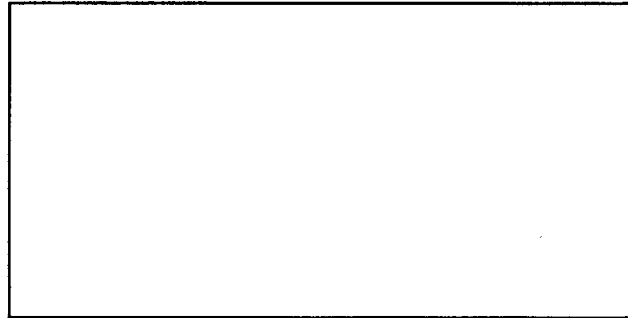


July 15, 1993

WOMEN'S HEALTH AND AGING STUDY

HOME PHYSICAL EXAMINATION



CONFIRMATION OF APPOINTMENT:

CALL PARTICIPANT EARLY IN THE EVENING ON THE NIGHT BEFORE THE EXAMINATION IS SCHEDULED.

Hello, Ms. _____, my name is _____ from Westat. I am the nurse who will be coming to examine you as a part of the Women's Health and Aging Study that we are doing for the National Institutes of Health and Johns Hopkins Medical Institutions.

I just wanted to remind you that the examination is scheduled for tomorrow at _____ AM/PM.

CONFIRM ADDRESS AND ASK FOR DIRECTIONS IF NECESSARY.

INTRODUCTION AT THE DOOR:

Hello, Ms. _____, I'm _____ from Westat. (We spoke yesterday on the phone.) I am here to examine you as a part of the Women's Health and Aging Study. Before we begin, I need to find an area in the house where we can conduct the exam.

1. LOOK FOR AN AREA WITH TABLE SPACE AND AN UPRIGHT CHAIR.
2. LOOK FOR A COMFORTABLE CHAIR AND FOOT STOOL FOR THE SEMI-RECUMBENT BLOOD PRESSURE.
3. LOOK FOR A 4.5 METER SPACE FOR THE MEASURED WALKS.
4. MAKE SURE THAT THE PARTICIPANT IS DRESSED APPROPRIATELY; I.E., WEARING THE GOWN LEFT BY THE INTERVIEWER AND CASUAL SHOES - NO SLIPPERS.
5. SET UP YOUR EQUIPMENT USING THE GUIDE ON PAGE 61 OF THIS FORM.

Home Physical Examination Components

<u>Test Number</u>		<u>Starts on Page</u>
	Exclusion Criteria	D3
1	Observation of Limb Abnormality	D5
2	Arm Circumference and Skinfold	D6
3	Lung Examination	D8
4	Heart Examination	D8
5	Holter Monitor	D10
6	Resting 12-Lead ECG	D12
7	Knee Height	D14
8	Joint Examination - Lower Extremities	D14
9	Semi-Recumbent Blood Pressure	D16
10	Semi-Recumbent Ankle-Arm BP Index	D18
11	Physical Performance Measures - Stands	D20
12	Measured Walks	D22
13	Chair Stand	D24
14	Repeated Chair Stands	D24
15	Grip Strength	D26
16	Pinch Strength	D28
17	Upper Extremity Strength	D28
18	Upper Extremities Examination	D30
19	Hand Photos	D32
20	Extra-Ocular Movements	D34
21	Confrontational Visual Fields	D34
22	Audiometry	D36
23	Spirometry	D38
24	Knee Extensor Muscle Test	D40
25	Hip Flexion Muscle Test	D42
26	Shoulder Rotation	D44
27	Somatic Sensation	D46
28	Purdue Pegboard	D48
29	Vibration Sensitivity	D50
30	Sitting Chair Step Test	D52

EXCLUSION CRITERIA

PROCEDURE	EXCLUSION
1. Mid Upper Arm Circumference/Triceps Skin fold	Cuts and/or rashes
2. Knee Height	Cannot assume 90° angle of knee
3. Blood Pressure	Rashes Small gauze/adhesive dressings Casts Withered Arms Puffiness Tubes Open sores/wounds Hematomas
4. Semi-Recumbent Ankle-Arm Blood Pressure	Rash or skin sores on ankles Participants with venous stasis ulceration or other pathology that precludes placing a BP cuff around the ankle (e.g., open wounds, etc.) Participants with rigid arteries such that an occlusion pressure cannot be reached. Participants with bilateral amputations of legs.
5. Stands	Unable to stand unaided
6. Measured Walks	Paralyses Inability to walk
7. Grip Strength	Acute flare-up of wrist/hand, for example, arthritis or tendonitis
8. Upper Extremity Strength	≥ 3 months status post upper extremity joint surgery or abdominal or chest surgery
9. Confrontational Visual Fields	Never had a stroke (except first 50)
10. Hearing	Discharge from either ear, or pus or blood in either ear.
11. Spirometry	<ul style="list-style-type: none"> - Surgery on chest or abdomen past 6 weeks - Hospitalized for heart problem (heart attack, angina, chest pain, congestive heart failure) past 6 weeks - Detached retina or eye surgery past 6 weeks - Hospitalized for respiratory infection such as flu, pneumonia, bronchitis or a severe cold in past 3 weeks
12. Knee Extensor	Bilateral Paralyses or Casts Lower Extremities Bilateral Hip or AK amputation Bilateral Knee Surgery within 3 months Bedridden participant

13.	Lower Extremity Strength	Unilateral Hip or AK amputation - Perform measurement on the opposite side Bilateral Paralyse Lower Extremities Bilateral Hip or AK Amputation Bilateral hip replacement within 3 months
14.	Somatic Sensation	Never had a stroke (except first 50) Paralyse/Contractures upper extremities - attempt
15.	Purdue Pegboard	Blind Bilateral Upper Extremity Paralyse Bilateral Hand Amputee
16.	Vibration	Bilateral Paralyse lower extremities Bilateral Amputation of feet Bilateral ulcers of the great toe
17.	Sitting Chair Step Test	See pg. 48 of this booklet

1. **OBSERVATION** (Standing)

No Findings 1

A. Limb abnormality by observation

Paralysis/paresis	YES	NO
Right arm.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Left arm.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Right leg.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Left leg.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2

IF YES, DESCRIBE _____

B. Confined to a wheelchair 1 2

C. Amputee/cast

No Findings 1

	Cast	Amputee	Cast Where	Amputates Where
1. Right arm.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>	<input type="checkbox"/>
2. Left arm.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>	<input type="checkbox"/>
3. Right leg.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>	<input type="checkbox"/>
4. Left leg.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>	<input type="checkbox"/>
5. Fingers - amputated		1		
cast		2		

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	4	3	2	1	1	2	3	4	5
Right					Left				

Where - Arm

- At shoulder joint..... 1
- Below shoulder and above elbow joint..... 2
- At elbow joint 3
- Below elbow and above wrist joint 4
- At wrist joint 5
- Distal to wrist..... 6

Where - Leg

- At hip joint 1
- Below hip and above knee 2
- At knee joint 3
- Below knee and above ankle joint 4
- At ankle joint 5
- Distal to ankle 6

2. ARM CIRCUMFERENCE AND SKINFOLD THICKNESS

ARM CIRCUMFERENCE

- A. Our first measurements will be taken using your right arm. First, I'll need to find the midpoint between your shoulder and your elbow. I'm going to mark the spot so I can remember where it is.
- B. Sit at eye level with the site of measurement. Determine the midpoint of the participant's right upper arm, being sure her right arm is bent at the elbow to form a right angle (90°).
- C. Place the tape at zero on the tip of the shoulder. Pull the tape straight down along the back of the arm past the tip of the elbow. Do not bend the tape around the elbow. Locate the tip of the elbow bone (olecranon process) and read the number there to the nearest centimeter. Divide the number by two. The result is the midpoint. Mark the midpoint with the wax cosmetic pencil.
- D. Make the appropriate marks on the arm for the triceps subscapular skinfold measurement.
- E. Please let your arm hang down and slip it through this tape.
- F. Wrap the tape around the arm at the midpoint mark. Check the tension of the tape around the arm. Do not have the tape too loose. Make certain that the tape is flat on the skin all the way around the arm.
- G. Take two readings. If they are not within .8 cm of each other, take a third reading. Read the tape to the nearest 0.1 cm.

