

10 BEST PRACTICES when Measuring HUMAN SUBJECTS

for Collecting and Analyzing Data



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1. Identify the data needed for your study.

- Physiology: EDA, EEG, ECG, EMG, EOG, Pulse, Respiration, Temperature, Blood Pressure
- Eye Tracking
- Brain Imaging
- Facial Coding
- Cognitive State



2. Match equipment to your signal needs. Choose the right equipment for your data collection needs—check publications, network with colleagues, seek product recommendations, and request onsite demonstrations from potential suppliers.



3. Learn how to get good data. Learn how to use the system and make sure the manufacturer offers hardware/software training such as videos, in-person training, and robust support documents. Learn how to distinguish between good data and bad data.



4. Set up equipment properly. Review all training materials and test all equipment. Make sure you understand the type of support available with your purchase and build in time to call support if you have questions. Keep records of all your connections/settings and create a template file to help assure experiment reproducibility.



5. Set up participant properly. Become familiar with proper techniques for applying electrodes and transducers prior to the experiment. Comfortable participants and relaxed technicians yield better results.



6. Create an optimal lab setup. Devise a neutral lab environment that offers participants a relaxed atmosphere. Purge the test area of factors that might adversely influence participants—loud or distracting noises, odors, images on walls, animals, magazines, etc.



7. Check system. Test electrode impedance levels before recording to ensure that electrodes and leads are making good contact with participant. Confirm that the data acquisition devices are working properly. Make sure that the camera is working and the lighting is adequate for proper viewing and analysis.



8. Document your procedures. Craft a reference document that steps you through the entire setup and experiment, including secure backup. Include detailed notes and save them with the data—this can prove helpful if something doesn't go according to plan during the study.



9. Establish participant guidelines. Verify that participants meet all requirements/prerequisites (e.g., fasting or exercise) and have signed all necessary consent forms before commencing with the study. Make sure participants are fully informed and comfortable with their role before they arrive for the test.



10. Do a pilot study. Practice collecting data with your competent, well-trained assistants to overcome problems and ensure you are getting good data. This study should include greeting the participants, setting them up, running the experiments, and checking the data.