

Health, Safety, and Wellness Guidance for In-Person Research with Human Participants under COVID-19 Pandemic Conditions

Safety Guidelines for In-Person Human Research Under COVID-19 Pandemic Conditions

The SARS-CoV-2 virus, which causes COVID-19, is most commonly spread from an infected person to another through **Close contact**: Breathing in someone's respiratory droplets after they cough, sneeze, laugh or sing; **Contaminated surfaces**: Touching something with the virus on it, then touching your mouth, nose, or eyes with unwashed hands; **Common greetings**: Handshakes, hugs or kisses. These modes of transmission are the main drivers of community spread. To a lesser extent, COVID-19 can also spread through aerosols, and there is a heightened risk that aerosols may be generated during certain research procedures.

Physical human interactions where any party is or may be infected with the virus pose a risk of transmission to anyone who shares that space, including researchers, research participants, other staff, and support personnel. As such, the proposed measures in this guidance document are intended to reduce the risk of disease transmission to all parties involved.

The following health and safety information and procedures have been developed to minimize the spread of COVID-19 during in-person research with human participants. Administrators, workers, and students must be familiar and follow the guidance from [Ontario Public Health](#), [Niagara Region Health](#) and the Brock University Office of [Health, Safety & Wellness](#).

In-person research with human participants may be authorized only when all safety measures that protect workers and students as well as research participants (and any caregivers who may need to be present) have been implemented. With the changing epidemiological picture of COVID-19, only human research that can be scaled back or shut down safely on short notice should be initiated, until further notice.

Assessing the Risks

Risks associated with COVID-19 in the context of research with participants can affect researchers, research participants, and the community where the research takes place. Although these risks are partly intertwined, some aspects of the risk can be well distinguished as affecting mainly one party.

In-person research with human participants may pose an increased risk of exposure to the SARS-CoV-2 virus to the two main parties (researcher and research participant) depending on how the interaction occurs.

In general, the more closely humans interact with others and the longer that interaction, the higher the risk of contracting COVID-19. Minimize time together whenever possible, including completing remotely any tasks possible (e.g., reviewing consent materials, completing questionnaires, etc.)

For human research in the context of COVID-19, special importance should be placed on interactions that involve:

- the generation of respiratory droplets or aerosols;
- physical contact, especially when lasting more than 15 minutes; or
- the collection of bodily fluids.

A heightened risk is posed by interactions that combine any of the above.

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Research activities that pose a relatively low risk are those where a distance of 2 m can be maintained among interacting parties all or most of the time, verbal exchange while in proximity is non-existent or very limited and procedures performed do not cause the expelling of respiratory secretions, where physical contact amongst individuals or with shared surfaces is non-existent or limited.

On the other hand, research activities involving the expelling of respiratory droplets such as coughing, sneezing, talking, especially loud talking, laughing, singing, or activities accompanied by an increased rate of exhalation or deep exhalation present a high risk of COVID-19 spread. In the case of the latter two (increased rate of or deep exhalation), there is concern for the generation of aerosols, which increases the risk of COVID-19 spread via inhalation. Examples of research activities where this risk is present include pulmonary function tests, spirometry, ENO, PEFT, VO₂ max testing, or intense physical exercise. Aerosol-generating procedures pose the highest risk of COVID-19 spread.

For activities where physical manipulation is involved, attention should be given to the ability of the technician that will perform the test/manipulation. Skillful technicians, generally, take less time and need less handling to perform a procedure, which may significantly reduce the risk of exposure to COVID-19. So, it is important to assign personnel with experience for these tasks whenever possible.

The table below characterizes the risk based on the type of interaction and the factors associated with it.

Table 1. Characterization of risk for in-person research with human participants based on type of interactions

Research Interaction	Type of Contact	Examples
Interaction/ observation	None or minimal contact; physical distancing can be easily achieved	Interviews, focus groups, surveys, computer-based experiments and data collection, non-invasive imaging from a distance
Moderate intervention procedures	Low-intensity physical contact only; physical distancing can be attained most of the time (less than 2 m apart for less than 15 minutes)	Administering dietary or light exercise regime, drug, or natural health product testing; non-interventional imaging requiring contact; collection of biological samples or placement of instruments while maintaining physical distancing
High intervention procedures	High-intensity contact involving physical manipulation; sustained physical contact of more than 15 min duration at less than 2 m distance	Physical treatment or manipulation (e.g., manual muscle testing, massage, etc.); placement of electrodes, indwelling EMG, IMUs, amplifiers, or other instruments that requires over 15 min within 2 m
Very high intervention procedures	Aerosol generation or contact with respiratory droplets is anticipated in indoor settings	Pulmonary function test, spirometry, ENO, PEFT, VO ₂ max test