SKINFOLD THICKNESS

- A. Make sure that the caliper dial is set exactly to zero.
- B. Have the participant sit on a chair in the same state of undress as for the mid-upper arm CIRCUMFERENCE MEASUREMENT.
- C. Sit at the participant's side by the right arm at eye level with the measurement site. Locate the midpoint mark of the arm. Where this line crosses the mid-point mark, draw a short line. You will now have drawn a "+."
- D. Next, I am going to pinch a fold of your skin and use these calipers to measure the width. It might smart, but only for an instant.
- E. Gently grasp a fold of skin and subcutaneous adipose tissue with your thumb and index finger about 1 cm above the pencil mark.
- F. While maintaining a grip on the skinfold with your thumb and index finger, place the caliper tips over the fold of skin beneath your fingers. This should be about 1 cm below your fingers, at the level of the pencil mark.
- G. Gently release the handle of the calipers, (still keeping your thumb and index finger in place). Support the caliper in your right hand. **DO NOT RELEASE THE SKINFOLD WITH YOUR LEFT HAND--CONTINUE TO HOLD THE SKINFOLD UNTIL AFTER THE READING IS TAKEN AND YOU HAVE RELEASED THE CALIPER FROM THE ARM.**
- IMPORTANT: BE ALERT TO THE POSSIBILITY OF THE PARTICIPANT MOVING HER ARM SUDDENLY. IF THE CALIPER PRESSURE IS NOT RELEASED QUICKLY, BRUISING OR LACERATION MAY RESULT.**
- H. Approximately 3 seconds after releasing the caliper handles, read the caliper dial. Count to yourself: "one thousand one, one thousand two, one thousand three." Note that the dial will probably continue to move. Look straight down at the dial to avoid parallax from a side view.
- I. Read the caliper dial while it is still on the arm, calling out the measurement to 0.2 mm.
- J. Take two readings. If they are not within 2 cm of each other, take a third.

<p>2. ARM CIRCUMFERENCE AND SKINFOLD</p> <p>A. Arm circumference</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">1st reading</td> <td style="text-align: center;">2nd reading</td> <td style="text-align: center;">Difference between 1 and 2</td> <td style="text-align: center;">Tolerance (0.8 cm.)</td> <td style="text-align: center;">3rd reading</td> </tr> <tr> <td style="text-align: center;">□□.□</td> <td style="text-align: center;">□□.□</td> <td style="text-align: center;">□.□</td> <td></td> <td style="text-align: center;">□□.□</td> </tr> </table>	1st reading	2nd reading	Difference between 1 and 2	Tolerance (0.8 cm.)	3rd reading	□□.□	□□.□	□.□		□□.□	
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<p>B. Circle cuff size and use that cuff for ALL BRACHIAL BP</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Arm Circumference</u></td> <td style="text-align: center;"><u>Cuff</u></td> </tr> <tr> <td style="text-align: center;">< 24 cms</td> <td style="text-align: center;">Child</td> </tr> <tr> <td style="text-align: center;">24 - 32 cms</td> <td style="text-align: center;">Adult</td> </tr> <tr> <td style="text-align: center;">33 - 41 cms</td> <td style="text-align: center;">Lg. arm</td> </tr> <tr> <td style="text-align: center;">> 41 cms</td> <td style="text-align: center;">Thigh</td> </tr> </table>	<u>Arm Circumference</u>	<u>Cuff</u>	< 24 cms	Child	24 - 32 cms	Adult	33 - 41 cms	Lg. arm	> 41 cms	Thigh	
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> 41 cms	Thigh										
<p>C. Skinfold thickness</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">1st reading</td> <td style="text-align: center;">2nd reading</td> <td style="text-align: center;">Difference between 1 and 2</td> <td style="text-align: center;">Tolerance (2 mm.)</td> <td style="text-align: center;">3rd reading</td> </tr> <tr> <td style="text-align: center;">□□.□</td> <td style="text-align: center;">□□.□</td> <td style="text-align: center;">□.□</td> <td></td> <td style="text-align: center;">□□.□</td> </tr> </table>	1st reading	2nd reading	Difference between 1 and 2	Tolerance (2 mm.)	3rd reading	□□.□	□□.□	□.□		□□.□	
1st reading	2nd reading	Difference between 1 and 2	Tolerance (2 mm.)	3rd reading							
□□.□	□□.□	□.□		□□.□							

Comments: _____

3. LUNG EXAMINATION

With the participant seated, auscultate the lungs as follows:

A. Listen to posterior chest by asking the participant:

B. Please breathe in and out through your mouth more deeply than usual.

C. Listen to each side of the chest at the lung base, with the stethoscope, beginning on the right side.

D. Listen to at least one entire breathing cycle at each location.

4. HEART EXAMINATION

With the participant still seated, auscultate by listening at Erb's point (third left interspace close to the sternum) and the right and left base. Note if you hear a systolic or diastolic murmur.

Grading of Heart Murmurs

- | | |
|----------------|--|
| <u>Grade 1</u> | The murmur is not as loud as the heart beat sound. You must concentrate ("tune in") to hear the murmur. |
| <u>Grade 2</u> | The murmur is at least as loud as the heart beat sounds but not clearly louder. |
| <u>Grade 3</u> | The murmur is louder than the heart beat sounds but there is no palpable thrill. |
| <u>Grade 4</u> | The murmur is associated with a palpable thrill. |
| <u>Grade 5</u> | You can hear the murmur even when only one edge of the stethoscope chest piece is touching the skin (and the other edge is not). |
| <u>Grade 6</u> | You can hear the murmur even when the stethoscope chest piece is not touching the chest. |

<p>3. LUNG EXAMINATION</p> <p>(Auscultate posterior portion of each lung)</p> <p>Breath sounds - intensity</p> <p style="text-align: center;"> <u>YES</u> <u>NO</u> </p> <p>Bilateral rales that do not clear with coughing <input type="checkbox"/> 1 <input type="checkbox"/> 2</p> <p>IF YES: Have you had a recent worsening in shortness of breath? <input type="checkbox"/> 1 <input type="checkbox"/> 2</p>	
<p>4. HEART EXAMINATION</p> <p>A. Systolic murmur <input type="checkbox"/></p> <p>B. Diastolic murmur <input type="checkbox"/></p>	<p>0 - None</p> <p>1-6 - Grade</p> <p>8 - Don't know</p>

Comments: _____

5. **HOLTER MONITOR**

A. Have the participant assume a semi-recumbent position on the couch or in an armchair with shoulders straight and arms relaxed at sides.

B. Please remove your arms from your gown, but keep the gown draped over your chest. Please try to avoid movements which could cause errors, but feel free to talk.

C. The patches we have put on your chest are attached to a small camera case size monitor that you can carry with you. [If you can leave the monitor on until tomorrow, we will pick it up at your home.] Please avoid electric blankets, waterbeds, and showering while wearing the recorder. If an electrode or wire comes off, call our office at 410-532-2250 for further instruction. Do not open the recorder once recording has begun.

D. Show the recorder to the participant.

E. The recorder picks up only the ECG signals which it receives via the patient cable attached to your chest. It has no microphone, and therefore cannot record voice or other auditory information.

F. Tape the patient lead cable and its wires to the participant's skin, creating stress loops.

G. Make sure that gain settings for channel 1 and channel 3 are on "Full." Check the cassette label to ensure that the proper information has been recorded. Press the pivot arm release button and the pivot arm will swing out.

H. Insert the cassette.

I. Firmly press the participant cable into the participant cable connector.

J. Re-install battery. This starts the recording of the calibration on the tape. The calibration is vital for later ST segment analysis.

K. Insert the recorder into the carrying case.

L. Fasten remaining strap over the recording and participant cable to immobilize the cable connector.

M. Position the recorder at the participant's side using shoulder strap or her belt.

5.	HOLTER	<u>YES</u>	1	<u>NO</u>	2	REASON HOLTER NOT USED: Software malfunction 1 Hardware malfunction or lack of supplies 2 Participant refused or uncooperative 3 Participant medically excluded by staff for safety 4 Participant unable to physically cooperate 5 Other (Specify) _____ 6 _____ _____
	IF NO, REASON(S).....					

Instructions to Participant for 24-Hour Ambulatory Recording (for first fifty)

- Show the participant how to reconnect a wire when one becomes loose.
- Show the participant how to reattach any loose electrode or tape.
- After the monitor is attached, review the Information Sheet (Exhibit 3-4-12 if applicable) emphasizing:
 - The date and time to be removed.
 - The equipment is entirely safe.
 - The pointers to improve data quality including:

When an electrode pad comes off, tape it back in the same place.

 - When a connector becomes loose, snap it back together.
 - Wear cotton underwear when possible, to minimize static in the recording.
 - Do not get the equipment wet. Sponge baths are fine, but not swimming.
 - Electric blankets and heating pads are safe but should not be used because they cause static on the recording.
 - The plan for return of the Holter Monitor.
- Leave the Information Sheet with the participant.

6. RESTING 12-LEAD ECG

- A. Turn on power to MAC PC. The LCD displays the Main Menu or Standard display.
 - B. Always follow this same order when inserting limb lead cables.
 - 1. Start with the left leg. Prepare the skin with alcohol and gauze and rub the area vigorously about ten times.
 - 2. Peel an electrode from the carrier card and apply to the skin, pressing gently to ensure good adhesion. Parting the hair, if present, during application helps adhesion.
 - 3. Follow the same procedures to apply the right leg electrode.
 - 4. Next, go to the left arm. The inside of the lower arm has thinner skin and is the preferred electrode site.
 - 5. Prepare the skin with alcohol and gauze and rub the area vigorously about ten times.
 - 6. Follow the same procedures to apply the right arm electrode.
 - 7. Attach the lead wires (RA, LA, LL, RL) to the four extremities.
 - 8. Double check that the right side (RA, RL) lead wires are on the participant's right side and the left side (LA, LL) lead wires are on the left and attached to the corresponding extremity.
 - C. Locate positions of the chest electrodes for the Holter Monitor and the ECG.
 - D. After placing the chest leads, re-drape the top of the gown carefully over the participant's chest. Tie the gown securely to maintain modesty.
 - E. After preparing the chest and limb electrodes, place the ECG patient cable distribution block on the participant's lap, being extremely careful NOT TO TANGLE the wires. DO NOT PULL OR JERK THE WIRES.
- F. Now, please relax, breathe normally, and remain still (without talking) while the tracing is recorded. This will not hurt you.
- G. Enter the participant (P) information into the MAC PC.
 - H. Perform the ECG.
 - I. Remove the tracing from the MAC PC.

