gloves—the surgical mask you wear in the laboratory should be removed when leaving the laboratory.
- Laboratories that use pyrophoric chemicals will be provided with FR-rated face masks. Contact EHS for more information.
- Wearing a mask can lead to problems with fogging of your eyewear. Note: The most effective products to prevent fogging of glasses and face shields consist of siloxane in alcohol (e.g., Rain-X), which create a hydrophobic film that bonds to the glass or plastic’s interior surface. Fogging can also be prevented by sealing the mask at the nose ridge. Paper tape has been successfully used for this by many users.
- Behind-the-head mask holders are available commercially. Some people prefer these for ear loop masks.

If respiratory protection is required to protect against hazardous materials in the lab, face coverings are not sufficient. EHS will conduct a risk assessment and recommend and train researchers on respiratory protection specific to their work, such as a KN95 mask, an N95 respirator, or a powered air-purifying respirator (PAPR).

**KN95 Masks**

KN95 masks are made to standards established by China and other Asian countries. Many of the KN95s in the United States were found to be counterfeit and it is difficult to tell from legitimate ones. Even the ones that are not counterfeit have been shown to have problems with fitting and cannot be used as a respirator for medical personnel. They are water resistant and provide good filtration, may be used as a face covering.

**N95 Respirators**

An N95 mask is a tight-fitting respirator that is designed to protect the wearer from aerosols or fine particles. Although primarily used by frontline medical personnel, EHS may specify their use as respiratory protection for research procedures or activities to protect against respiratory exposures to hazardous materials.

Individuals who use an N95 respirator must be medically cleared, trained, and fit tested to the proper style and size. It is important for the wearer to understand that to be effective, an N95 respirator must be tight-fitting and—at all times during its use—must fit snugly against the sides of the face so there are no gaps. During use, unfiltered air cannot be allowed to pass between the respirator and the wearer’s skin. If this occurs, the purpose of the respirator is defeated and the N95 respiratory offers no more protection than a surgical mask.

¹ Note that some surgical masks are certified to meet ASTM standards. ASTM standards are referenced by the FDA specifying performance requirements for medical face masks. Basic criteria in specifying these standards include high levels of bacterial, particulate and fluid resistance. Healthcare workers require surgical masks with ASTM ratings. EHS may specify their use in clinics, or for other research procedures or areas. Surgical masks lacking the ASTM rating must also demonstrate fluid resistance and particulate filtration efficiency, and often visually appear similar to surgical medical masks.
Many models and sizes of N95 respirators are made, and—because everyone’s face is shaped differently—it is likely that only a few types can fit tightly on any person’s face, which is why anyone wearing an N95 must be trained and fitted to their mask.

When worn for extended periods many people find wearing an N95 respirator to be uncomfortable.

If you have an N95 and have not been trained and fit-tested, please contact EHS.

**Powered Air-Purifying Respirator (PAPR)**

For some high-risk clinical and research work, PAPRs have been provided. With a PAPR, the wearer attaches a battery, blower and filter at their waist. The blower powers air through the filter, up a hose and blows filtered air into a hood worn by the user. This type of respirator provides the highest level of protection to the wearer.

**Questions?**

For more information about masks, face coverings and respiratory protection, please contact Yale Environmental Health and Safety at ehs@yale.edu or 203-785-3550.

**Concerns?**

For personal health concerns and questions about Yale’s COVID-19 response and policies, you may call 203-432-6604 (toll-free at 866-924-9253). Available 8 am–5 pm, 7 days a week.

If you are comfortable doing so, you may report a concern about compliance with COVID-19 health and safety policies or regulations directly to your staff supervisor, your human resources representative, or a supervising faculty member. You may also make an anonymous or identified report through Yale’s hotline at 877-360-9253, or online at your.yale.edu/hotline. Available 24 hours a day, 7 days a week.

You may also report a concern or seek additional COVID-19 information by contacting the 2-1-1 Connecticut Hotline.