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The risks of conducting research on human participants will be significantly affected by the mitigation measures that are implemented at the research site, which are promoted by public health and various levels of government such as distancing, the use of respiratory protection, practicing good hand hygiene and respiratory etiquette, following proper cleaning and disinfection protocols, etc., as well as how well the measures are adhered to. These mitigation measures are well covered in a variety of health and safety bulletins and guidelines that can be downloaded from the Health, Safety and Wellness Toolbox under [COVID-19 Information](#). They are also covered further down in this document.

In addition, there are other risks to consider which depend on the vulnerability of the research participant population to contracting COVID-19. Therefore, researchers need to consider the following vulnerability factors before recruiting a research participant. As we continue to learn more about COVID-19, this list may be revised, so consult the most up-to-date guidance from [Public Health](#).

Vulnerable populations may include

Anyone who is:

- an older adult, usually 60 or older
- at risk due to underlying medical conditions (e.g., heart disease, hypertension, diabetes, chronic respiratory diseases, cancer)
- at risk due to a compromised immune system from a medical condition or treatment (e.g., chemotherapy)

Anyone who has:

- difficulty reading, speaking, understanding or communicating
- difficulty accessing medical care or health advice
- difficulty doing preventive activities, like frequent hand washing and covering coughs and sneezes
- ongoing specialized medical care or needs specific medical supplies
- ongoing supervision needs or support for maintaining independence
- difficulty accessing transportation
- economic barriers
- unstable employment or inflexible working conditions
- social or geographic isolation, like in remote and isolated communities
- insecure, inadequate, or nonexistent housing conditions

Other factors:

- Research participant uses public means of transportation to reach the research site
- Researchers visiting research participant in their homes where vulnerable individuals live
- Research site is located on smaller or poorly accessible sites or is an Indigenous community

Ventilation and the Risk of Exposure to COVID-19

The risks posed by COVID-19 can vary depending on the ventilation of the space in which activities take place, due to the role airflow plays in the spread of infectious diseases transmitted through the respiratory route.

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The role that airborne transmission plays in the transmission of COVID-19 is subject to [debate](#). It is sound to assume that respiratory viruses can transmit this way, given the knowledge accumulated to date on similar viruses that are [transmitted this way](#), specifically in indoor environments among individuals in close proximity or in the presence of deficient ventilation that allows very small virus-laden particles to remain aloft or travel a farther distance before falling to the ground, so the risk cannot be ignored until solid evidence demonstrates it is not present for COVID-19.

Whether or not these particles are a major contributor to transmission under normal circumstances, it is logical that such particles should not be allowed to accumulate in enclosed spaces where they might (alone or in combination with larger droplets) lead to disease transmission ([link](#)).

Outdoor activities pose a lower risk of disease transmission than the risk of the same activity in an indoor setting due to the ample ventilation present in outdoor environments. Some research that falls under very high risk when performed indoors (e.g., intense physical exercise) can be reassigned to the immediately prior risk category (as per **Table 1**) and hence could take place at an earlier stage in the pandemic (See [Brock Research Activities During Stages of Pandemic and Recovery](#)). Note that when doing activities outdoors, the risk is lowered but not eliminated; therefore, the standard mitigation measures still apply, such as distancing, contact precautions, respiratory precautions, hygiene, etc.

Varying the Risk

The overall goal of all the mitigation strategies combined is to eliminate or limit closeness, contact, and the time taken. Sometimes, researchers can adjust one or more of the risk influencers to achieve a significant reduction in higher risk situations. For example, when researchers need to perform a task that brings them and the research participant into very close proximity for a prolonged time, it may be possible for multiple researchers to coordinate simultaneous steps that would allow them to complete the task in a shorter time. In this instance, even as the number of individuals in close contact is higher, if such individuals wear the proper PPE demanded for the activity (see **Table 2**), adhere strictly to following safe protocols AND avoid engaging in verbal exchanges or any other activity that may cause expiring respiratory secretions, the overall risk is reduced because the contact time is dramatically shortened.