<p>6. RESTING 12-LEAD ECG (Semi-recumbent)</p> <p>A. Chest square readings</p> <p style="margin-left: 40px;">O-E measurement..... <input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/></p> <p style="margin-left: 40px;">O-V6 measurement..... <input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/></p>																																																			
<p>B. Results of ECG:</p> <p style="margin-left: 40px;">Done..... <input type="checkbox"/> 1</p> <p style="margin-left: 40px;">Incomplete <input type="checkbox"/> 2</p> <p style="margin-left: 40px;">Not done <input type="checkbox"/> 3</p>																																																			
<p>C. Reason ECG incomplete or not done:</p> <p style="margin-left: 40px;">Software malfunction..... <input type="checkbox"/> 1</p> <p style="margin-left: 40px;">Hardware malfunction or lack of supplies..... <input type="checkbox"/> 2</p> <p style="margin-left: 40px;">Participant refused or uncooperative <input type="checkbox"/> 3</p> <p style="margin-left: 40px;">Participant medically excluded by staff for safety..... <input type="checkbox"/> 4</p> <p style="margin-left: 40px;">Participant unable to physically cooperate <input type="checkbox"/> 5</p> <p style="margin-left: 40px;">Other (specify) _____ <input type="checkbox"/> 6</p> <p style="margin-left: 40px;">_____</p>																																																			
<p>D. Were the following alert conditions noted?</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;"><u>YES</u></th> <th style="width: 10%;"></th> <th style="width: 10%; text-align: center;"><u>NO</u></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>1. Atrial fibrillation.....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>2. Atrial flutter</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>3. Wolf-Parkinson White (WPW) or ventricular pre-excitation</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>4. Wide QRS \geq 120 m sec or 3 mm.....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>5. Idioventricular rhythm/complete heart block.....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>6. Ventricular tachycardia or frequent PVC's (3 or more in 30 seconds in the resting rhythm strip).....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>7. Acute pericarditis</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>8. Any reference to acute injury, ischemia or myocardial infarction</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>9. Heart rate at rest (ventricular rate) \leq 45/min or \geq 110/min.....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">1</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		<u>YES</u>		<u>NO</u>		1. Atrial fibrillation.....	<input type="checkbox"/>	1	<input type="checkbox"/>	2	2. Atrial flutter	<input type="checkbox"/>	1	<input type="checkbox"/>	2	3. Wolf-Parkinson White (WPW) or ventricular pre-excitation	<input type="checkbox"/>	1	<input type="checkbox"/>	2	4. Wide QRS \geq 120 m sec or 3 mm.....	<input type="checkbox"/>	1	<input type="checkbox"/>	2	5. Idioventricular rhythm/complete heart block.....	<input type="checkbox"/>	1	<input type="checkbox"/>	2	6. Ventricular tachycardia or frequent PVC's (3 or more in 30 seconds in the resting rhythm strip).....	<input type="checkbox"/>	1	<input type="checkbox"/>	2	7. Acute pericarditis	<input type="checkbox"/>	1	<input type="checkbox"/>	2	8. Any reference to acute injury, ischemia or myocardial infarction	<input type="checkbox"/>	1	<input type="checkbox"/>	2	9. Heart rate at rest (ventricular rate) \leq 45/min or \geq 110/min.....	<input type="checkbox"/>	1	<input type="checkbox"/>	2	<p>IF YES TO D1-D8, DO NOT DO THE SITTING CHAIR STEP TEST</p>
	<u>YES</u>		<u>NO</u>																																																
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Comments: _____

7. KNEE HEIGHT

- A. Have the participant lie semi-recumbent on her back and bend her LEFT knee and ankle, each to a 90° angle. Place the fixed blade of the caliper under the heel of the left foot just below the lateral malleolus of the fibula, so that the shaft of the caliper passes over the lateral malleolus and just posterior to the head of the fibula.
- B. Place the movable blade over the anterior surface of the left thigh, above the condyles of the femur, about 2 inches above the patella.
- C. Hold the shaft of the caliper parallel to the shaft of the tibia and apply pressure to compress tissue. Take two measurements.
- D. Measure knee height on the left leg. If the left leg cannot be measured, use the right leg instead.

8. JOINT EXAMINATION - LOWER EXTREMITY

- A. Observe feet for deformities such as bunions or hammer toes - record any amputated toes.
- B. Press the index finger over the bony prominence of the tibia or medial malleolus (of the ankle) for several seconds. A depression that does not rapidly refill and resume its original contour indicates pitting edema. Check the presence or absent box for the right and left ankle.
- C. Examine knee with participant seated. Knee should be extended with the foot supported by a stool or the examiner's knee and the quadriceps muscle relaxed.
 - 1. Palpate the joint line for tenderness and bony enlargements.
 - 2. Palpate the patella using direct pressure for tenderness.
 - 3. Conduct passive range of motion for each knee. Assess any loss of motion.
 - 4. Check for knee joint manifestations.
- D. Examine hip with the participant seated. Conduct passive range of motion for each hip. Test both internal and external rotation of each hip.
- E. Put socks on participant if her feet are cold.

<p>7. KNEE HEIGHT</p> <p>Left knee <input type="checkbox"/> 1</p> <p>Right knee <input type="checkbox"/> 2</p> <p>Participant cannot bend either knee <input type="checkbox"/> 3</p> <p>Other (SPECIFY) <input type="checkbox"/> 6</p> <p>Participant refused _____ <input type="checkbox"/> 7</p> <p>First reading <input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> cm</p> <p>Second reading <input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> cm</p>																															
<p>8. JOINT EXAMINATION -- LOWER EXTREMITY</p> <div style="text-align: right; border: 1px solid black; padding: 2px; display: inline-block;">No Findings <input type="checkbox"/> 1</div> <p>A. Foot abnormalities</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="2" style="text-align: center;"><u>Right</u></th> <th colspan="2" style="text-align: center;"><u>Left</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>YES</u></th> <th style="text-align: center;"><u>NO</u></th> <th style="text-align: center;"><u>YES</u></th> <th style="text-align: center;"><u>NO</u></th> </tr> </thead> <tbody> <tr> <td>Hammer toes</td> <td style="text-align: center;"><input type="checkbox"/> 1</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> <td style="text-align: center;"><input type="checkbox"/> 1</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> </tr> <tr> <td>Bunions</td> <td style="text-align: center;"><input type="checkbox"/> 1</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> <td style="text-align: center;"><input type="checkbox"/> 1</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> </tr> <tr> <td>Amputated toes</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td></td> <td style="text-align: center;">5 4 3 2 1</td> <td></td> <td style="text-align: center;">1 2 3 4 5</td> <td></td> </tr> </tbody> </table>		<u>Right</u>		<u>Left</u>			<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>	Hammer toes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2	Bunions	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2	Amputated toes	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		5 4 3 2 1		1 2 3 4 5		
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	<input type="checkbox"/>	<input type="checkbox"/>																													

9. **SEMI-RECUMBENT BLOOD PRESSURE**

Participant position

Extinguish all smoking material

Meniscus at level of observer's eye

Mercury columns vertical

Arm supported at heart level

Cuff applied snugly with bottom edge one inch above crease in elbow

Rest right arm on table, palm up

Right sleeve rolled up

Assume relaxed, comfortable position

Sit quietly with legs uncrossed

A. When not already done: Please remove your shoes and stockings so that your ankles are bare to the mid-calf.

B. Remove the sleeve from the right arm.

C. Have the participant remain in the semi-recumbent position with her right side toward you and her feet elevated on a stool. The participant should be in the semi-recumbent position for at least 5 minutes before measuring the blood pressure.

D. Place the blood pressure cuff on the participant's right arm. Use the cuff indicated by the arm circumference measurement.

