


COGNITIVE FRAILITY TASK

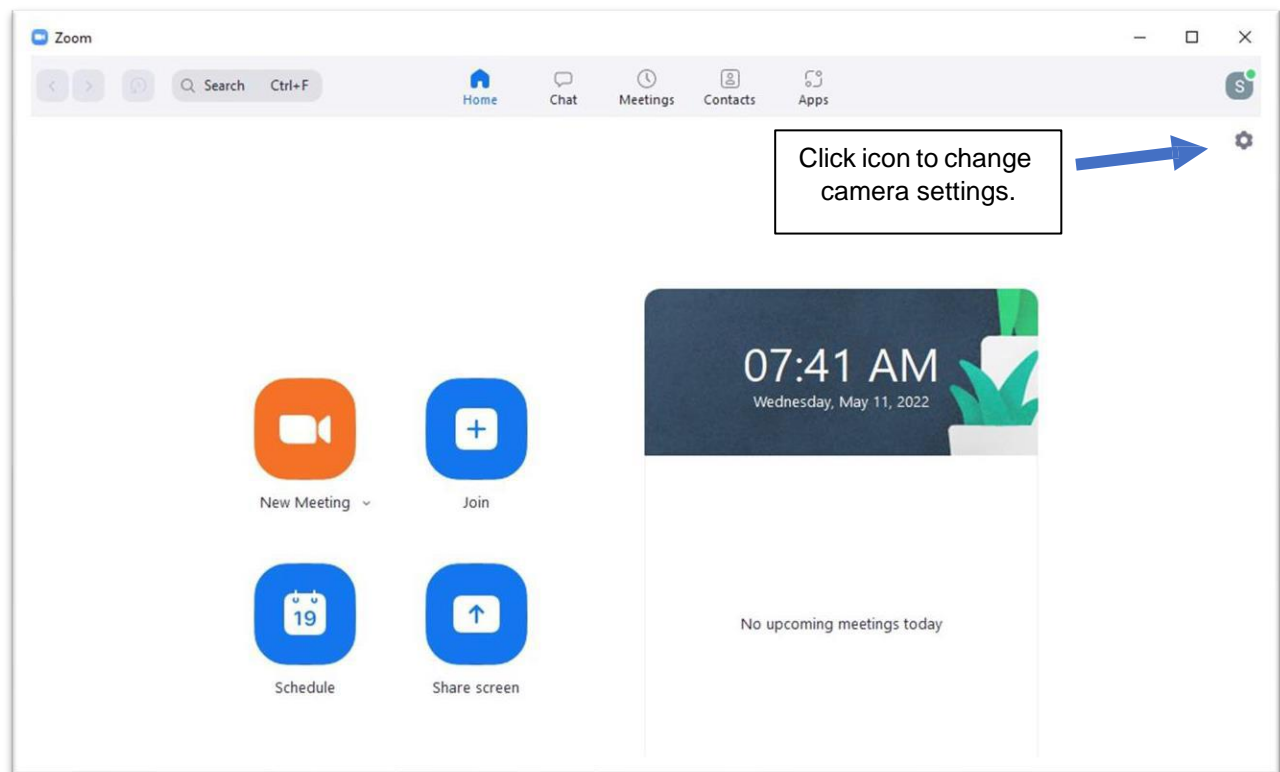
Purpose: Cognitive frailty, a combination of physical frailty and cognitive impairment, is associated with functional decline in older adults. This task has two components, a physical frailty task (Singe-task) followed by a combined physical and cognitive task (Dual-task).

Materials:

- ☐ Logitech HD Pro Webcam camera
- ☐ Desktop/laptop/tablet with Zoom installed
- ☐ Bendable Tripod
- ☐ Stopwatch

TASK INSTRUCTIONS

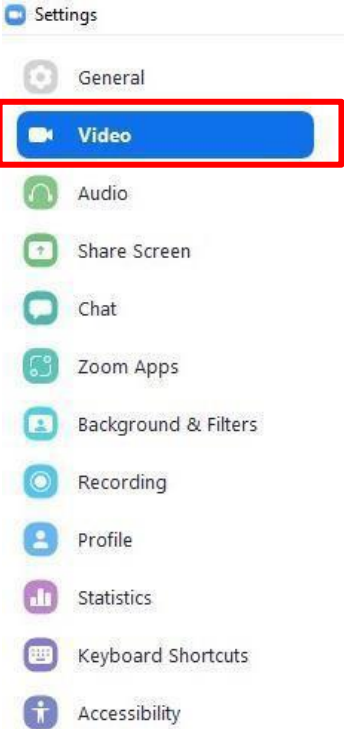
- Set up camera and stand.
- Rotate camera vertically.
- Plug the camera USB into computer.
- Face computer screen toward you and away from where participant will be standing.
- Move web camera to focus on where participant will be standing.
- If you or the participant prefer to use a standard camera instead of the webcam, that is acceptable. Ensure the individual is fully captured within the frame of the video by referring to the Zoom setup instructions.
- Open Zoom.
- Select the  icon on main Zoom screen to change camera settings.