Risk-Mitigation Measures

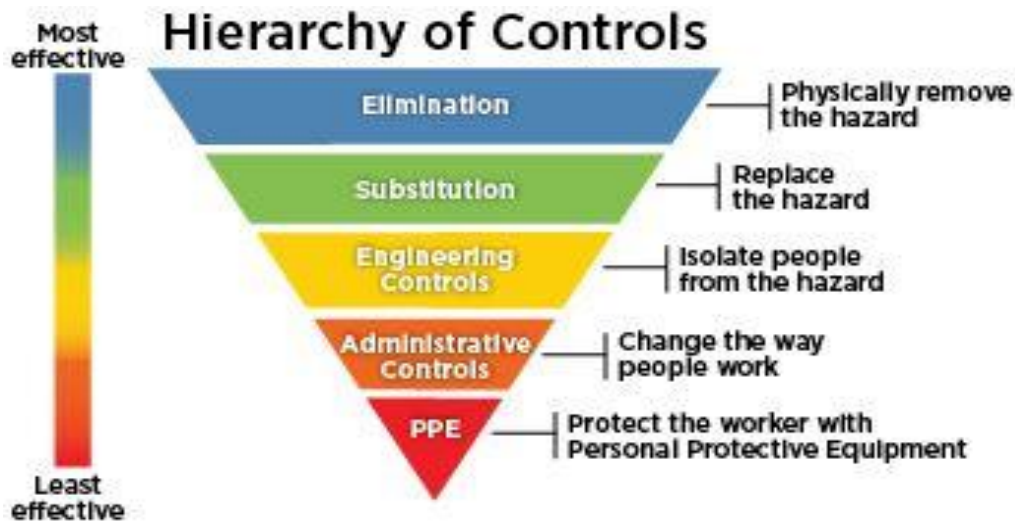
General. Hierarchy of Controls

Ample information is available on the [HSW webpage](#) regarding general aspects of COVID-19, its risks and mitigation measures. All researchers and workers must be familiar with this information before planning to and engaging in research.

For laboratories, the document entitled [Reopening Shared Research Lab Spaces in COVID-19 Pandemic Conditions: General Guidance](#) is the guidance issued for researchers entering labs during the June 15 research expansion; therefore, any research with human participants in a lab setting should also follow that guidance.

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COVID-19 is a newly identified hazard that requires an assessment and evaluation to mitigate the hazard in the workplace. As with any hazard-mitigation strategy, the focus should be on implementing control measures to eliminate or reduce the risk. The strategy for mitigating the COVID-19 hazard follows the same control framework. The hierarchy of controls as shown below must be considered.



Elimination

Continue Working Remotely

- Employees continuing to work remotely (off-site), as much as possible, is the most effective method to remove or eliminate the COVID-19 hazard from the workplace. Any activities that can be done remotely should be done remotely (e.g., consent processes, questionnaire completion).
- Employees must receive the appropriate authorization to come to campus. Upon authorization, employees must adhere to physical distancing and hand hygiene practices while on campus.

Substitution

Not applicable in the case of COVID-19

Engineering Controls

Adjust the workplace

- Physical distancing must be the primary consideration as supervisors prepare for the return of employees to campus, once they are authorized to do so.

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- Physical distancing (2 m) is the recommended work practice. Solutions may differ depending on the number of individuals in a work area as well as the operational requirement of the work tasks.
- When physical contact or proximity are necessary during research activities, reduce the time spent in close contact (less than 2 m) to the minimum possible.
- In order to enable physical distancing, changes to the design or configuration of the workplace may be required. For employees whose duties make it difficult to engage in physical distancing while on campus, proactively consider re-design or modification of their workstations and workplace configuration to reduce the potential for contact with others.
- Control of traffic flow should also be considered. Limit the number of individuals permitted to be present in the workspace. Designate the direction of foot-traffic in main circulation paths such as corridors and entryways using university signage available through Facilities Management.
- Minimize access to shared spaces such as kitchenettes, lounges etc. to ensure physical distancing and ensure proper cleaning/disinfecting protocols are implemented. Consider staggering lunch/break times to minimize opportunities to gather.
- [Requests](#) can be placed with Facilities Management to have standard COVID-19 signage regarding distancing, hygiene, traffic flow, points of entry and exit points, and decals installed in your area.