- Right ankle - standard adult cuff

- Left ankle - standard adult cuff

10. SEMI-RECUMBENT ANKLE ARM BLOOD PRESSURE

- A. Locate the brachial artery and right and left posterior tibial by palpation. Mark each with a wax cosmetic pencil.
- B. Apply the standard adult cuffs to the ankles with the midpoint of the bladder over the posterior tibial artery, with the lower end of the bladder approximately 3 cm above the medial malleolus. Spiral the ankle cuffs.
- C. Apply Doppler gel to the brachial artery of the right and left posterior tibial pulse points.
- D. Connect the sphygmomanometer to the arm cuff at eye level.
- E. Determine the Maximum Inflation Level.
- F. Right arm systolic blood pressure measurement
 - 1. Sit next to the participant's right arm.
 - 2. Attach the right arm cuff tubing to the manometer.
 - 3. Place the Doppler stethoscope in your ears.
 - 4. Locate the right brachial artery using the stethoscope.
 - 5. Measure the systolic blood pressure using the stethoscope.
 - Inflate the cuff quickly to the MIL.
 - Deflate the cuff at 2 mm Hg/second to the appearance of the brachial systolic pressure (the first sound of two consecutive beats)
 - Deflate the cuff quickly and completely
 - Disconnect the right arm cuff from the manometer.
 - 6. Record the right arm systolic blood pressure.
- G. Ankle systolic blood pressure measurement: Move to the participant's feet and place the manometer between her ankles.
 - 1. Connect the right ankle cuff to the manometer.
 - 2. Place the Doppler stethoscope in your ears.
 - 3. Locate the right posterior tibial artery using the stethoscope.
 - 4. Measure the systolic blood pressure using the stethoscope.
 - a. Inflate the cuff quickly to the maximal inflation level
 - b. Deflate at 2 mm Hg/second to the appearance of the right ankle systolic pressure (the first sound of two consecutive beats)
 - c. Deflate the cuff quickly and completely
 - 5. Disconnect right ankle cuff from manometer.
 - 6. Record the right ankle systolic blood pressure.
 - 7. Repeat for left ankle.
 - 8. Wait for 30 seconds.
- H. Repeat of ankle-arm measurements: Repeat the sequence of measures in the reverse order:
 - 1. Left ankle.
 - 2. Right ankle.
 - 3. Right arm.
 - 4. Remove the cuffs and conducting jelly with an alcohol swab and a soft tissue.

10. SEMI-RECUMBENT ANKLE-ARM BLOOD PRESSURE INDEX

E. Systolic readings

(1) First readings:

Right brachial

Right posterior tibial

Left posterior tibial

(2) Second readings:

Left posterior tibial

Right posterior tibial

Right brachial

F. Ankle-Arm BP not done

REASON NOT DONE

REASON NOT DONE:

- Rash/skin sores 1
- Ulcers 2
- Bil. Amputation-legs 3
- Rigid arteries 4
- Other (SPECIFY) 6

Participant refused 7

Comments: _____

G. Reason BP not attempted/completed:

Not attempted, you felt unsafe 1

Not attempted, participant felt unsafe 2

Unable to determine MIL 3

Pulse could not be felt/counted 4

Other (SPECIFY) _____ 6

Participant refused 7

H. Comments: _____

11. STANDS - AIDS MAY NOT BE USED

The participant must be able to stand unaided. You may help her get up.

Now let's move on to a more active part of the exam. I would now like you to try to move your body in different movements. I will first describe and show each movement to you. Then I'd like you to try to do it. If you cannot do a particular movement, or if you feel it would be unsafe to try to do it, tell me and we'll move on to the next one. Let me emphasize that I do not want you to try to do any exercise you feel might be unsafe.

Do you have any questions before we begin?

A. SIDE-BY-SIDE STAND

1. Now I will show you the first movement (DEMONSTRATE).
2. I want you to try to stand with your feet together, side-by-side, for about 10 seconds.
3. You may use your arms, bend your knees, or move your body to maintain your balance, but try not to move your feet. Try to hold this position until I tell you to stop.

4. Stand next to the participant to help her into the side-by-side position. Allow the participant to hold onto your arm(s) to get balance.
5. Supply just enough support to the participant's arm to prevent loss of balance.
6. When the participant has her feet together, ask if she is ready.
7. Say "when you are ready, let go of my arm." Start timing when the participant lets go.
8. Stop the stopwatch and say "stop" after 10 seconds or when the participant steps out of position.
9. If participant unable to hold for 10 seconds, go to test 13.

B. SEMI-TANDEM STAND

1. Now I want you to try to stand with the side of the heel of one foot touching the big toe of the other foot for about 10 seconds. You may put either foot in front, whichever is more comfortable for you.
2. Please watch while I demonstrate.
3. You may use your arms, bend your knees, or move your body to maintain your balance, but try not to move your feet. Try to hold this position until I say stop.

4. If participant unable to hold for 10 seconds, go to test 13.

C. TANDEM STAND (eyes open)

1. Now I want you to try to stand with the heel of one foot in front of and touching the toes of the other foot for about 10 seconds. You may put either foot in front, whichever is more comfortable for you.
2. Please watch while I demonstrate.
3. You may use your arms, bend your knees, or move your body to maintain your balance, but try not to move your feet. Try to hold this position until I say stop.

12. MEASURED WALKS

1. Now we are going to observe how you normally walk. If you use a cane or other walking aid and would feel more comfortable with it, then you may use it.

2. If participant cannot walk, even with an aid such as a cane, walker, or leaning on a wheelchair, code "cannot walk, even with support," and skip to test 13.

A. FIRST USUAL WALK

1. This is our walking course. I want you to walk to the other end of the course at your usual speed, just as if you were walking down the street to go to the store. Walk all the way past the other end of the tape before you stop. I will walk with you. Do you feel this would be safe?

2. Demonstrate the walk for the participant.

3. When I want you to start, I will say: "Ready, begin."

4. Have the participant stand with both feet touching the starting line.

5. WHEN THE PARTICIPANT IS PROPERLY POSITIONED AT STARTING LINE, SAY: "Ready, begin."

6. Press the start/stop button to start the stop watch as the participant begins walking.

7. Walk beside the participant.

8. Press the split button when the participant's toe crosses the 1-meter mark.

9. Stop timing by pressing the start/stop button when the participant's toe crosses the end line.

B. SECOND USUAL WALK

Now I want you to repeat the walk. Remember to walk at your usual pace, and go all the way past the other end of the course.

C. RAPID WALK

Now I want you to repeat the walk. This time I would like you to walk at a RAPID pace as fast as you can, and go all the way past the other end of the course. DEMONSTRATE "Ready? . . . Begin."

<p>12. MEASURED WALKS</p> <p>Four meters..... <input type="checkbox"/> 1 or Three meters..... <input type="checkbox"/> 2 No three meter space available..... <input type="checkbox"/> 3 (GO TO 13)</p> <p>A. Time for <u>first usual pace</u> walk (in seconds)</p> <p>1. Time for first meter..... <input type="text"/> <input type="text"/> . <input type="text"/> 2. Time for 3 or 4 meters <input type="text"/> <input type="text"/> . <input type="text"/> 3. IF NOT ATTEMPTED/COMPLETED <input type="checkbox"/> (GO TO 13)</p> <p>IF ATTEMPTED (SUCCESSFUL OR NOT)</p> <p>4. Aids for first walk:..... <input type="checkbox"/></p>	<p>(IF NOT COMPLETED)</p> <p>Tried but unable 1 Not attempted, you felt unsafe 2 Not attempted, participant felt unsafe 3 Could not walk, even with support 4 Participant unable to understand instructions 5 Other (SPECIFY _____) 6 Participant refused 7</p> <p>(IF ATTEMPTED)</p> <p>No aid.....1 Wheelchair (as walking aid)2 Walker3 Quad cane4 Other cane5 Other walking aid6</p>
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Comments: _____

<p>B. Time for <u>second usual pace</u> walk (in seconds)</p> <p>1. Time for first meter..... <input type="text"/> <input type="text"/> . <input type="text"/> 2. Time for 3 or 4 meters <input type="text"/> <input type="text"/> . <input type="text"/> 3. IF NOT ATTEMPTED/COMPLETED <input type="checkbox"/> <input type="checkbox"/> (13)</p> <p>IF ATTEMPTED (SUCCESSFUL OR NOT)</p> <p>4. Aids for second walk <input type="checkbox"/></p>	<p>(IF NOT ATTEMPTED/COMPLETED) CODE ALL THAT APPLY</p> <p>Tried but unable 1 Not attempted, you felt unsafe 2 Not attempted, participant felt unsafe 3 Could not walk, even with support 4 Participant unable to understand instructions 5 Other (SPECIFY _____) 6 Participant refused 7</p>
<p>C. Time for <u>rapid walk</u> (in seconds)</p> <p>1. Time for first meter..... <input type="text"/> <input type="text"/> . <input type="text"/> 2. Time for 3 or 4 meters <input type="text"/> <input type="text"/> . <input type="text"/> 3. IF NOT ATTEMPTED/COMPLETED <input type="checkbox"/></p> <p>IF ATTEMPTED (SUCCESSFUL OR NOT)</p> <p>4. Aids for rapid walk <input type="checkbox"/></p>	

13. CHAIR STANDS

A. Measure height of chair.

B. If participant in wheelchair, say: Can you get up from your wheelchair by yourself?

C. Do you feel it is safe to try to stand up without using your arms?

D. The next tests measure the strength in your legs. First, please fold your arms across your chest and sit so that your feet are on the floor; (DEMONSTRATE)

If participant cannot rise without using arms, say: "O.K., try to stand up using your arms." Then go to test 15.

