

PROCONTROL IMAGING CHECKLIST

SUBJ: _____

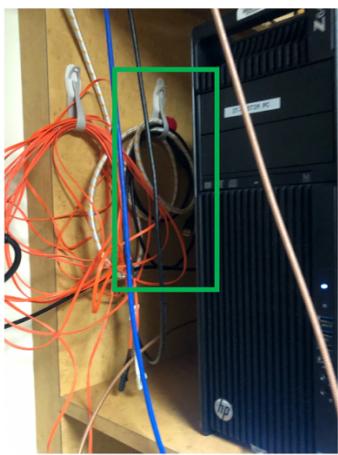
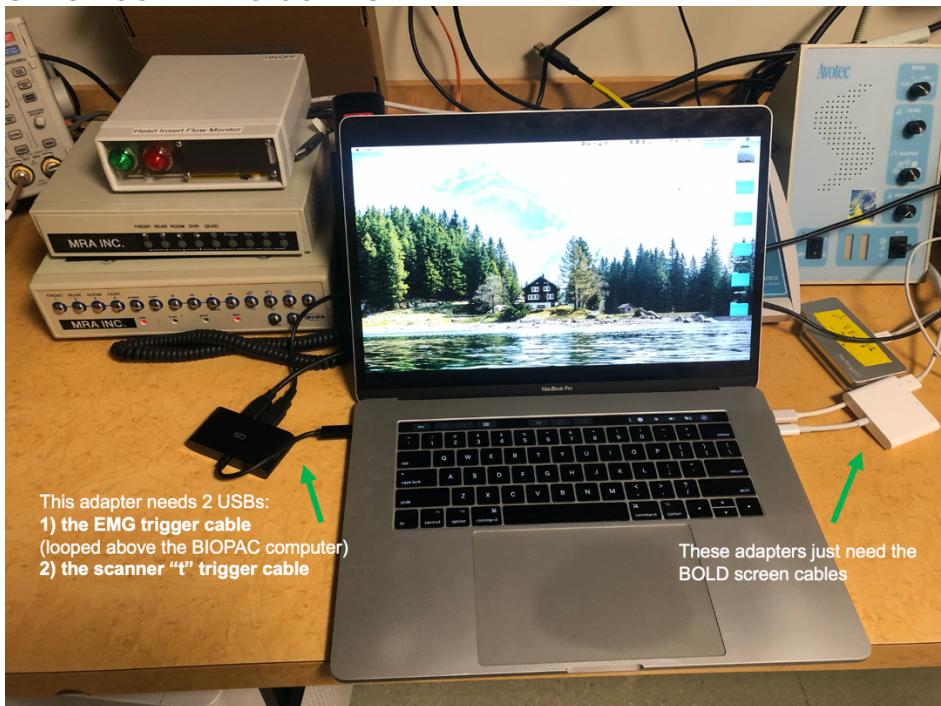
PRE

POST
(circle)

PRE-SCAN SETUP

~ 45min. BEFORE PARTICIPANT ARRIVES ~

- BRING DOWN **IMAGING BAG** WHICH SHOULD INCLUDE:
 - ELECTRODE PREP GELS, WIPES AND SPRAY WATER BOTTLE
 - ELECTRODES + LEADS
 - MRC CAMERA
 - OBS MAC COMPUTER
 - PERSONAL COMPUTER
 - USB DONGLES
- SETUP SCANNING COMPUTER