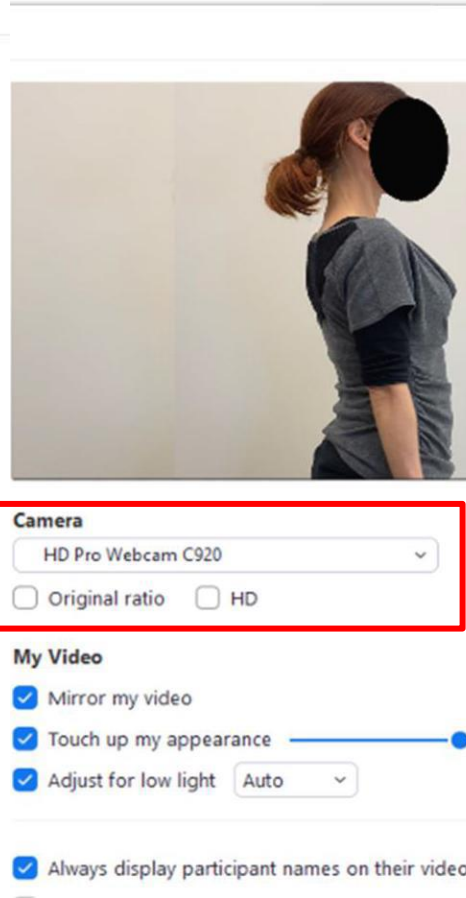
Standard Operating Procedures: Cognitive Frailty Task

- Ask participant to stand in front of camera with their dominant arm facing the camera.
- Select "Video"
- Confirm "HD Pro Webcam" is selected under "Camera"
- Select "rotation" icon.

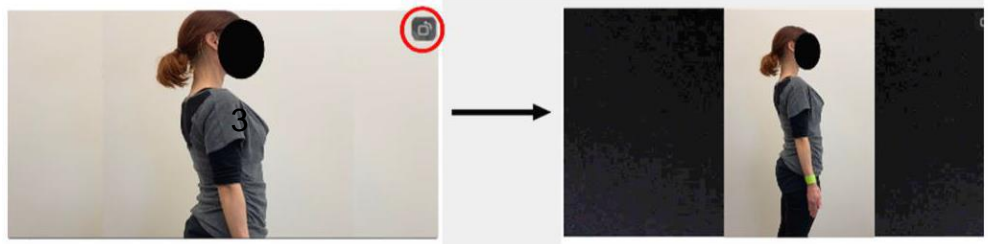
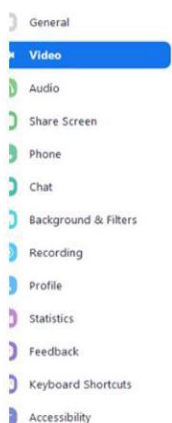
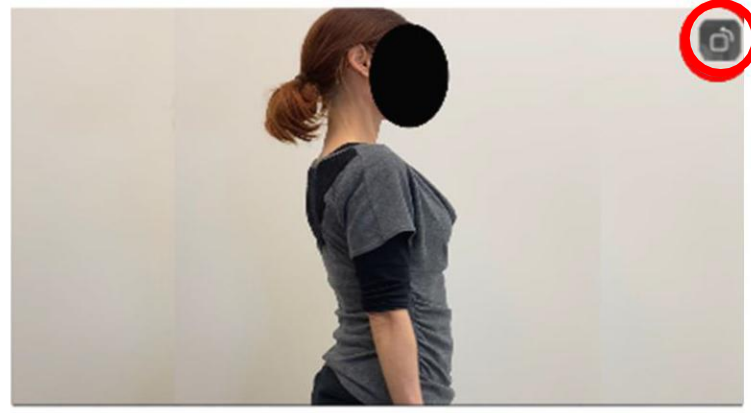
Step 1.



Step 2.



Step 3.