14. REPEATED CHAIR STANDS

A. Do you think it is safe for you to try to stand up from a chair five times without using your arms?

B. Take participant's heart rate for 30 seconds.

C. Please stand up straight as quickly as you can five times, without stopping in between. After standing up each time, sit down and then stand up again. Keep your arms folded across your chest. (DEMONSTRATE) I'll be timing you with a stopwatch. Please begin when I say "Ready? . . . Stand."

D. Stop if participant becomes tired or short of breath during repeated chair stands. Go to test 15.

E. When the participant is properly seated, say: "Ready? . . . Stand." and begin timing.

F. Count out loud as she arises each time, up to five.

G. Stop the stopwatch when she has straightened up completely the fifth time and all body movement has ceased.

H. If the participant sits down after the fifth stand-up, stop timing as she begins to sit down.

I. Also stop:

1. If participant uses her arms
2. After 1 minute, if participant has not completed rises
3. At your discretion, if concerned for participant's safety.

J. IF THE PARTICIPANT STOPS AND APPEARS TO BE FATIGUED BEFORE COMPLETING FIVE STANDS, CONFIRM THIS BY ASKING: Can you continue?

K. If she says yes, continue timing. If she says no, stop and reset the stopwatch.

L. Take participant's heart rate for 30 seconds.

13. CHAIR STANDS

- A. Chair height (floor to seat)..... inches
- YES NO NA
- B. Wheelchair 1 2 9
- C. Get up 1 2 (GO TO F)
- D. Safe to stand..... 1 2 (GO TO F)
- E. Results:
- Participant stood without arms..... 1
- Participant used arms to stand..... 2 (GO TO 15)
- Test not completed 3 (GO TO F)
- F. IF NOT COMPLETED/ATTEMPTED:
- Unable to stand 01
- Tried but unable 02
- Not attempted, you felt unsafe 03
- Not attempted, participant felt unsafe 04
- Chair or bed bound 05
- No suitable chair 06
- Other (SPECIFY) _____ 96
- _____ 97
- Participant refused 97
- } (GO TO 15)

14. REPEATED CHAIR STANDS

- YES NO
- A. Safe to stand five times 1 2 (GO TO D)
- B. Heart rate prior.....
- C. (IF FIVE STANDS DONE SUCCESSFULLY, RECORD TIME IN SECONDS.)
- Time to complete five stands seconds (GO TO E)
- (IF LESS THAN FIVE STANDS, RECORD NUMBER OF STANDS .)
- D. IF NO STANDS COMPLETED
- Tried but unable 1
- Not attempted, you felt unsafe 2
- Not attempted, participant felt unsafe 3
- No suitable chair 4
- Participant unable to understand instructions..... 5
- Other (SPECIFY) _____ 6
- _____
- Participant refused 7
- E. Heart rate after

15. GRIP STRENGTH

- A. Conduct examination with the participant in the sitting position with the arm to be tested pressing against her side at a right angle.
- B. Check which hand is being tested first (dominant hand) in the space provided in "d". Check which hand is being tested second (non-dominant) in the space provided in "f."

- C. In this exercise, I am going to use this instrument to test the strength in your hands. Have you had a recent worsening of pain or arthritis in your wrist, or do you have tendonitis?
- D. Have you had any surgery on your hands or arms during the last 3 months?
- E. I'd like you to take the arm that you think is stronger, bend your elbow and press your arm against your side. Now, grab the two pieces of metal together like this (Demonstrate). When I say "squeeze," squeeze as hard as you can. It won't feel like the bar is moving, but we are able to get a reading.
- F. Press Holter Marker and enter time.
- G. I want you to do this three times. If you feel any pain or discomfort, tell me and we will stop.

- H. Repeat the examination three times on the dominant hand, then switch the dynamometer to the non-dominant hand and test the grip strength three times on the non-dominant hand. Set dynamometer to "0" after each test. With each test say, "Squeeze as hard as you can" and when they begin to squeeze say, "Squeeze, squeeze, squeeze."
- I. Press Holter Marker and enter time.

15. GRIP STRENGTH		
A. Have you had a recent worsening of pain or of arthritis in your wrist, or do you have tendonitis?	<u>YES</u> <input type="checkbox"/> 1 (GO TO 16)	<u>NO</u> <input type="checkbox"/> 2
B. Have you had any surgery on your hands or arms during the last 3 months?	<u>YES</u> <input type="checkbox"/> 1 (GO TO 16)	<u>NO</u> <input type="checkbox"/> 2
C. Which hand do you use to sign your name? START WITH DOMINANT HAND.....	<u>Right</u> <input type="checkbox"/> 1	<u>Left</u> <input type="checkbox"/> 2
D. Code hand being tested.....	<u>Right</u> <input type="checkbox"/> 1	<u>Left</u> <input type="checkbox"/> 2
PRESS HOLTER MARKER - ENTER TIME	Time: <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>	am..... <input type="checkbox"/> 1 pm..... <input type="checkbox"/> 2
E. Position of Dynamometer	(1) First try..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg	
	(2) Second try..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg	
	(3) Third try..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg	
(REPEAT FOR OPPOSITE HAND)	<u>Right</u>	<u>Left</u>
F. Code hand being tested.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2
G. Position of Dynamometer	(1) First try..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg	
	(2) Second try..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg	
	(3) Third try..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg	
PRESS HOLTER MARKER - ENTER TIME	Time: <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>	am..... <input type="checkbox"/> 1 pm..... <input type="checkbox"/> 2
H.a. Was grip strength test done?	Yes, at least two per hand..... <input type="checkbox"/> 1	(IF NOT COMPLETED) CODE ALL THAT APPLY Tried but unable 1 Not attempted, you felt unsafe 2 Not attempted, participant felt unsafe ... 3 Participant unable to understand instructions 4 Other (SPECIFY) 6 Participant refused 7
	Yes, at least one per hand..... <input type="checkbox"/> 2	
	Not attempted/completed..... <input type="checkbox"/> 3	
H.b. IF NOT ATTEMPTED/COMPLETED	<input type="checkbox"/>	

16. **PINCH GAUGE**

A. Please put your arm on this (table/arm rest).

B. Bend the participant's elbow to a 90° angle and have the participant press the arm to be tested against her side. The pinch meter should not be resting on anything. This is the position for both pinches.

C. I want you to pinch this meter as hard as you can, using your thumb and index finger, like this.

D. Demonstrate. Then place meter in participant's right hand in the correct position.

E. The correct position is between the pad of her thumb and the lateral surface of the index finger of her right hand.

F. Now, repeat that with your left hand.

G. Again place meter in correct position.

17. **UPPER EXTREMITY STRENGTH - OVERHEAD LIFT**

A. Have you had any surgery on your upper or lower extremity joints, abdomen, or chest in the past 3 months? IF YES, GO TO TEST 18.

B. Next, I want you to sit facing me and lift this jug so that the bottom of it is at your eye level, and then over your head, before lowering it back to touch your lap.

C. Demonstrate.

D. With the participant seated, place the Purdue Pegboard on her lap.

E. Now lift the weight using both hands. Please do not strain or hold your breath to lift the jug. For safety reasons, I need to loosely hold the handle at the top of the jug, but I will not be helping you lift it. Remember to try to lift the jug so that it goes in front of your eyes and then over your head.

<p>16. PINCH GAUGE</p> <p style="text-align: center;"> <u>Right</u> <u>Left</u> </p> <p> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> kg </p> <p> IF NOT ATTEMPTED/COMPLETED <input type="checkbox"/> <input type="checkbox"/> </p> <p style="text-align: center;"> Right Left </p>	<p>(IF NOT COMPLETED/ATTEMPTED)</p> <p>Tried but unable 1</p> <p>Not attempted, you felt unsafe 2</p> <p>Not attempted, participant felt unsafe ... 3</p> <p>Participant unable to understand instructions 4</p> <p>Other (SPECIFY _____) 6</p> <p>Participant refused 7</p>
<p>17. UPPER EXTREMITY STRENGTH</p> <p style="text-align: center;"> <u>YES</u> <u>NO</u> </p> <p>A. Surgery..... <input type="checkbox"/> 1 (GO TO 18) <input type="checkbox"/> 2</p>	
<p>B. Task completion</p> <p>Able to lift over head <input type="checkbox"/> 1</p> <p>Able to lift to eye level <input type="checkbox"/> 2</p> <p>Unable to lift to eye level <input type="checkbox"/> 3</p> <p>Cannot lift jug higher than 1" <input type="checkbox"/> 4</p> <p>Not attempted <input type="checkbox"/> 5</p> <p>IF NOT ATTEMPTED/COMPLETED <input type="checkbox"/></p>	

Comments: _____

18. UPPER EXTREMITIES EXAM

A. WRISTS

1. Observe the right and left wrists for signs of swelling.
2. Gently palpate for tenderness by applying direct pressure on the joint line at the distal radius and ulnar styloid process.
3. Palpate for swelling over the extensor surface and just distal to the ulnar styloid process.
4. Conduct passive range of motion of the right and left wrist by anchoring the forearm with one of your hands, with your other hand holding the participant's hand. Gently bend the participant's hand backward to the limit. Straighten the hand. Then bend the participant's hand forward, closing her fingers to make a fist, to the limit. Open and straighten the hand. Assess any loss of motion and note if the participant complains of pain on passive range of motion.
5. While you examine the wrists, note the presence of radial deviation and carpal subluxation.