Administrative Controls

Adjust work processes

- Hygiene Practices
 - In combination with physical distancing, appropriate hygiene practices are a critical prevention measure for COVID-19
 - [Hand washing](#) and [hand rub \(hand sanitizer\)](#) posters should be printed and posted in the work area
- Advise employees (and research participants, if relevant) & enable to practice the following:
 - Self-assessment tool - Instruct individuals (researchers and research participants) to complete the [Brock University self-screen survey](#) on the day of research engagement. If sick, individuals must stay home and contact their Physician, Public Health or Telehealth Ontario for further instructions. Employees must also notify their supervisor
 - Hand hygiene - wash hands regularly following proper handwashing techniques. In areas with no proximity to a sink, use alcohol-based hand sanitizer (ensure hand sanitizer is available in the work area)
 - Respiratory Etiquette - cover coughs and sneezes. Turn away from others when coughing or sneezing and into upper sleeve or elbow instead of hands
 - Avoid touching the face
 - Cleaning/Disinfection - provide appropriate cleaning/disinfecting products so that common touchpoints can be disinfected by individuals before each use. Establish routine

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cleaning of high touch surfaces with the work area. Avoid sharing of work tools and equipment.

- Adjustments to Shift or Hours of Operation
 - Introduce staggered shifts as appropriate to minimize the number of people at a given time. Prior to implementing, consult with Labour Relations for applicable collective agreement requirements
 - Schedule lunch and break times and restrict gathering in groups during these times
 - Establish procedures for newly required processes as described above and ensure clear and adequate communication of the documented procedures

Personal Protective Equipment (PPE)

General Considerations

- Supervisors should complete risk assessments to determine the required personal protective equipment (PPE) for the tasks within their areas.
- HSW can assist supervisors in their risk assessments to determine any required PPE.
- Gloves should be worn if in their role the employee is expected to have contact with blood or body fluids and/or contact with equipment, materials, or surfaces that could potentially be contaminated where hand hygiene is not possible.
- Wearing gloves does not replace the need to perform hand hygiene and in general circumstances/ environments would not be required if hand hygiene is possible.
- Individuals should avoid touching their eyes, face and mouth even if wearing gloves.
- Hand hygiene should be performed both before and after wearing gloves.
- If implementing the use of gloves, based on a risk assessment, ensure that adequate supplies are available.
- Ensure that individuals receive instruction for proper donning and doffing of gloves.
- Unlike personal protective equipment (such as N95 masks), community protective equipment (CPE) is intended to minimize the potential propagation of respiratory droplets. This equipment, including non-medical masks and face coverings is not necessarily intended to provide protection to the wearer, rather is more for minimizing community spread and therefore is not considered PPE. As of July 1, Brock is requiring anyone entering on-campus buildings to wear a non-medical face covering, if they're able to. Face coverings are not required to be worn in single-person offices; however, they must be worn when maintaining 2 m of physical distance is not possible or predictable, such as hallways, elevators, classrooms and restrooms. Please note there are exemptions from the face covering requirement as outlined in the [June 29 Brock News Story](#). Proper hygiene practices and physical distancing remain critical components to minimizing the risk of COVID-19 transmission. Ensure that employees receive instruction on proper donning and doffing of masks and performing hand hygiene. Reusable cloth face coverings must be cleaned and decontaminated after each use.

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- Information, including limitations and appropriate use of non-medical mask or face covering, can be found on the [Government of Canada website](#).
- Specific PPE for research with human participants can be found [further down](#).

Specific Mitigation Measures for In-Person Research with Human Participants

The [Researcher COVID-19 Mitigation Strategy](#) is a checklist that has been modified from the [Department Specific COVID-19 Mitigation Strategies](#) to guide research applicants in implementing standard measures that need to be in place before work commences. This checklist needs to be filled out and submitted as part of the application process for research with human participants.

Other mitigation strategies

Reducing the time spent in physical proximity or in direct contact with human participants or other research personnel is recognized as an important strategy throughout; therefore, take every reasonable measure to prevent verbal exchanges while in proximity. For example, preliminary research-specific and COVID-19 screening procedures, interview and consent, should be obtained over the phone/online whenever possible. All researchers and research participants should complete the [Brock University self-screen survey](#) on the day of the study visit, ideally prior to arrival on site.

Cleaning and disinfection guidance

For research in labs, follow the guidance contained in the document “Brock University. Health, Safety & Wellness. Reopening Shared Research Lab Spaces in COVID-19 Pandemic Conditions-General Guidance” available at this [link](#).

For spaces that are not a wet lab, follow this cleaning and disinfection guidance below. It has been customized from a more general guidance available on SharePoint at this [link](#).