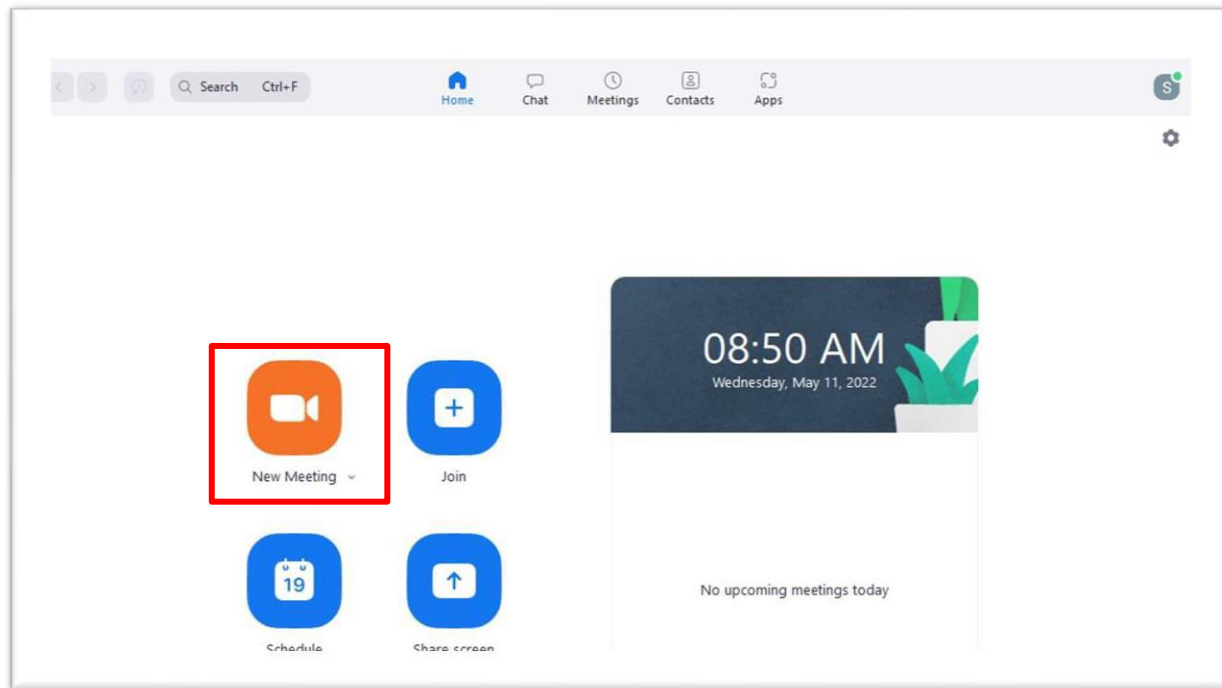


Step 4.

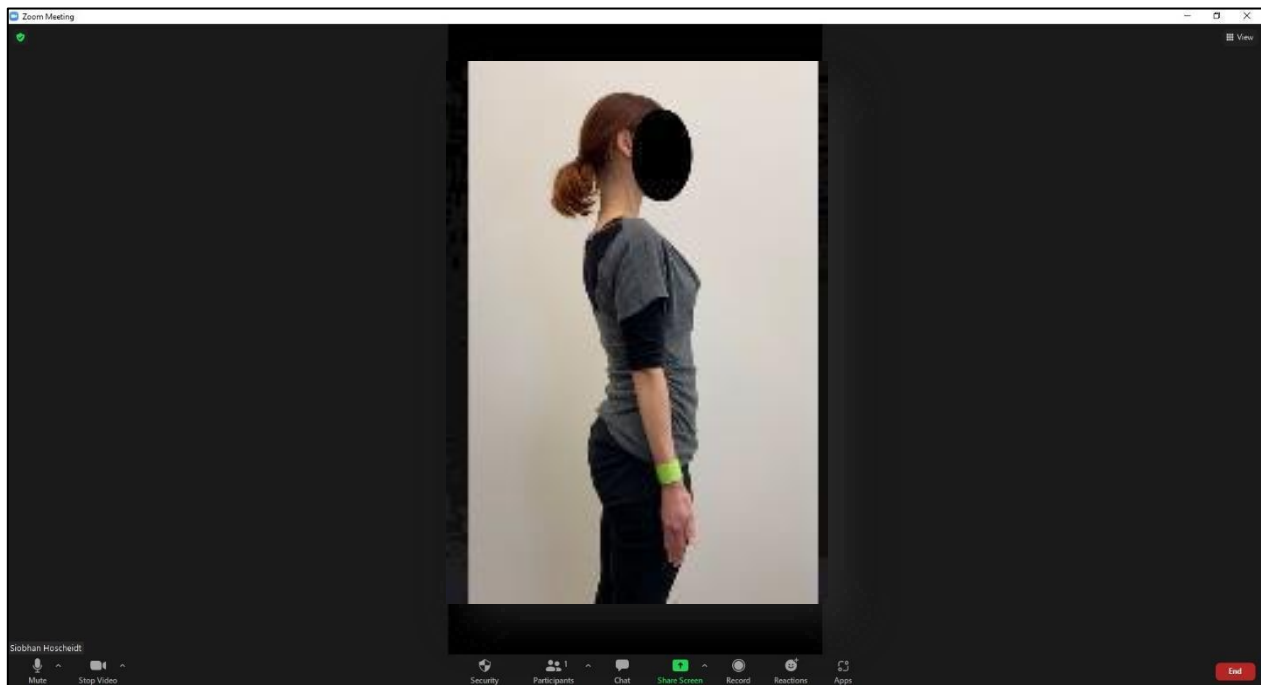
Rotation: Confirm participant is captured on video from approx. 1ft above head to knees.

Standard Operating Procedures: Cognitive Frailty Task

- Close “Settings” window to return to home screen (shown below).
- Select “New Meeting”.



- Confirm participant is captured on screen from above head down to knees, as shown below.



SINGLE TASK INSTRUCTIONS:

Purpose: The Single Task is a baseline measurement of physical movement where the participant may exclusively focus on the moving of their arm.

"Give me just a minute while I set up the computer for the next task." (See Task Instructions on pages 1-3 of Cognitive Frailty Task SOP).

"I'm going to have you stand here with your nondominant arm facing the camera." (Show participant where to stand)

(Face the participant and demonstrate task in slow motion while giving instructions Be sure to fully flex and extend your arm during the demonstration.)

"For this task, you will fully flex and extend your arm repeatedly, as quickly as you can, in a steady and continuous fashion. I am demonstrating in slow motion; however, you will want to fully flex and extend your arm as quickly as you can." (Demonstrate task at fast speed).

*"First, we will do a practice. Start with your **nondominant arm** resting at your side. When I say "Begin," please extend and flex your **nondominant** arm as quickly as you can, in a steady and continuous fashion until I tell you to stop. The practice session is not being recorded.*

"Do you have any questions?" (Answer any questions participant may have)

"Begin." (Time the participant for 20 seconds)

"Stop."