B. HANDS - MCP JOINTS

1. Check for tenderness of the MCP joints as a group by performing lateral compression of the hand at the line of the MCP joints. If any joints are tender, confirm by direct palpation over the dorsum of each joint. In addition, directly palpate the MCP 1 joint for tenderness.
2. Ask the participant to close each hand into a fist. When the hand is in a closed fist, inspect the areas between the joints for synovial swelling. Confirm the swelling by palpation over the dorsum of the joint.
3. Conduct passive range of motion for the MCP joints of the right and left hands by anchoring the participant's hand with one of your hands while your other hand gently extends and flexes the MCP joint(s). Assess loss of motion, if any. The normal range of motion for the MCP joints of the second through fifth digits is -30° (hyperextension) to 90° flexion. If the participant complains of pain, identify individual joints.

C. PIP JOINT

1. Check for tenderness of the PIP joints as a group by compressing both sides of the hand at the line of the PIP joints. If any joints are tender, confirm by direct palpation.
2. Inspect participant's hands for evidence of synovial swelling; distinguish between bony enlargement (Bouchard's Nodes) and synovial swelling by palpation. The bony enlargements will be hard, while synovial thickening/or fluid will be spongy.
3. Conduct passive range of motion for the PIP joints of the right and left hands by anchoring the MCP joints with one of your hands, while your other hand gently extends and flexes the PIP joints as a group. The normal range of motion for PIP joints is from 0° to 90° flexion. Assess any loss of motion. If participant complains of pain, identify individual joints.

4. Thumb Interphalangeal Joint

Conduct passive range of motion on the IP joint of each thumb by anchoring the first carpometacarpal joint with one of your hands while the other hand gently extends and flexes the IP joint of one thumb to the limit. Normal range of motion of flexion and extension in the interphalangeal joint of the thumb (first digit) is 35°-90° (Exhibit 3-2-2). Assess any loss of motion and identify if pain is present on passive motion.

D. DIP JOINT

1. Gently palpate the dorso - medial and dorso - lateral aspects of the DIP joints of the right and left hand. Note any tenderness or bony enlargements (i.e., Heberden's nodes). Differentiate bony enlargements from synovial swelling. Bony enlargements will be hard and normally not tender. The synovium will be spongy and sometimes tender.
2. Conduct passive range of motion on each DIP joint of the right and left hand by anchoring the PIP joint of each finger with one of your hands, while the other hand gently extends and flexes the DIP joint to the limit. Assess any loss of motion and identify if pain is present on passive motion.

E. FIRST CARPOMETACARPAL (CMC) JOINT

1. Inspect the first CMC joint for swelling or bony thickening. If either appears to be present, palpate the joint to distinguish between boggy soft tissue swelling or bony thickening and spurs.
2. Abduct the first CMC joint by gently pressing the side of the thumb to the palm of the hand and then abduct the CMC joint by gently raising the thumb from the supinated palm. Identify if pain is present on passive motion.

19. HAND PHOTOS

<p>4. DIP No Findings <input type="checkbox"/> 1</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 20%; text-align: center;"><u>Right</u></th> <th style="width: 20%;"></th> <th style="width: 20%; text-align: center;"><u>Left</u></th> <th style="width: 25%;"></th> </tr> <tr> <td></td> <td style="text-align: center;">5 4 3 2</td> <td></td> <td style="text-align: center;">2 3 4 5</td> <td></td> </tr> </thead> <tbody> <tr> <td>Tender on palpation</td> <td style="text-align: center;"> _ _ _ </td> <td></td> <td style="text-align: center;"> _ _ _ </td> <td></td> </tr> <tr> <td>Pain on passive motion</td> <td style="text-align: center;"> _ _ _ </td> <td></td> <td style="text-align: center;"> _ _ _ </td> <td></td> </tr> <tr> <td>Bony enlargement</td> <td style="text-align: center;"> _ _ _ </td> <td></td> <td style="text-align: center;"> _ _ _ </td> <td></td> </tr> </tbody> </table>		<u>Right</u>		<u>Left</u>			5 4 3 2		2 3 4 5		Tender on palpation	_ _ _		_ _ _		Pain on passive motion	_ _ _		_ _ _		Bony enlargement	_ _ _		_ _ _		<p>0 = No tenderness/pain/ bony enlargement 1 = Tenderness/pain/ bony enlargement</p>
	<u>Right</u>		<u>Left</u>																							
	5 4 3 2		2 3 4 5																							
Tender on palpation	_ _ _		_ _ _																							
Pain on passive motion	_ _ _		_ _ _																							
Bony enlargement	_ _ _		_ _ _																							
<p>5. CMC Joint Manifestations No Findings <input type="checkbox"/> 1</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;"><u>Right</u></th> <th style="width: 20%; text-align: center;"><u>Left</u></th> </tr> </thead> <tbody> <tr> <td>Tender on palpation</td> <td style="text-align: center;"><input type="checkbox"/> 1</td> <td style="text-align: center;"><input type="checkbox"/> 1</td> </tr> <tr> <td>Pain on passive motion</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> </tr> <tr> <td>Bony enlargement or spurs</td> <td style="text-align: center;"><input type="checkbox"/> 3</td> <td style="text-align: center;"><input type="checkbox"/> 3</td> </tr> </tbody> </table>		<u>Right</u>	<u>Left</u>	Tender on palpation	<input type="checkbox"/> 1	<input type="checkbox"/> 1	Pain on passive motion	<input type="checkbox"/> 2	<input type="checkbox"/> 2	Bony enlargement or spurs	<input type="checkbox"/> 3	<input type="checkbox"/> 3														
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<p>19. HAND PHOTOS <u>YES</u> <input type="checkbox"/> 1 <u>NO</u> <input type="checkbox"/> 2 (IF NO, EXPLAIN) _____ _____</p>																										

20. EXTRA-OCULAR MOVEMENTS

Do you wear glasses? IF YES: Please put them on.

Hold your hands as a target in the midline above eye level, about 20 inches (50 cm) away from the participant. Move your hands rapidly downward in the midline, watching for the appearance of white sclera between the iris and the upper lid margin.

21. CONFRONTATIONAL VISUAL FIELDS - STROKE PATIENTS ONLY

- A. Have you had a stroke?
B. Next, please look at my nose and tell me the number of fingers you see on my two hands combined.

- Step 1
- Look at the participant's eyes and hold your hands in the upper outer quadrant bilaterally so that she can easily see both hands.
 - Your hands should be in the "fisted" position, approximately 3 inches above eye level, 12 inches apart, and equidistant between the participant and your eyes.
 - Extend the forefinger and the pointer finger on the right and the forefinger on the left, quickly at the same time. Fingers are extended upward in both upper and lower quadrants.
 - The upper quadrant test is negative (no evidence of left or right visual field deficit/extinction) when the participant indicates that she saw three fingers.
- Step 2
- Remind the participant to look at your nose. Again look at her eyes and hold your hands in the lower outer quadrant bilaterally so that she can easily see both hands.
 - Your hands should be in the "fisted" position, approximately 3 inches below eye level, 12 inches apart, and equidistant between the participant and your eyes.
 - Extend the forefinger on the right and left side quickly at the same time.
 - The lower quadrant test is negative (no evidence of left or right visual field deficit/extinction) when the participant indicates that she saw two fingers.
- Step 3
- If the participant is unable to pass the test (incorrectly identifies the number of raised fingers in the upper or lower quadrant) as outlined in Steps 1 and 2, repeat Steps 1 and 2 twice. Raise your fingers as indicated on the data collection form.
- Step 4
- If there are errors on two of the three tests for the upper or lower quadrant, you must determine whether the problem is extinction or visual field deficit. Do this by retesting the impaired quadrant three times using only unilateral movement. Uniform testing of other visual field areas is necessary in this sequence to prevent the participant from guessing where the stimulus is. Use the sequence:
 - Trial 1: extend the forefinger and pointer in right upper quadrant, and then the forefinger in the left upper quadrant, then the forefinger and pointer in the right lower quadrant, then the forefinger in the left lower quadrant.
 - Trial 2: extend the forefinger and pointer in left upper quadrant, then the forefinger and pointer in the right lower quadrant, then the forefinger in the left lower quadrant, then the forefinger and pointer in the right upper quadrant.
 - Trial 3: extend the forefinger in right lower quadrant, then the forefinger and pointer in the left upper quadrant, then the forefinger and pointer in the left lower quadrant, then the forefinger and pointer in the right upper quadrant.
- Step 5
- If there were errors on Steps 3 or 4, ask: Can you think of any reason you might have had trouble doing this test?