- Routine and effective cleaning and disinfection is an essential activity to prevent the spread of the virus that causes COVID-19. Coronaviruses are one of the easiest types of viruses to kill with the appropriate disinfectant when used according to the label directions.
- Use disinfectants that have a Drug Identification Number (DIN). A DIN is an 8-digit number given by Health Canada that confirms it is approved for use in Canada.
 - When a department requires disinfectant products (paper towels, mobile hand sanitizer, disinfectant for high touch point) and/or protective equipment (face coverings, gloves) a designated employee for the department can order and obtain these products via Workday. For more information on how to order the COVID-19 materials, [follow the procurement guidebook](#) or [see the video](#) for the step-by-step process”.
 - Other readily available disinfectants are alcohols; at proper concentration, between 70-80%, are effective and widely used.
- Every person is responsible for the cleaning and disinfection of their space, including work surfaces, keyboards, handles and knobs, light switches, etc. that are in their immediate surroundings.

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- Every worker should clean and disinfect at the beginning and the end of the workday as a minimum.
- Custodial Services staff is working with new enhanced cleaning and disinfecting protocols throughout the campuses.
- Disinfectants and paper towel should also be available in common use areas for routine disinfection. Eg., kitchenettes (refrigerator door handles, countertop, dining tables, microwave ovens, coffee makers, etc.), printing stations, archives drawers, etc.
- For research with human participants, the researcher must clean surfaces that were touched by the researcher or the participant in between uses by different personnel.
- Check the expiry date of products you use and always follow manufacturer's instructions. DO NOT ever mix disinfectants. Some mixtures can produce harmful gases.
- For disinfectants to be effective, the surface/object/item must be free from visible soil. Therefore, if there is soil, including dust, clean before applying a disinfectant.
- Where possible, protect keypads and high touch electronic devices with a plastic cover to facilitate disinfection.
- Cleaning and disinfecting the workplace is not a replacement for hand hygiene and other practices recommended for COVID-19 prevention, instead it is a complement.

How to disinfect

- Before using a disinfectant, read and follow the manufacturer's instructions. Also, read any applicable Safety Data Sheet and wear any required PPE.
- Check the expiry date of the product. DO NOT ever mix disinfectants. Some mixtures can produce harmful gases.
- If visibly dirty, clean the area/surface with water and soap.
- Apply the product according to the manufacturer's instructions.
 - When using a liquid disinfectant, apply the disinfectant on a piece of paper towel. Ensure the towel is saturated with the disinfectant before applying the disinfectant to the touch points/surfaces. Reapply the disinfectant as needed to leave a visible film.
 - Allow the surface to air dry. Follow the manufacturer's indicated drying time.
- Discard the used piece of paper towel/wipe or other waste in a plastic-lined garbage bin.
- Wash hands with soap and water.

More safety information from the Government of Canada is available [here](#).

Specific personal protective equipment for in-person research with human participants

During in-person interaction between researchers and human participants, there is real possibility of the SARS-CoV-2 virus being transmitted to either party if any side is infected with the virus;

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therefore, in addition to the above-mentioned mitigation measures, it is necessary to wear personal protective equipment.

The necessary type and levels of PPE are indicated in **Table 2**, below.

Table 2. Minimum PPE requirements for in-person research with human participants

Type of Contact	Examples	Minimum PPE Expected
None or minimal contact; physical distancing can be easily achieved	Interviews, focus groups, surveys, computer-based experiments and data collection, non-invasive imaging from a distance	Facial coverings (researcher and participant) when social distancing cannot be maintained or anticipated
Low-intensity physical contact only; physical distancing can be attained most of the time (less than 2 m apart for less than 15 minutes)	Administering dietary or light exercise regime, drug, or natural health product testing; non-interventional imaging requiring contact; collection of some biological samples or placement of instruments while maintaining physical distancing	Three-ply disposable mask (with a layer of polypropylene in the middle) for all; goggles or face shield for researcher; goggles or face shield for the participant if the procedure promotes the participant to expel droplets while in close proximity. Gloves to be worn when contact with subsequent individuals is expected in a short succession.*
High-intensity contact involving physical manipulation; sustained physical contact of more than 15 min duration at less than 2 m distance	Physical treatment or manipulation (e.g., manual muscle testing, massage, etc.); placement of electrodes, indwelling EMG, IMUs, amplifiers, or other instruments that requires over 15 min within 2 m	Three-ply disposable mask (with a layer of polypropylene in the middle) for all; face shield, gloves and a lab coat for researcher; goggles or face shield for the participant if the procedure promotes the participant to expel droplets while in close proximity.
Aerosol generation or contact with respiratory droplets is anticipated in indoor settings	Pulmonary function test, spirometry, ENO, PEFT, VO ₂ max test	N95 Respirators (fit testing required), gloves, goggles or face shield, and a gown for researcher

*When the researcher will be in contact with isolated individuals or contact is spaced apart, there is no requirement to wear gloves as hand hygiene performed immediately after the contact will suffice; however, it is up to the discretion of the researcher and what they feel comfortable with. On the other hand, if activities involve contact with subsequent individuals in short succession, a fresh pair of gloves must be worn for each human participant, accompanied by hand hygiene after each pair of gloves is removed.


