# Procedures

During subject recruitment

* Check that participant does not have any items on the MRI safety screening list
  + If they do have some items on the MRI safety list, consider asking Sophia about MRI safety
* Ask for prescription for glasses if participant does not plan to wear contact lenses

Before meeting the subject

1. Assign subject code
2. Check task order for the relevant session for each participant
   1. Check set number if the participant will complete the decision making task during that session
3. Prepare research study information sheet, consent form, subject intake form (demographic information sheet), MRI safety screening form
4. Open any relevant PowerPoint slides & practice files on Lenovo laptop

Meeting the subject

1. Ask subject to read the research study information sheet and sign consent form
2. Ask subject to fill in subject intake form
3. Ask subject to fill in MRI safety screening form (explain to them what each item on the list is, and ask about surgical history)
4. Explain the tasks relevant to the specific session
5. Ask participant to do practice trials
   1. For any task run on psychopy:  
      After the participant completes the task, go to PsychoPy Runner and scroll up in the ‘stdout’ window. Check that they answered a satisfactory number of trials correct
   2. For the decision-making task:  
      Check in the MATLAB command window that the participant’s performance is over 0.8 (perfect performance is 1).
6. Before moving to ZB216 MRI room, ask participant to stay still during the scan
7. Bring Lenovo laptop used for practice runs to the ZB216 MRI room

Inside ZB216 MRI room

1. Ask participant to change clothes, remove all clothes except underwear, socks and shoes and change into MRI robe
2. (if needed) Prepare MRI-compatible glasses for participant
3. Set up ZB216 laptop computer to display the first task of the session and enter the subject code / session number as appropriate
   1. For any task run on psychopy:  
      **participant**: enter number as assigned before meeting the participant  
      **session*:*** 1 for single task, 2 for dual task
   2. For the decision-making task:  
      FIRST open MATLAB 2019b on Desktop  
      THEN find and open task file INSIDE MATLAB  
      **subject code**: enter ‘s’ + subject code for single task; ‘d’ + subject code for dual task  
      **set number**: enter number as assigned before meeting the participant
4. Open PedalDataRecording\_0110.py on Lenovo laptop
5. Connect ZB216 laptop computer to MRI display (cables stored in overhead shelf)
   1. HDMI cable
   2. USB cable
6. Connect silver cable for pedal data to the Lenovo laptop
7. Set up calibrator for foot pedal
   1. Turn on calibrator for foot pedal (switch is behind the monitor at the secondary user workstation)
   2. Turn knob to find and select ‘HHSC-2x1-FP-3’ on calibrator
   3. Select ‘HID JOYSTICK’ on calibrator
   4. Check that the joystick object is connected to the Lenovo laptop in windows at:  
      ***Control Panel > Devices and printers > (game controller) > Properties > Test***
   5. Check that pedal movement is picked up by the laptop
8. Set display from ‘内’ to ‘外’
9. When ready, ask participant to check for metal at the metal detector
10. Invite participant into Zone IV. Provide MRI-compatible walking aid if needed.
11. After participant has laid down, give them the button box that has buttons ‘1’ and ‘2’. Ask participant to press the left or right buttons according to the instructions for that specific task

During experiment

1. Before each task / scan, verbally remind participant about
   1. The task they will be doing (時鐘 / 顔色 / 決策 / 圖片)
   2. Whether they need to step on the pedal or not
   3. Press space bar. The screen should show a fixation cross.
2. Check with the radiographer / primary user for preparing the trigger. If ready, press the button under ‘就緒’, ‘觸發’. If trigger is ready, the light for ‘就緒’ should light up
3. Check that the trigger is sent to the ZB216 laptop ***AFTER*** the MRI BOLD sequence has already started
   1. For dual tasks: pay attention to the light next to ‘觸發’. Once it flashes, press ‘s’ on the Lenovo laptop
4. Check that the participant is responding. If they are responding, the lights under ‘1’ and ‘2’ should light up.
5. Pay attention to when the experiment ends. “實驗完成” will be displayed when the task is complete
6. Switch display from ‘外’ to ‘内’
7. Set up the next task, and repeat from step 1.

After experiment

1. Check that the participant is feeling okay
2. Ask them to change clothes and tidy up work station
3. If this is session 1, remind participant about date and time for session 2.  
   If this is session 2, bring participant to room in Zone II to provide them compensation.

# File locations

Practice task folder locations:

* Lenovo laptop in the pink bag in the storage cupboard, practice tasks are stored in   
  ***This PC > Documents > collab\_mri\_tasks***

Experiment tasks folder location:

* On the ZB216 MRI room laptop, experiment tasks are stored in   
  ***Desktop > Data (shortcut) > RS\_BC > collab\_mri\_tasks***
* Python script for collecting pedal data is stored in the Lenovo laptop  
  ***This PC > Documents > collab\_mri\_tasks > motor > pedal > PedalDataRecording\_0110.py***