20. EXTRA-OCULAR MOVEMENTS

Glasses YES 1 NO 2

Scoring: Both 1 Right only 2 Left only 3

Yes, full downgaze..... 1 2 3

Partial downgaze 1 2 3

Unable to gaze down 1 2 3

Not performed 1 2 3

REASON NOT PERFORMED

(IF NOT COMPLETED)
CODE ALL THAT APPLY

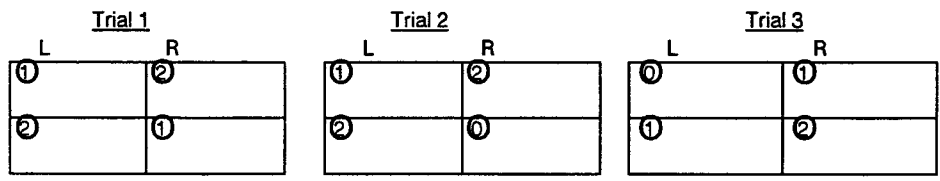
Participant unable to understand instructions 1
Other (SPECIFY) 6
Participant refused 7

21. CONFRONTATIONAL VISUAL FIELDS - STROKE PATIENTS ONLY

Stroke YES 1 NO 2

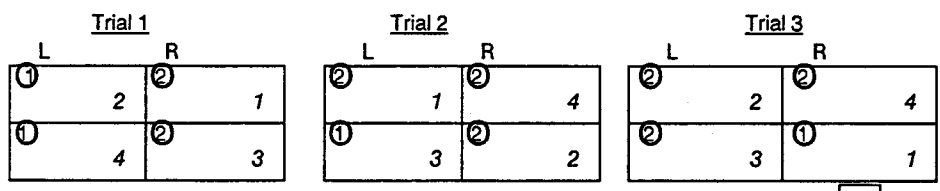
Which side was affected? Right 1 Left 2 Both 3

Extinction



0 - Normal
1 - Abnormal

Visual field deficit



0 - Normal
1 - Abnormal

Participant could not see 1
Participant unable to understand instructions 2
Other (SPECIFY) 6
Participant refused 7

REASON NOT PERFORMED

C. IF PARTICIPANT MAKES ERROR(S): Can you think of any reason you might have had trouble doing this test? YES 1 NO 2

IF YES: Specify

Stroke 1

Glaucoma 2

Cataracts 3

Other (SPECIFY) 6

22. AUDIOMETRY

- A. Before starting, make sure that the lens is centered in the instrument.
- B. Select an area that is relatively quiet and free from distracting conversation, fan noises, etc.
- C. Screen each ear twice, alternating ears; beginning with the left ear.
- D. Select a small, medium, or large AudioSpec ear speculum. Use the largest speculum that can be inserted comfortably into the ear canal, yet still allow visualization of the tympanic membrane. A snug fit assures an acoustic seal of the speculum in the ear canal. Secure the AudioSpec to AudioScope3 by twisting it clockwise onto the instrument.
- E. Turn AudioScope3 "ON" by sliding the selection switch to the 40 dB HL screening level. The white indicator band should completely fill the square next to desired sound level. The green "READY" indicator will light, indicating that the instrument is ready for service.

F. I will be placing this instrument in both of your ears, first the left and then the right. You will hear certain sounds or tones. There will be a maximum of 10 tones that you will hear in each ear. Please raise your hand each time you hear a tone in the ear being tested and put your hand down when the tone stops.

- G. Before examining either ear, note serous, purulent, or sanguineous discharges from the meatus. If any discharge is present in either ear, **do not examine that ear**. If no discharge is present, select the largest speculum that will fit the cartilaginous canal of the participant's ear.
- H. Retract the participant's pinna with the thumb and index finger. Gently pull it slightly up and back. This facilitates insertion of the tip.
- I. Grasp AudioScope3 and gently insert speculum tip into the ear canal. Since the lining epithelium of the bony canal is very sensitive, use gentle manipulation to insert the speculum. The handle may also be held in a horizontal position. Use your little finger to stabilize the instrument with respect to the participant's head.
- J. Position the tip so that the tympanic membrane or a portion of it can be visualized. This visualization ensures free passage of sound. Before attempting visualization, tip the participant's head toward her opposite shoulder to bring the canal horizontal.
- K. Maintain AudioScope3 in the same position and depress the "START" button. The green light will then go out, and tone indicators which show the tone being presented will light sequentially.
- L. Observe each tone indicator and the participant's response. If, for any reason (i.e., participant movement, excessive ambient noises, etc.), the test is disrupted, restart it at any time by depressing the "START" button again. It is important to keep AudioScope3 stationary during the test to prevent generation of noise.
- M. Repeat Steps 7 through 12 on the opposite ear.

22. AUDIOMETRY

A. Cerumen in ears preventing visualization of tympanic membrane

Right..... 1

Left..... 2

B. (1) Air conduction – left ear

Frequency (Hz)	Trial 1		Trial 2	
	YES	NO	YES	NO
1000	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
2000	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
4000	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
500	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2

(2) Air conduction – right ear

Frequency (Hz)	Trial 1		Trial 2	
	YES	NO	YES	NO
1000	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
2000	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
4000	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
500	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2

C. Results of audiometry:

Test done..... 1

Test incomplete 2

Test not done..... 3

D. Reason test incomplete or not done

Tried but unable 1

Not attempted, you felt unsafe 2

Not attempted, participant felt unsafe 3

Participant unable to understand instructions 4

Other (SPECIFY) _____ 6

Participant refused 7

Comments: _____

23. **SPIROMETRY**

- A. Now we will do a test to measure your lung performance.
- B. First, I have some questions about your health. (ASK QUESTIONS ON NEXT PAGE.)

- C. Enter participant information.
- D. Explain and demonstrate the following procedures:
1. Proper placement of the mouthpiece;
 2. Maximal inhalation;
 3. Blasting of air into the tube.

- E. Insert a new spirotube into the mouthpiece.

- F. Please stand up and loosen any tight clothing. (Please also remove any loose dentures or gum.) PLACE A NON-ROLLING CHAIR BEHIND THE PARTICIPANT.
- G. Please extend and elevate your chin. DEMONSTRATE PLACEMENT OF THE NOSECLIP ON THE NOSE.

- H. Have the participant do a trial exhalation.

1. First put this clip on your nose.
2. Take a great big deep breath of air as far as you can inhale.
3. Put the mouthpiece into your mouth and seal your lips tightly around it.
4. Blast your air into the tube as hard and fast as you can.
5. Keep on blowing out the same breath of air until I tell you to stop.

- I. Give the sensor to the participant.
- J. Coach participant.

- K. If participant terminates early, say: Even if you feel empty, small amounts of air are still coming out, so keep pushing and blowing.

- L. Conduct one practice and five trials.

Reproducibility: - 2 FVC'S within 5 percent and
- 2 FEV1'S within 5 percent

Acceptable: Three tests must be free of extrapolated volume errors, obstruction, submaximal effort, coughs, and/or early termination.

23. SPIROMETRY		EXCLUDE FROM SPIROMETRY ANY PERSON WHO HAD RECENT EYE, CHEST, OR ABDOMINAL SURGERY OR A RECENT HEART ATTACK OR DETACHED RETINA ("YES" IN 1, 2, OR 3) OR WHO WAS HOSPITALIZED FOR ANY RESPIRATORY INFECTIONS ("YES" IN 4).
A. Exclusion questions		
1. In the past 6 weeks, have you had any surgery on your chest or abdomen?	YES <input type="checkbox"/> 1 NO <input type="checkbox"/> 2	
2. Have you had a heart attack in the past 6 weeks?	<input type="checkbox"/> 1 <input type="checkbox"/> 2	
3. Have you been hospitalized for any other heart problem (i.e., angina or chest pain, congestive heart failure) in the last 6 weeks?	<input type="checkbox"/> 1 <input type="checkbox"/> 2	
4. Do you have a detached retina or have you had eye surgery within the past 6 weeks?.....	<input type="checkbox"/> 1 <input type="checkbox"/> 2	
5. In the past 3 weeks, have you been hospitalized for any respiratory infections, such as flu, pneumonia, bronchitis, or a severe cold?	<input type="checkbox"/> 1 <input type="checkbox"/> 2	
IF YES TO ANY, SKIP TO TEST 24		
B. Physical capacity: In the past 3 weeks have you had any respiratory infections, such as flu, pneumonia, bronchitis, or a severe cold?		<input type="checkbox"/> 1 <input type="checkbox"/> 2
C. Results of examination. Number of trials		<input type="checkbox"/>
Test completed.		
Participant was sitting	<input type="checkbox"/> 1	
Participant was standing.....	<input type="checkbox"/> 2	
Test not completed/unsatisfactory	<input type="checkbox"/> 3	
Test not attempted.....	<input type="checkbox"/> 4	
D. Reason test not attempted/completed (unsatisfactory):		
Equipment failure	<input type="checkbox"/> 01	
Coughs detected	<input type="checkbox"/> 02	
Early termination of expiration, insufficient effort	<input type="checkbox"/> 03	
Participant unable to understand test instructions	<input type="checkbox"/> 04	
Participant medically excluded by examiner for safety reasons	<input type="checkbox"/> 05	
Participant unable to physically cooperate	<input type="checkbox"/> 06	
Other (SPECIFY) _____	<input type="checkbox"/> 96	

Participant refused	<input type="checkbox"/> 97	

Comments: _____

24. KNEE EXTENSOR MUSCLE TEST

A. General instructions for use of a manual dynamometer:

1. Position participant comfortably.
2. Measure and/or position the instrument carefully.
3. Attain the correct tester body position.
4. Slowly build up resistance to the participant's motion while coaching.
5. Avoid explosive movements.
6. Gently relieve pressure after the limb has begun to give way and before the limb returns to the surface.