- During practice, make sure participant isn't overextending arm past the hip and that the motion is smoothed and controlled.
- Have the participant roll their sleeves up past their elbow for that the elbow and forearm are visible to the camera.

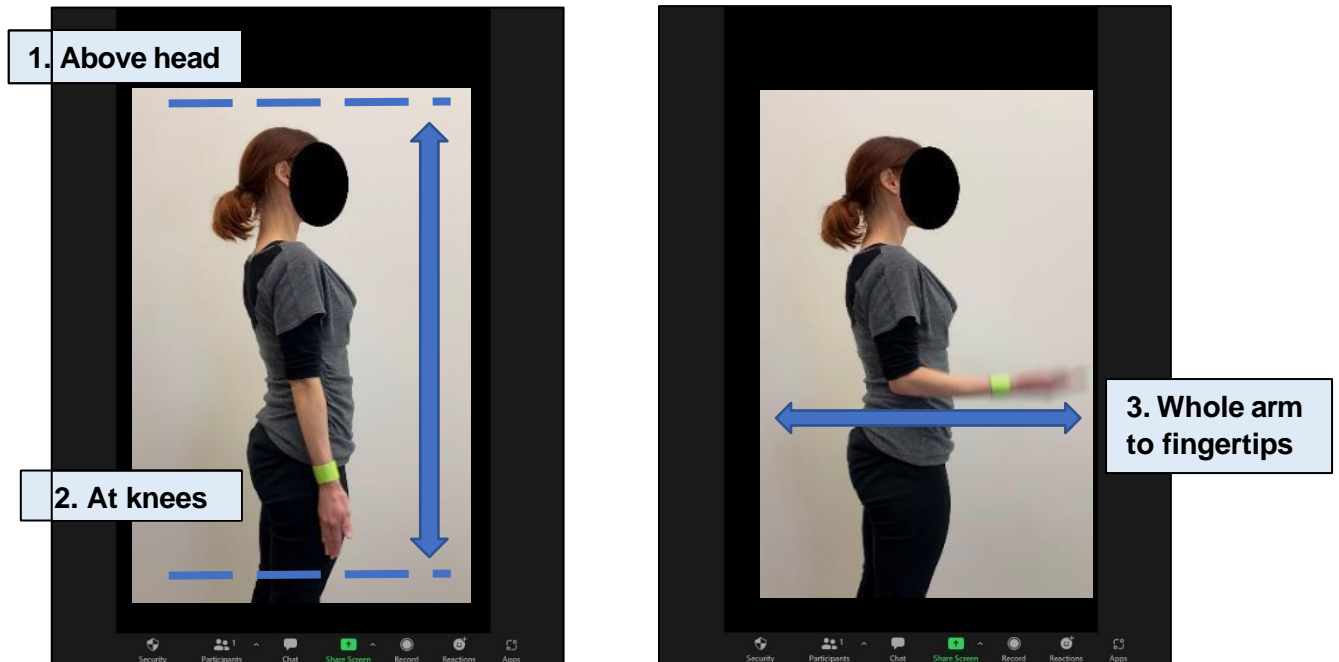
Standard Operating Procedures: Cognitive Frailty Task

*“Now I’m going to have you turn so your **dominant arm is** facing the camera.”*

“This task will be filmed. Give me just a minute to set up the camera.” (Adjust camera as needed)

Confirm that the entire arm is visible during the flexion-extension task, including the hand of the participant.

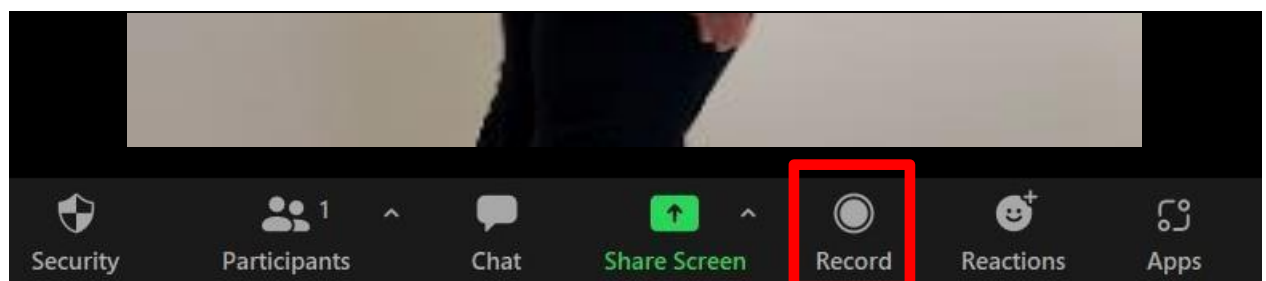
VIDEO CAPTURE CHECKPOINTS



“As before, you will start with your arm down by your side, fully extended. I will tell you when to begin and when to stop. Do you have any questions before we start?”

