

Lab Health and Safety Procedures Cognitive Neuropsychology Lab

The spread of the SARS-Co-V-2 virus that is responsible for COVID-19 necessitates major improvements to our lab's normal routine health and safety procedures. The goal of this protocol is to put forth a series of best-practice procedures that will substantially mitigate the risk of COVID-19 spread during EEG recordings and in doing so protect the health and wellness of our research personnel and research participants. Given these mitigation procedures, we assert that the risks associated with recording EEG/ERPs are no greater than what an individual would experience during daily life during the pandemic (e.g., getting a haircut). Our lab health and safety protocol was informed by best-practices detailed by Steven Luck, Ph.D. and his research group at the UC Davis Center for Mind & Brain (Simmons & Luck, 2020) and additional best-practices for clinical neurophysiology (San-Juan et al., 2020).

The key elements of our safety protocol are as follows:

1. The primary goal is to reduce the expulsion of virus into the air and to remove the virus from surfaces
2. Contact between persons (e.g., researcher and participant) will be minimized whenever feasible. As much of the procedures as possible will be conducted in advance or without direct contact (e.g., consenting). Most importantly, the duration of the electrode application procedure will be minimized, because this involves the closest contact between participant and experimenter
3. Before entering the lab, participants and researchers will complete a health screener, and anyone with COVID-19 related symptoms or recent contact with a likely COVID-19 case should not enter the lab
4. Participants and researchers will always wear appropriate personal protective equipment (detailed below)
5. All equipment and surfaces that come into contact with the participant and/or researcher will be rigorously disinfected
6. The electrode application process will be performed in a different room/area from the EEG recording, and the researcher will spend as little time as possible in the recording area

Required PPE for all Researchers while in the lab

At all times

- Disposable surgical-style mask
- Disposable nitrile gloves

During data collection or training

- Disposable surgical-style mask (always)
- Disposable nitrile gloves (always)
- Isolation gown (always)
- Face shields (during electrode net application and electrode net removal)

General lab procedures

- Researchers should not come to the lab if they are symptomatic, have recently come in close-contact with a person diagnosed with COVID-19 and/or have a temperature ≥ 100 degrees.
- Participants and researchers in “high-risk” groups and those over the age of 65 may be precluded from participating in research training and procedures
- Before entering the lab space, all participants and researchers must complete a symptom screener, temperature check, and log their health status on the “CBL personnel and symptom screening log.”
- Disposable surgical-style face masks must always be worn in the lab
- No more than four (4) individuals may be in the lab at a time.
- No more than three (3) individuals may be present during data collection: 1-2 researchers and the participant.
- Researchers will spend as little time as possible in the EEG testing area (during, before, and after a *testing* session)
- There will be at least 45-minutes scheduled between participants to allow enough time for cleaning/disinfecting and to ensure that one participant does not arrive before the previous participant has left
- Participant’s use of a comb and/or hair dryer while in the lab is discontinued
- Study-specific research procedures will be modified to reduce participant-researcher contact time
- Doors to the researcher and participant rooms will always remain open for maximal ventilation
- 6 feet will always be maintained between the researcher and participant except when not feasible (e.g., electrode net application)
- Whenever possible, researchers will maintain 6-foot distance from each other in the lab.
- Only 1 researcher can be in the testing room at a time, including electrode net application and impedance adjustment
- Only 2 researchers can be in the researcher room at a time
- Upon arrival to the lab, researchers must perform a symptom and temperature screener and log their “in” and “out” times.
- All personnel must be wearing closed toed shoes in the lab
- Only trained research personnel are permitted in the lab, unless otherwise approved by the principal investigator

Subject prep and recording areas

Immediately upon arriving at the lab, the participant will put all of their belonging on a shelf, hooks, and/or bin. These surfaces will be disinfected after the session.

Separate areas will be used for head measurement and EEG recording-- to minimize the number of people who are in the recording area, where the subject will spend considerable time. During EEG recording, the subject will be in an isolated testing room whereas the researchers will be in a separate room other than electrode net application and electrode net removal. Head measurements and electrode net preparation will occur in the main lab space. The researcher

and participant will then move to the testing room for net placement and impedance adjustment. Only 1 researcher is permitted in the testing room and will perform all electrode application and impedance adjustment procedures. Although the researcher will have to be in front of the participant when applying the electrode net, to the extent possible, the researcher will stand behind the subject while adjusting electrode impedances. The door to the participant room will remain open and researchers will give instructions while standing outside the participant room.

Disinfecting

All surfaces that may be touched by the researcher or participant must be disinfected using Isopropyl alcohol wipes ($\geq 70\%$) immediately after the recording session. This includes all cabinets, counters, door handles, computer mouses, response pad, thermometer, the blue participant chair, and all other routine lab equipment (e.g., water distiller). Gloves will be used during the disinfecting process. Only Control III will be used to disinfect the electrode net. Disinfectant should not be applied to the EEG amplifier.