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Personal Protective Equipment Procedures


The way and order in which personal protective equipment is donned and doffed is of great importance to prevent self-contamination during the process. It should be done sequentially and carefully. Follow the steps as shown in diagrams below.

<https://www.publichealthontario.ca/-/media/documents/ncov/ipac/ppe-recommended-steps>

Recommended Steps: Putting On Personal Protective Equipment (PPE)




1. Perform Hand Hygiene



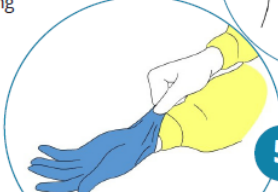
2. Put on Gown

- Tie neck and waist ties securely



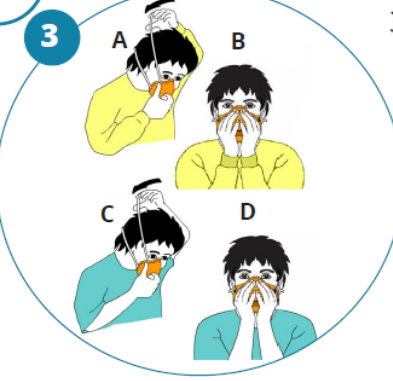
5. Put on Gloves

- Put on gloves, taking care not to tear or puncture glove
- If a gown is worn, the glove fits over the gown's cuff




3. Put on Mask/N95 Respirator

- Place mask over nose and under chin
- Secure ties, loops or straps
- Mould metal piece to your nose bridge
- For respirators, perform a seal-check




4. Put on Protective Eyewear

- Put on eye protection and adjust to fit
- Face shield should fit over brow



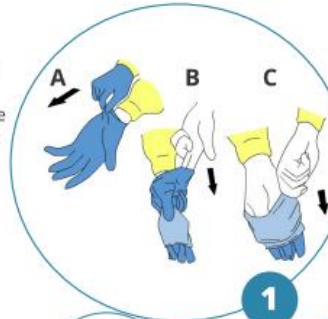
For more information, please contact Public Health Ontario's Infection Prevention and Control Department at ipac@ohpp.ca or visit www.publichealthontario.ca.



**Recommended Steps:
Taking Off Personal Protective Equipment (PPE)**

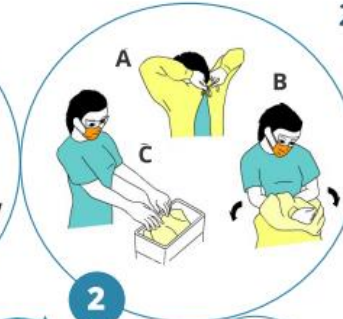
1. Remove Gloves

- Remove gloves using a glove-to-glove / skin-to-skin technique
- Grasp outside edge near the wrist and peel away, rolling the glove inside-out
- Reach under the second glove and peel away
- Discard immediately into waste receptacle



2. Remove Gown

- Remove gown in a manner that prevents contamination of clothing or skin
- Starting with waist ties, then neck ties, pull the gown forward from the neck ties and roll it so that the contaminated outside of the gown is to the inside. Roll off the arms into a bundle, then discarded immediately in a manner that minimizes air disturbance.



6. Perform Hand Hygiene

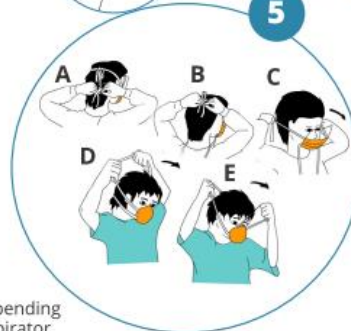


3. Perform Hand Hygiene



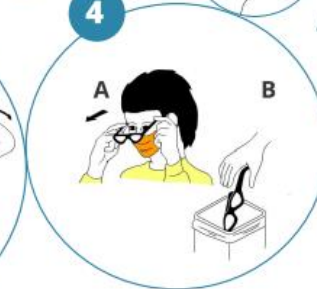
**5. Remove Mask/
N95 Respirator**

- Ties/ear loops/straps are considered 'clean' and may be touched with hands
- The front of the mask/respirator is considered to be contaminated
- Untie bottom tie then top tie, or grasp straps or ear loops
- Pull forward off the head, bending forward to allow mask/respirator to fall away from the face
- Discard immediately into waste receptacle