-Answer any questions the participant may have

1. Select “Record” icon at bottom of screen. Use Computer Audio and Save to Device.
 - a. Three step process. Record→Use Computer Audio→Start



Standard Operating Procedures: Cognitive Frailty Task

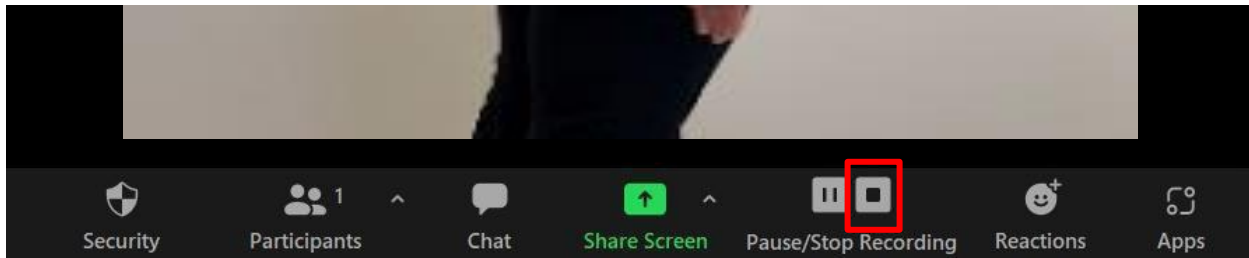
2. Tell participant to begin **AFTER** the recording has started

“Begin.”

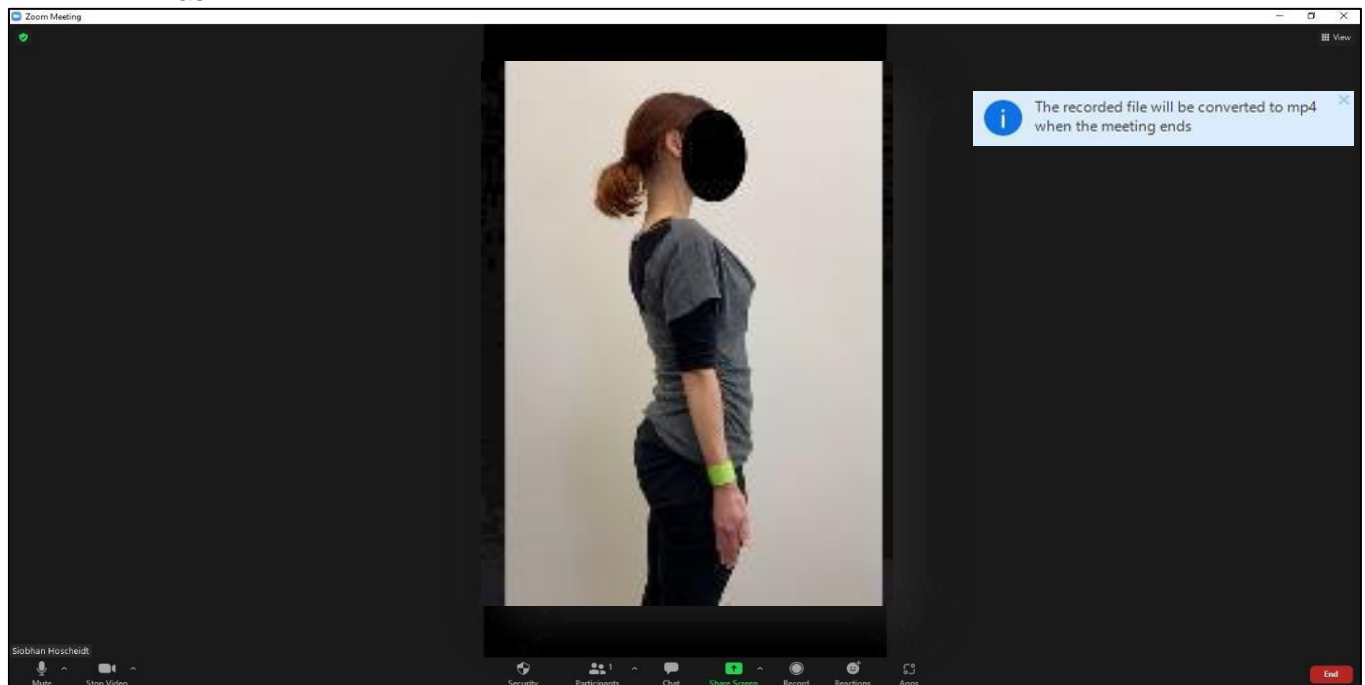
3. Start stopwatch when participant begins to move their arm.
4. Time for 20 seconds. **NOTE: Make sure the video captures 20 seconds of the participant moving their arm.**

“Stop.”

5. Press the “Stop Recording” icon.



1. You will see this blue box appear with the message, “The recorded file will be converted to mp4 when the meeting ends”.
2. This is the format the file should be saved in.
3. Disregard the message and allow the participant to rest for 3 minutes before starting the Dual Task.



“I’m going to have you sit down and rest your arm for 3 minutes. I will let you know when we are moving onto the next task.”

DUAL TASK INSTRUCTIONS

Purpose: The Dual Task is a measure of the same physical arm movement as the previous task, however; during this task the participant is asked to count backwards out loud by “1” while moving their arm. The combination of physical and cognitive tasks places more demand on cognitive processes, compared to the Singe Task.

*“Go ahead and stand where you were before with your **dominant arm** facing the camera.” (Show participant where to stand)*

“For this next task, you will move your arm exactly as you did before, as quickly as you can in a steady and continuous fashion, fully flexing and extending your arm. You will start with your arm resting at your side, fully extended. While moving your arm, you will count backwards by “1” starting with the number 79. Please count loudly while performing this task as the camera recording will need to pick up your voice.”