Researchers arriving to the lab

- Immediately upon entering the lab the researcher will perform a symptom check and temperature screen and log their responses and attendance. If the researcher fails the symptom screen or has a temperature ≥ 100 degrees, they cannot enter the laboratory and must notify the principal investigator.
- The researcher must “check in” and “check out ” of the lab and their symptom status (pass, fail) on the CBL symptom log (ledwidgelab.com)
- The researcher should do their best to limit personal belongings they bring into the lab space (e.g., backpacks, purses). Personal belongings must be hung up or put in bins immediately upon arrival. No food, drink, or water bottles are permitted inside the lab space.
- The researcher must be wearing a mask to enter the lab space. Immediately upon entering the lab the researcher will don a disposable surgical style mask and gloves. If preparing for a session and/or electrode net application, the researcher should also put on an isolation gown.

Data collection procedures

Before the participant arrives

- Specific to each study, the participant will complete all ordinary consenting, screening, and surveys online or over video conference prior to their session. At the time of consent, the participant will also be given a brief description of the risk mitigation procedures. For surveys and interviews that need to be completed at the lab, the participant and researcher will do so in a well-ventilated easy-to-clean space, at least 6 feet from each other.
- 1-2 days prior to their session, the research project coordinator will send an email/text to the participants describing the institutional and lab procedures required prior to entering the laboratory (e.g., symptom screener, waiting by the door).
- The researchers will arrive no less than 30 minutes prior to the start of the session.
- Before entering the lab, the researcher will perform a symptom check and temperature screen and log their responses and attendance.
- All surfaces and equipment will be disinfected and laid out prior to subject arrival

- Everything that the participant or researcher may touch will be disinfected prior to the session

When the participant arrives

- While wearing an isolation gown, gloves, and mask, the researcher will meet the participant outside the entrance to the lab. Immediately have the participant put on the disposable surgical mask. The participant must wear the mask at all times during the research session. Even if the participant arrives with their own PPE, they must wear the masks provided by the research team. *The participant will be asked to briefly remove their mask during electrode net application (approx. 1 minute) and electrode net removal (approx. 1 minute). During this process the researcher will be wearing both a face mask and a face shield. Immediately after net application and removal, the participant will reapply their mask.
- Following (and outside the research lab) the researcher must administer the COVID-19 symptom screener, temperature check, to the participant and log their attendance. The participant may only enter the laboratory if they pass the symptom screener and temperature check (< 100 degrees).
- Upon entering the lab, the participant will hang up all of their belongings and/or put them into a bin immediately after entering the lab space and apply hand sanitizer
- Any surveys/screeners that must be completed in the lab will occur with least 6 feet between the participant and researcher

Electrode net prep and application

- Prior to application, the researcher will wash their hands for 20 second (or apply hand sanitizer) and put on a fresh pair of gloves and a face shield.
- Head measurements and electrode net application will be performed per routine lab procedures, but in the main testing space
- Only 1 researcher will perform the electrode prep and application procedures
- Following measurements, the researcher will instruct the participant to sit in the testing room.
- Electrode net application and adjustment will occur according to routine lab procedures, adjusting impedances from behind the participant whenever possible
- The participant must be wearing their disposable surgical grade mask at all times*
- *The participant will be asked to briefly remove their mask during electrode net application (approx. 1 minute) and electrode net removal (approx. 1 minute). During this process the researcher will be wearing both a face mask and a face shield. Immediately after net application and removal, the participant will reapply their mask.

Task instructions and artifacts demo

- Once the electrode net is placed and adjusted, the researcher will guide the participant through the task instructions and artifact demo from *outside* the testing room (6-feet distanced). This will occur while the testing room door is open and the researcher is instructing from the main lab space.

During EEG recording

- Participants and researchers must have masks on at all times.

- In between EEG tasks, the 1 researcher who applied the electrode net will adjust electrode impedances and provide instructions according to routine lab procedures and with the distancing and full PPE as described above (mask, shield, gloves, isolation gown)
- At the end of EEG recording, the researcher will remove the electrode net according to routine lab procedures and with full PPE (mask, shield, gloves, isolation gown)

Procedures for administering neurocognitive tests

- To adhere to test instructions and norming procedures, the administration of neurocognitive batteries may occur with the participant and researcher within 6-feet of each other
- Only the PI will be permitted to administer neurocognitive batteries
- The PI will wear gloves, face mask, and face shield
- The participant will wear their mask
- The participant and researcher will use separate writing utensils
- The participant will never touch the stimulus booklet
- After test administration, the laminated stimulus booklet, writing utensils, and stopwatch will be disinfected
- After test administration, the participant's response booklet will be kept in a separate location in the PI's office.
- Only the PI will score the tests
- Therefore, only the PI and the participant will encounter the testing materials