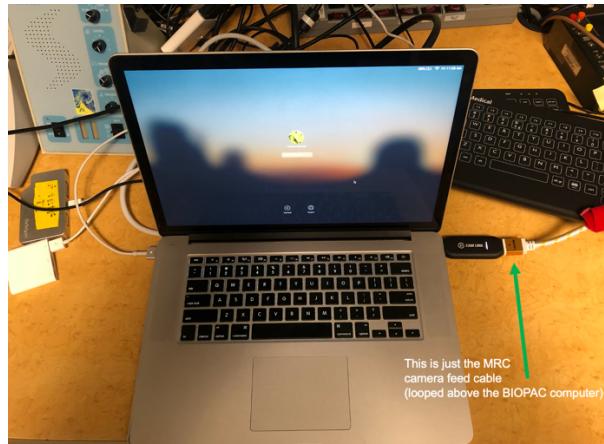


PROCONTROL IMAGING CHECKLIST

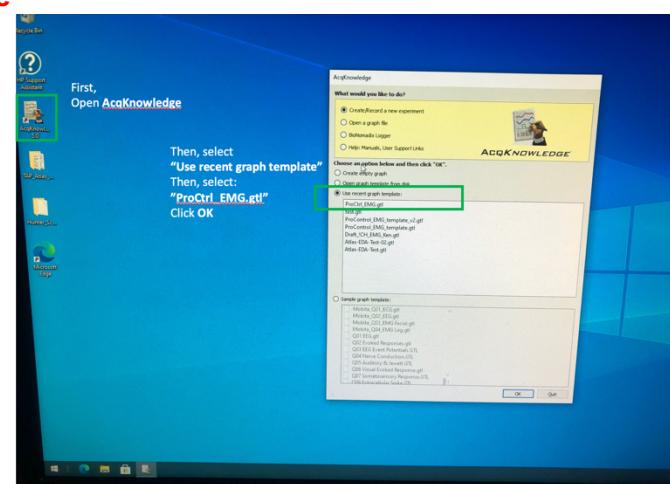
- CONNECT SCAN COMPUTER TO BOLD SCREEN AND THEN CONNECT USB FROM THE TRIGGER BOX, AS WELL AS THE TRIGGER CABLE AND CHARGING CABLE
 - * dual-link DVI cable: to connect to new mac laptop, use (1) USB dongle, (2) grey box for DVI input
 - * Psychopy requires laptop to be in 'mirror mode' to work
 - * after turning on power board, press input '16' on control panel (see photos below)
 - * (rare issue) if BOLDscreen doesn't connect to your laptop, turn the BOLDscreen off and remove the cable connection to your laptop. Then RESTART your laptop, and then plug in BOLDscreen again and turn back on.



- SETUP OBS LAPTOP WITH OBS LOADED
 - PLUG IN CAMLINK - HDMI CABLE INTO RIGHT HDMI PORT



- LOGIN TO BIOPAC COMPUTER
 - PASSWORD: **AcqKnowledge**
- OPEN BIOPAC – LOAD CONFIGURATION



PROCONTROL IMAGING CHECKLIST

- PREPARE PARTICIPANT METAL-FREE MASK ON COUNTER
- PREPARE TABLE SHEET
- PULL OVER EMG CHANNELS ONE AT A TIME (White, R, O, Y, G, Teal, B, Purple)



- ATTACH LEADS FOR EACH CHANNEL
- ATTACH MRC CAMERA TO VELCRO
- CORRECT MRC CAMERA LENS FOCUS
- DECIDE LIST OF TRIALMATS FOR SCAN

PRE-SCAN INSTRUCTION

- ASK PARTICIPANT IF THEY NEED TO USE THE BATHROOM
- COMPLETE AOP AND METAL SCREENING FORM WITH SUBJECT IN TESTING ROOM
- ASK ABOUT GLASSES

"For this study, we will be measuring your brain activity while you make hand movements and when watching videos of hands moving. Before I explain what you will be doing in the MRI scanner today, I want to start by talking a bit about MRI scanning in general."

- MRI basically involves taking small photos of your brain
- Importance of keeping your head and body still. Do not cross your legs.
- During the scan, there will be periods where you will need to perform tasks and there will be periods where you can rest/relax. During the rest periods, it's important you don't move your head.
- There will be periods of activity and periods of rest. During the tasks, it's really important to focus on the tasks at hand. Do your best to stay focused! Try hard not to let your mind wander and think about other things.
- MRI's are loud. We have earplugs
- Getting comfortable. Go pee – get water before scan.

MOVE SEE INSTRUCTION

The main thing you will be asked to do in the scanner today is to make different hand gestures with your left hand, as well as watching a biological and robotic hand perform different hand gestures.

*** START SLIDESHOW ***

- EXPLAIN THE TRIAL
 - EXPLAIN THE 8 HAND GESTURES
 - When making each gesture, use a force that you could repeat 1000 times? So not too hard and not too soft. Additionally, we need you to do each gesture the same way every time.
 - PRACTICE MAKING EACH OF THE HAND GESTURES
- IMPORTANCE OF GOING BACK TO NEUTRAL/REST POSITION AFTER EACH GESTURE**
- EXPLAIN THE BIOLOGICAL/ROBOTIC HAND VIDEOS
 - SHOW ALL OF THE VIDEOS
 - SHOW LOCALIZER

PROCONTROL IMAGING CHECKLIST

EMG SKIN PREPARATION

- CLEAN SKIN WITH WATER
- APPLY ABRASION GEL & ELECTRODE GEL
- ATTACH 17 ELECTRODES
- TAPE EVERYTHING DOWN
- TEST EVERY CHANNEL'S ELECTRODE IMPEDENCE IS <15KΩ

COMMENTS ON IMPEDENCE:

PARTICIPANT SCANNER ENTRY

- TAKE PARTICIPANT TO BATHROOM
- METAL CHECK
- MASK-CHANGE & EAR PLUGS
- FEET REST & CALL BELL TO LEFT ARM
- CREATE ARM CUSHION USING FOAM AND A SECOND BLANKET
- ATTACH EMG CABLES FOR ALL CHANNELS IN ORDER: CHANNEL 1 (WHITE) SHOULD START ON THE APEX OF THE BRACHIORADIALIS, ALSO DOTS WILL BE MARKED IN POST-SCAN



- ALIGNMENT (TURNS ON RED LASER - TELL SUBJECT TO SHUT THEIR EYES)
- TABLE IN (MOVE TABLE SO RED LASER IS ON SUBJECT'S FOREHEAD)
- LANDMARK (THIS SAVES THE LASER LOCATION WHEN YOU'RE HAPPY WITH IT)
- ALIGNMENT (PRESS AGAIN TO TURN THE LASER OFF)
- THEN SEND SUBJECT IN! ADVANCE TO SCAN
- CHECK MRC CAMERA FEED
 - MANUALLY ADJUST FOCUS BY REACHING INTO BORE

SCAN PAPERWORK

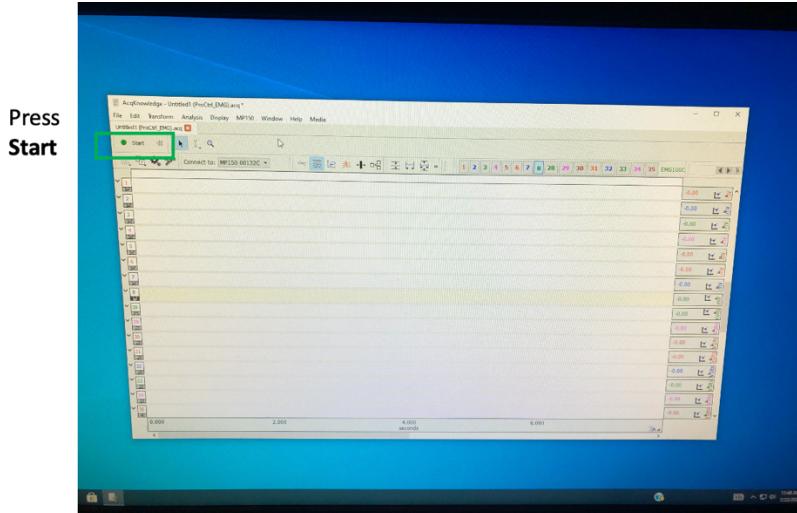
- GET THE **MRI ORDER FORM** FROM THE 3TB PATIENT ORDERS FOLDER BEFORE THE SCAN (GET THE 2 STICKERS - 1 STICKER GOES IN SCANNER LOG BOOK ON THE TABLE, 2ND STICKER GOES ON THE SUBJECT'S METAL SCREENING SHEET- PLACE OVER THE ORIGINAL STICKER)
- WRITE THE EXPERIMENTER NAMES ON THE **MRI ORDER FORM** (MUST PUT DR / PHD IF HAVE IT)
- PUT THE **MRI ORDER FORM** AND COMPLETED METAL SCREENING FORM IN THE "COMPLETED PAPERWORK" FOLDER

PROCONTROL IMAGING CHECKLIST

- THE B1 MRI DAILY FORM GOES TO LEVEL 1 BINDER
- AOP FORM GOES TO POSTBACS FOR FILING

START SCAN

- PRESS RECORD ON OBS SOFTWARE – STOP RECORDING AT END OF SCAN
- SAVE AND RESTART EMG FILES ON BIOPAC AFTER EVERY RUN
 - SAVE EACH: “sub-bi01_pre_run1”, “sub-bi01_post_run1” etc.



PROCONTROL IMAGING CHECKLIST

Subj Code: _____ Scan Code: _____ Date: _____

Was a clinical scan performed? YES NO

| SCAN | TRIALMAT # | EMG -SAVED- | SCAN # | COMMENTS |
|------------------------|------------|----------------|--------|----------|
| MOVESEE RUN1 | | | | |
| MOVESEE RUN2 | | | | |
| MOVESEE RUN3 | | | | |
| MOVESEE RUN4 | | | | |
| MOVESEE RUN5 | | | | |
| MOVESEE RUN6 | | | | |
| HAND-TOOL LOCALIZER | | | | |
| STRUCTURAL | | | | |

POST-SCAN

- CLEAN SKIN
- MARK ELECTRODE SITES ON ARM, TELL PARTICIPANT TO KEEP THEM THERE
- SCANNER CLEAN UP & **FILL OUT CLEANING FORM**
- TESTING ROOM CLEAN UP