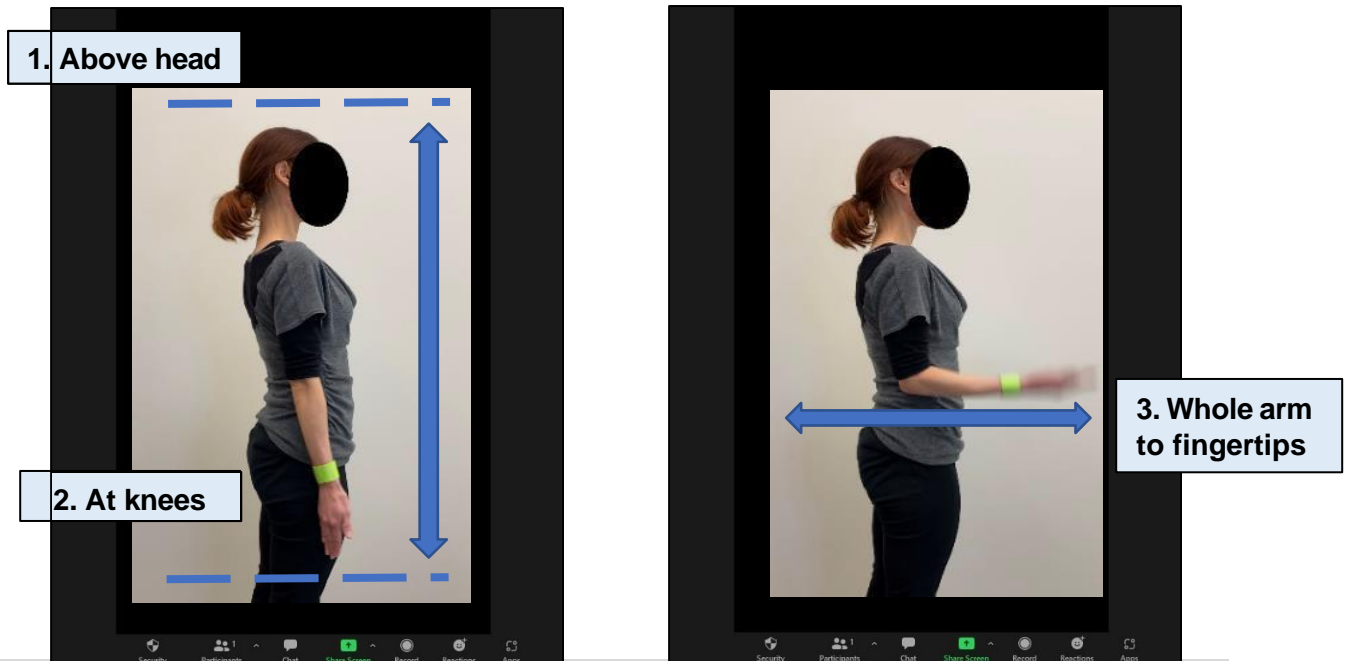
“Do you have any questions before we start?” (Answer any questions the participant may have)

“This task will be filmed. Give me just a minute to set up the camera.” (Set up camera)

“When I say “Begin” you may start. I will tell you when to stop.”

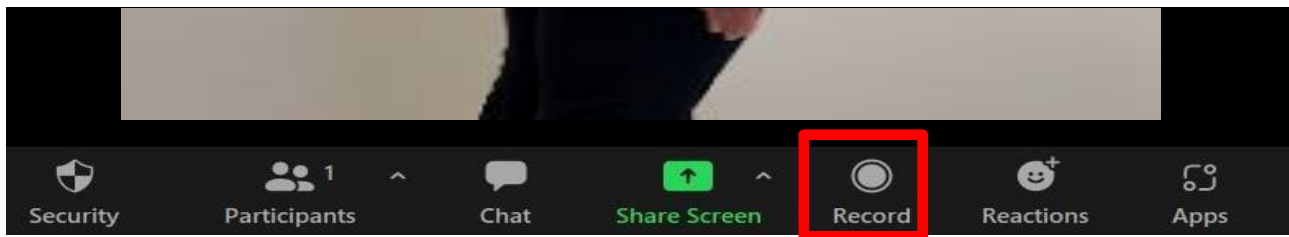
- Confirm that the entire arm is visible during the flexion-extension task, including the hand of the participant.

VIDEO CAPTURE CHECKPOINTS



Standard Operating Procedures: Cognitive Frailty Task

1. Select “Record” icon at bottom of screen. Use Computer Audio and Save to Device.
 - a. *Three step process. Record → Save to Computer Audio → Start*



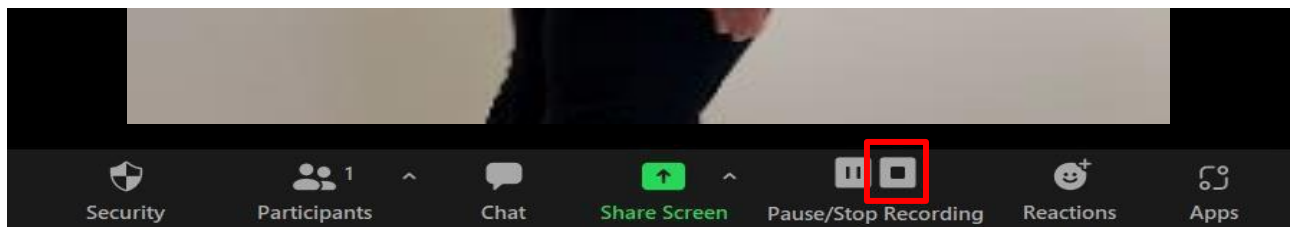
2. Tell participant to begin AFTER the recording has started

“Begin.”