4. Remove Eye Protection

- Arms of goggles and headband of face shields are considered to be 'clean' and may be touched with the hands
- The front of goggles/face shield is considered to be contaminated
- Remove eye protection by handling ear loops, sides or back only
- Discard into waste receptacle or into appropriate container to be sent for reprocessing
- Personally-owned eyewear may be cleaned by the individual after each use



This is an excerpt from Routine Practices and Additional Precautions In All Health Care Settings (Appendix L) and was reformatted for ease of use.

Watch the videos in the links below to learn how to don and doff PPE and how to properly wash and sanitize hands. Practice the techniques as needed until you are confident you can do it correctly.

[How to Hand Rub](#)

[How to Remove Goggles and Face Mask](#)

[How to Handwash](#)

[How to Remove Gloves](#)

[How to Put on a Gown and Gloves](#)

[How to wear 1870 N95 respirator](#)

[How to Put on a Mask](#)

[Multiple resources](#)

The use of face coverings

For in-person research with human participants, the use of face coverings is indicated for the researcher and the human participant, according to **Table 2**, when physical distancing cannot be maintained or anticipated.

Face coverings should:

- allow for easy breathing
- fit securely to the head with ties or ear loops
- maintain their shape after washing and drying
- be changed as soon as possible if damp or dirty
- be comfortable and not require frequent adjustment
- be made of at least 2 layers of tightly woven material fabric (such as cotton or linen)
- be large enough to completely and comfortably cover the nose and mouth without gaping

Some masks also include a pocket to accommodate a paper towel or disposable coffee filter, for increased benefit.

Face coverings should:

- not be shared with others
- not impair vision or interfere with tasks
- not be placed on children under the age of 2 years
- not be made of plastic or other non-breathable materials
- not be secured with tape or other inappropriate materials
- not be made exclusively of materials that easily fall apart, such as tissues
- not be placed on anyone unable to remove them without assistance or anyone who has trouble breathing.

More information on this can be found from [Public Health](#).

Considerations on and care for face masks

Although medical masks may offer superior protection from respiratory viruses, they are hard to secure due to their increased demand for health-care settings across the globe. Three-ply disposable masks with a middle layer made of polypropylene offer protection that is superior to other non-medical face masks. These types of masks are recommended as minimum respiratory barrier for in-person research with human participants where some physical contact, low-intensity contact or sustained physical contact, high intensity is anticipated (**Table 2**).

While these masks may be effective in blocking large-particle droplets, by design, they do not filter or block very small particles in the air that may be transmitted by coughs or sneezes. They also do not provide complete protection from germs and other contaminants because of the loose fit between the surface of the procedure mask and your face.

Much care must be placed to the way in which masks are worn and handled because the protection they afford is dependent upon how well the wearer follows proper procedures.

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Following, there are instructions on how to put on and remove face masks, and on how to care for them if reused.

How to put on a mask

1. Before entering the research space, remove any jewelry; tie and secure hair back, if you have long hair.
2. [Clean your hands](#) with soap and water or [hand sanitizer](#).
3. Remove a mask from the box and make sure there are no obvious tears or holes in either side of the mask.
4. Determine which side of the mask is the top. The side of the mask that has a stiff bendable edge is the top and is meant to mold to the shape of your nose.
5. Determine which side of the mask is the front. The colored side of the mask is usually the front and should face away from you, while the white side touches your face.
6. Follow the instructions below for the type of mask you are using.
 - *Face Mask with Ear loops:* Hold the mask by the ear loops. Place a loop around each ear.
 - *Face Mask with Ties:* Bring the mask to your nose level and place the ties over the crown of your head and secure with a bow.
 - *Face Mask with Bands:* Hold the mask in your hand with the nosepiece or top of the mask at fingertips, allowing the headbands to hang freely below hands. Bring the mask to your nose level and pull the top strap over your head so that it rests over the crown of your head. Pull the bottom strap over your head so that it rests at the nape of your neck.
7. Mold or pinch the stiff edge to the shape of your nose.
8. If using a mask with ties: Then take the bottom ties, one in each hand, and secure with a bow at the nape of your neck.
9. Pull the bottom of the mask over your mouth and chin.
10. Watch the [video](#) on how to put on and take off a mask.