After the session

- Perform routine data storage procedures
- Discard all syringes and disposable wipes
- Using the 70% isopropyl wipes, disinfect all surfaces that may have been touched by the participant or researcher, including all non-porous furniture, countertops, response devices, door handles, equipment, etc.
- Before leaving, the researcher will "check out" on the CBL symptom screener log
- When ready to leave the lab space, the researcher will apply hand sanitizer and may dispose of their gloves, mask, and gown after leaving the laboratory

Referring symptomatic research personnel and participants

Any BW community member who becomes symptomatic while on campus should immediately isolate and seek medical care. **Contact BW Health Services at (440) 826-2178** and your professor, resident hall advisor or supervisor so they can coordinate with the Health Department on any necessary response (<https://www.bw.edu/advisory/fall-2020/health-safety/>)

Entering/exiting the laboratory

Entering

1. (outside the laboratory) Complete the CBL symptom screener.
2. Enter the lab
3. Apply hand sanitizer
4. Put on gloves
5. Check your temperature
6. Disinfect thermometer
7. Log your name, screener results, and “enter” time on CBL Symptom Log
8. Hang up all belongings
9. Put on PPE (according to CDC protocol). Disposable surgical masks and disposable nitrile gloves required at all times. Put on isolation gown if running a research session and/or are performing any electrode applications, such as when training. **Mask and gloves must be worn at all times in the lab.**
10. *Perform laboratory procedures.* If running a research session, disinfect surfaces and equipment-- lay out all equipment prior to arrival

When participant arrives

1. Meet the participant outside the lab with hand sanitizer, mask, and thermometer
2. Participant must put on one of the lab's disposable surgical masks and apply hand sanitizer (**participant must wear mask at all times during session**).
3. Administer the symptom screener and take participant's temperature. Participant is not permitted to enter the lab if they: (a) Didn't receive "Green" status on day's BW health check-in, (b) have newly developed symptoms, (c) have recently been in contact with someone diagnosed with COVID-19 in the last 2 weeks, or (d) have a temperature ≥ 100 degrees.
4. Log participant's name, results, and "enter" time on the CBL Symptom Log
5. Upon entering the lab, the participant hangs up all belongings and/or put them into a bin immediately after entering the lab space
6. Researcher disinfects thermometer
7. 6 feet distancing should be maintained between participant and researcher at all times, except for electrode net preparation and application

Clean-up and exiting the lab

1. Thank the participant and usher them to their belongings and the exit door
2. Upon exiting, log the participant's "exit time" on the CBL Symptom Log
3. Clean up and disinfect all surfaces. All surfaces that may be touched by the researcher or participant must be disinfected using Isopropyl alcohol wipes ($\geq 70\%$) immediately after the recording session.
4. Take off isolation gown and gloves and dispose of appropriately (according to CDC protocol). Keep on mask until you leave the lab.
5. Upon existing, log your "exit time" on the CBL Symptom Log
6. Exit the lab
7. Dispose of mask and perform hand health hygiene

Electrode net application, adjustment, and removal

1. Researcher applies hand sanitizer and fresh pair of gloves
2. Researcher puts on face shield (according to CDC protocol)
3. Put towels around participant's shoulders and apply barber cape
4. Researcher 1 takes head measurements while Researcher 2 records measurements
5. Usher participant into testing room.
6. Researcher 1 applies electrode net and adjusts impedances. Researcher 2 records impedances from researcher room.
7. From outside the testing room, Researcher 1 shows participant EEG artifacts and gives task instructions
8. In-between tasks, Researcher 1 adjusts impedances; then gives instructions for next task (from outside the testing room)
9. Removing the net: Put on fresh pair of gloves and face shield; remove net according to routine lab procedures

COVID-19 Screening

1. Did you complete the BW Daily Health Check-in and receive “Green” status today?
2. Are you experiencing one or more of the following *new* symptoms: shortness of breath, difficulty breathing, cough, fever or chills, new loss of taste or smell?
3. Are you experiencing one or more of the following *new* symptoms: fatigue, muscle or body aches, headache, sore throat, congestion or runny nose, nausea or vomiting, diarrhea?
4. In the last 2 weeks have you come in close-contact with someone who has tested positive for COVID-19?
5. Do you have a temperature ≥ 100 degrees?

All research personnel, guests, and participants must pass this screener before entering the lab. All screener results (pass v. fail) must be logged prior to entering the lab. Any BW community member who becomes symptomatic should immediately isolate, seek medical care, and contact BW Health Services at (440) 826-2178.