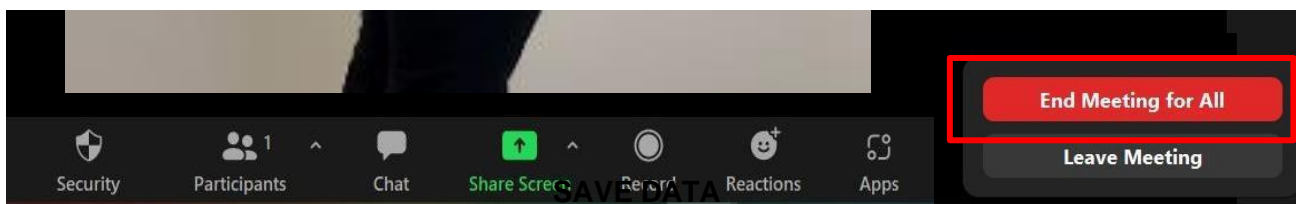
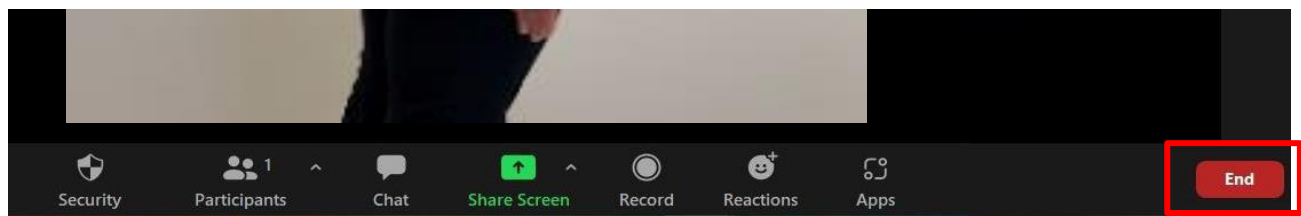
3. Start stopwatch when participant begins to move their arm.
4. Time for 20 seconds. **NOTE: Make sure the video captures 20 seconds of the participant moving their arm.**
5. After 20 seconds of performing the task, tell participant to “Stop”.

“Stop.”

6. Press the “Stop Recording” icon.

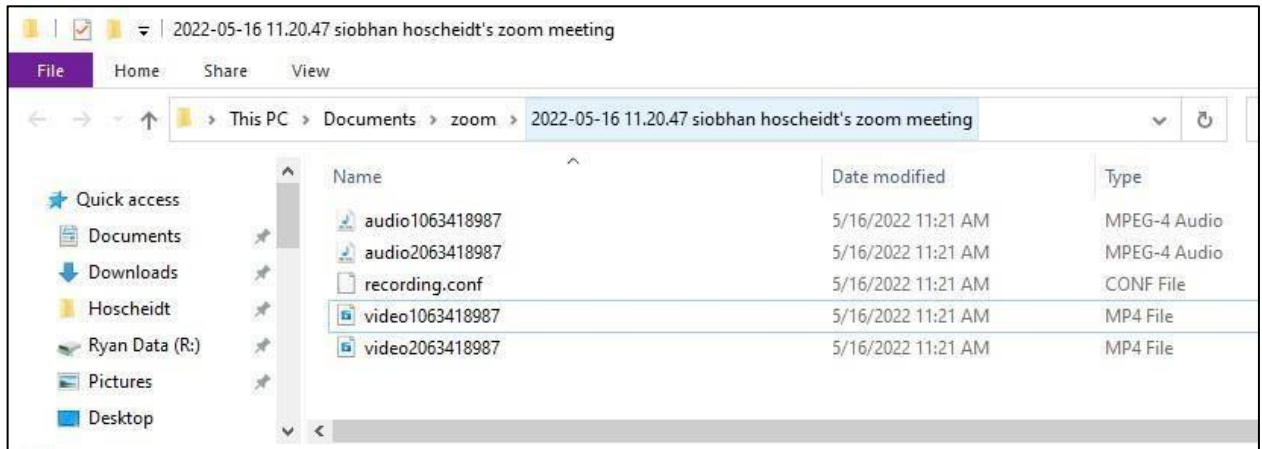


1. You will see this blue box appear with the message, “The recorded file will be converted to mp4 when the meeting ends”.
2. This is the format the file should be saved in.
3. To close Zoom select the “End” icon and “End Meeting for All”.