How to remove a single-use mask

1. Clean your hands with soap and water or hand sanitizer before touching the mask. Avoid touching the front of the mask. The front of the mask is contaminated. Only touch the ear loops/ties/band. Follow the instructions below for the type of mask you are using.
2. *Face Mask with Ear loops:* Hold both ear loops and gently lift and remove the mask.
3. *Face Mask with Ties:* Untie the bottom bow first then untie the top bow and pull the mask away from you as the ties are loosened.
4. *Face Mask with Bands:* Lift the bottom strap over your head first, then pull the top strap over your head.

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5. Throw the mask in the trash. Clean your hands with soap and water or hand sanitizer.

Disposable masks are not intended to be used more than once. If your mask is damaged or soiled, or if breathing through the mask becomes difficult, remove the mask, discard it safely, and replace it with a new one. To safely discard your mask, place it in a plastic bag and put it in the trash. Wash or disinfect your hands after handling the used mask.

If a disposable mask needs to be reused due to low availability, reduce the numbers of times of reuse to the minimum possible. Discard the mask daily or after three times of use, whichever comes first, and if it gets wet or when it becomes hard to breathe through it. Since the handling of masks increases the chances of contaminating its inner side (the side in contact with the mouth/nose), any handling must be done with extreme care, following the procedures below.

Storing used masks

1. Designate a container exclusively for keeping the reusable mask. Label it as “reusable mask and [name of the user]”. A rectangular plastic box with a lid that can accommodate the mask flat on the bottom with the bands extended is appropriate.
2. Remove gloves following the procedure shown in the [video above](#).
3. [Wash](#) or [disinfect](#) your hands.
4. Disinfect the lid and sides of the container with an appropriate disinfectant.
5. Remove the container’s lid and lay in on its outer side over a clean surface, taking care not to contaminate hands with the surrounding objects, counter, etc. If hands get in contact with any object/item, disinfect them immediately.
6. Disinfect the container on the inside.
7. Remove mask following the procedure shown the [video above](#). Taking the mask by the band, lay it flat inside the container. The inner side (side in contact with your face) will face the bottom of the container. Determine how you will orient the top of the mask and always place it in container the same way to avoid confusion.
8. The bands will lay free from contact with both the inner and outer sides of the mask.
9. Close the container.

When removing the mask for reuse

1. [Wash](#) or [disinfect](#) hands.
2. Disinfect the lid and sides of the container with an appropriate disinfectant.
3. Remove the container’s lid and lay in on its outer side over a clean surface, taking care not to contaminate hands.
4. Take the masks by the bands taking care not to touch the mask surface.
5. Put the mask on following the instructions on the video above.
6. At any point during the process, if you think you contaminated the inner side of the mask, discard it. Disinfect hands any time you consider hands could have been contaminated.

When wearing masks, they will be covering the mouth and nose or will be removed. The mask should NOT be slid out of its protective position (covering the mouth / nose) to temporarily uncover the nose, as doing so may cause its inner side to get contaminated.

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Other remarks on PPE

- When removing any PPE, care must be taken to avoid touching the contaminated side (external side or side that is not in contact with the skin) with skin and hair.
- Lab coats or gowns and gloves will be used only inside the workspace and never in a public space.
- Lab coats must be removed when they get contaminated (and decontaminated before washing) or are visibly dirty.
- When gloves get contaminated, they must be removed following the proper procedure ([video](#)) AND in between research participants.
- Gloves not contaminated with biohazards will be disposed of in garbage bin lined with a plastic bag.

Application process for in-person research with human participants during COVID-19 pandemic conditions

1. Principal investigator (PI) reads and understands general HSW guidance and the guidelines contained herein.
2. Principal Investigator submits the following to the Associate Dean Research:
 - a. the [Research Facility Access and Prioritization Request Form](#)
 - b. the [Researcher COVID-19 Mitigation Strategy](#)
 - c. the [Research with Human Participants Risk Checklist](#)
3. Notification of authorization for research activity is sent to the Principal Investigator
4. Principal Investigator submits the approved documents to the REB with the corresponding REB application or request for modification
5. Principal Investigator informs the Associate Dean Research when authorization and REB clearance are secured to facilitate scheduling of access to on-campus spaces (if relevant)