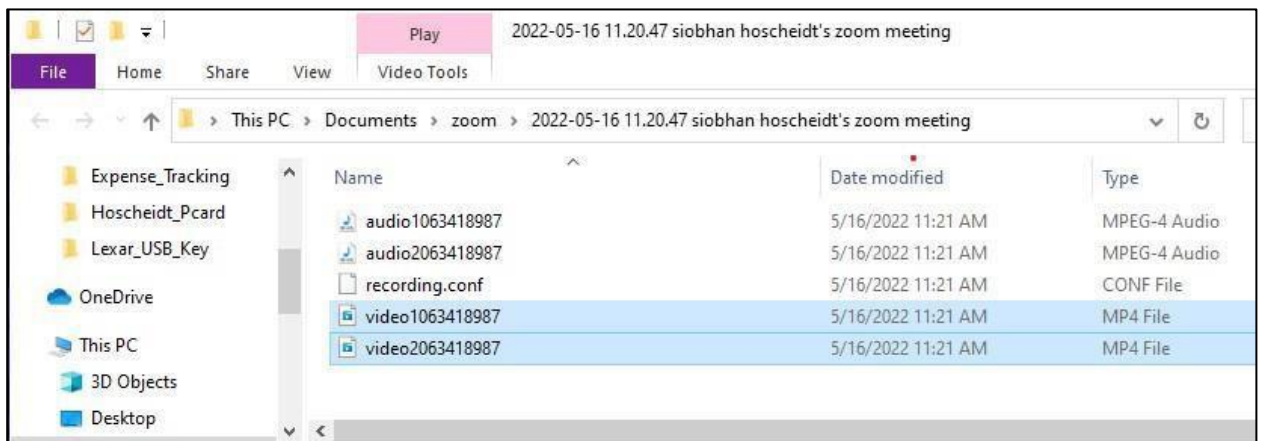


Standard Operating Procedures: Cognitive Frailty Task

- Zoom recordings are automatically saved to a default folder that will automatically open after data files are automatically converted by the program. If the files do not automatically open, they can be retrieved via Documents → Zoom (see below).

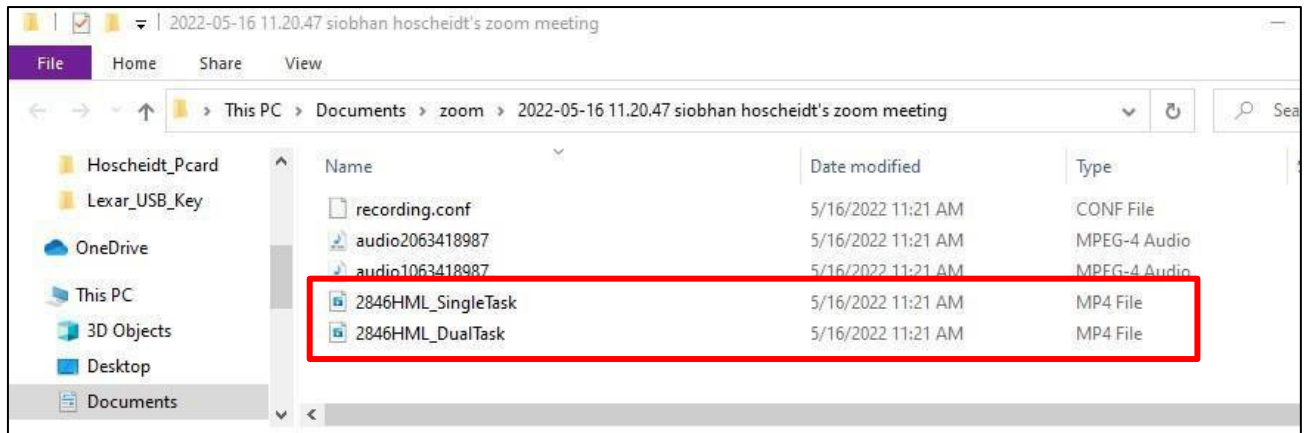


- There should be two MP4 files, one for each task recorded.
- Determine which MP4 file corresponds to each task by looking at the number that follows "videoXXXX". The lower number will be the Single Task and the higher number will be the Dual Task
 - E.g., = Single Task → **video1063418987**; Dual Task → **video2063418987**
- If you aren't sure open each video file to confirm before changing naming convention.



- Rename each file using participant ID followed by "XXXXHML_SingeTask" or "XXXXHML_DualTask" (see following example).

Example: MP4 files renamed using participant ID and Cognitive Frailty Task name.



9. Save MP4 files to participant folder under folder named "CognitiveFrailty_Tasks".
10. *Please be sure to save files on a drive that gets backed up regularly to your institution's server.*
11. Save participant folder to external hard drive.

Troubleshooting:

Participant cannot fully extend or flex elbow

If participant cannot fully extend and/or flex elbow (less than 120 degrees), have participant perform both tasks and record all data per instructions above. Note restricted arm movement in participant's folder.

Minor error made while completing dual task

If participant makes an error while counting backward but continues the dual task, do not say anything, and allow her/him to continue until 20 seconds have passed. Note this error in the participant's folder.

Significant error made while completing dual task

If participant 1) stops counting backwards but continues to flex and extend their arm, 2) stops moving their arm but continues to count backwards, OR 3) stops performing the task completely, tell the participant to stop and stop the recording. Have the participant wait for 3 minutes to rest their arm. During this time, give instructions again and answer any questions. After 3 minutes, have the participant perform the task again and record all data per instructions above.

If participant confirms they understand the instructions, but performs poorly on the task during second attempt, do not stop the task or the recording; let them finish the 20 seconds. Make a note of the participant's performance in their chart, but do not provide a third attempt.