B. Knee Extensor Muscle (Quadriceps) Test

1. Always test the right leg first, unless the participant has had a stroke; then test the unaffected side first.
 2. Participant Position - Seat participant in a hard chair. She may place her hands on the front edge of the chair seat but should not lean backwards during the test.
 3. Test the participant's right quadriceps first by placing your hand a few inches above her ankle and lift her foot up (extending the knee) until the knee is almost straight. This establishes the participant's passive range of motion.
 4. Then ask the participant to lift the foot up to the same position and then lower the knee 15° from the floor. This establishes the participant's active range of motion.
 5. Hold the dynamometer with your stronger hand, elbow bent to 90° and pressed in against your abdomen and upper front part of your pelvis for extra support. Your opposite hand may hold onto the wrist of the arm that is holding the dynamometer to give extra strength and stability.
 6. With the knee extended 15° from the floor, place an ABD pad and the dynamometer a few inches above the right ankle, between the medial and lateral malleolus.
7. When I count three, I will begin to push against your leg. Please hold your leg here. Don't let me push it down. When I say "push, push, push," I want you to push against the bar as hard as you can. Don't be afraid to push as hard as you can.
8. Push hard enough to move the subject's leg down.
 9. Apply pressure for 5 seconds, encouraging the participant to push up, while you push down.
 10. Record the trial to the nearest kilogram. Record whether you were able to overcome the participant's resistance by moving the leg down a little.
 11. Record if the participant mentions feeling any pain.
 12. Reset the dynamometer to ZERO for the next trial.
 13. Alternate legs to do two trials on each leg.

24. KNEE EXTENSOR MUSCLE TEST														
A. Trial 1	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px; text-align: center;"><u>Right</u></td> <td style="padding: 5px; border-left: 1px solid black;"></td> <td style="padding: 5px; text-align: center;"><u>Left</u></td> </tr> <tr> <td style="padding: 5px;">Reading.....</td> <td style="padding: 5px; text-align: center;"> <input type="text"/> <input type="text"/> . <input type="text"/> kg </td> <td style="padding: 5px; border-left: 1px solid black;"></td> <td style="padding: 5px; text-align: center;"> <input type="text"/> <input type="text"/> . <input type="text"/> kg </td> </tr> <tr> <td style="padding: 5px;">Participant mentioned pain.....</td> <td style="padding: 5px; text-align: center;"> <input type="checkbox"/> 1 </td> <td style="padding: 5px; border-left: 1px solid black;"></td> <td style="padding: 5px; text-align: center;"> <input type="checkbox"/> 1 </td> </tr> </table>		<u>Right</u>		<u>Left</u>	Reading.....	<input type="text"/> <input type="text"/> . <input type="text"/> kg		<input type="text"/> <input type="text"/> . <input type="text"/> kg	Participant mentioned pain.....	<input type="checkbox"/> 1		<input type="checkbox"/> 1	
	<u>Right</u>		<u>Left</u>											
Reading.....	<input type="text"/> <input type="text"/> . <input type="text"/> kg		<input type="text"/> <input type="text"/> . <input type="text"/> kg											
Participant mentioned pain.....	<input type="checkbox"/> 1		<input type="checkbox"/> 1											
B. Trial 2	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px; text-align: center;"><u>Right</u></td> <td style="padding: 5px; border-left: 1px solid black;"></td> <td style="padding: 5px; text-align: center;"><u>Left</u></td> </tr> <tr> <td style="padding: 5px;">Reading.....</td> <td style="padding: 5px; text-align: center;"> <input type="text"/> <input type="text"/> . <input type="text"/> kg </td> <td style="padding: 5px; border-left: 1px solid black;"></td> <td style="padding: 5px; text-align: center;"> <input type="text"/> <input type="text"/> . <input type="text"/> kg </td> </tr> <tr> <td style="padding: 5px;">Participant mentioned pain.....</td> <td style="padding: 5px; text-align: center;"> <input type="checkbox"/> 1 </td> <td style="padding: 5px; border-left: 1px solid black;"></td> <td style="padding: 5px; text-align: center;"> <input type="checkbox"/> 1 </td> </tr> </table>		<u>Right</u>		<u>Left</u>	Reading.....	<input type="text"/> <input type="text"/> . <input type="text"/> kg		<input type="text"/> <input type="text"/> . <input type="text"/> kg	Participant mentioned pain.....	<input type="checkbox"/> 1		<input type="checkbox"/> 1	
	<u>Right</u>		<u>Left</u>											
Reading.....	<input type="text"/> <input type="text"/> . <input type="text"/> kg		<input type="text"/> <input type="text"/> . <input type="text"/> kg											
Participant mentioned pain.....	<input type="checkbox"/> 1		<input type="checkbox"/> 1											
C. Test not done on right leg	<input type="checkbox"/>	IF NOT DONE: Participant unable to lift foot/knee 1 Not attempted, you felt unsafe 2 Not attempted, participant felt unsafe 3 Other (SPECIFY) 6 _____ Participant refused 7												
D. Test not done on left leg	<input type="checkbox"/>													

Comments: _____

25. HIP FLEXION MUSCLE TEST

Test the iliopsoas muscle first manually and then with the dynamometer.

A. Have you had a hip replacement within the past 3 months?

B. Seat the participant in a hard chair. She may place her hands on the front edge of the chair seat but should not lean backwards during the test.

Participants who have difficulty sitting or who are bed bound should be in the supine position on a bed or couch. The participant's knee should be flexed with the heel resting on the bed.

C. Manual Testing

1. Press Holter Marker and enter time.
2. Always test the right side first, unless the participant has had a stroke; then test the unaffected side first.
3. To test the participant's right iliopsoas, hold your hand 5 inches above her knee and, using your other hand, lift her knee up to your hand. This establishes her passive range of motion.
4. Then ask the participant to lift the knee up into your hand (using leg muscles) and then lower the knee so the foot is again on the floor. Again, hold your hand 5 inches above her knee.
5. Assess if: the participant can lift her knee; cannot lift her knee but you could see or palpate contractions; or the participant cannot lift her knee and you cannot see or palpate contractions.
6. Record the strength: 1, 2 or 3.

D. Dynamometer Testing

1. Always test the right side first, unless the participant has had a stroke; then test the unaffected side first.
2. Hold the dynamometer with your stronger hand, elbow bent to 90° and pressed in against your abdomen and upper front part of your pelvis for extra support. Your opposite hand may hold onto the wrist of the arm that is holding the dynamometer to give extra strength and stability.
3. Place the dynamometer immediately proximal to the femoral condyles at the distal thigh.

4. When the dynamometer is in place, say: "Now I want you to lift your knee to my hand. When I count three I will begin to push against your knee. I want you to hold your knee here, don't let me push it down. When I say "push, push, push," I want you to push against the bar as hard as you can. Don't be afraid to push as hard as you can.

5. Push hard enough to move the participant's knee down.
6. Apply pressure for 5 seconds, encouraging the participant to push up while you push down.
7. Record the trial to the nearest kilogram.
8. Record whether you were able to overcome the participant's resistance by moving the knee down a little.
9. Reset the dynamometer to ZERO for the next trial.
10. Alternate knees to do two trials on each knee.
11. Press Holter Marker and enter time.

25. HIP FLEXION MUSCLE TEST

	<u>YES</u>	<u>NO</u>	
A. Hip replacement	<input type="checkbox"/> 1 (26)	<input type="checkbox"/> 2	
B. Position			
Seated	<input type="checkbox"/>	1	
Supine	<input type="checkbox"/>	2	

PRESS HOLTER MARKER - ENTER TIME

Time: : am.... 1

pm.... 2

C. Manual

	<u>Right</u>	<u>Left</u>
Trial 1	<input type="checkbox"/>	<input type="checkbox"/>
	(1-3)	(1-3)

IF PARTICIPANT CANNOT LIFT KNEE, GO TO TEST 26

- No contraction, cannot lift knee 1
- Contractions, cannot lift knee 2
- Can lift knee 3

D. Dynamometer

	<u>Right</u>			<u>Left</u>	
		<u>Pain</u>		<u>Pain</u>	
Trial 1	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> kg	<input type="checkbox"/> 1		<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> kg	<input type="checkbox"/> 1
Trial 2	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> kg	<input type="checkbox"/> 1		<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> kg	<input type="checkbox"/> 1

E. If test not attempted/completed

<input type="checkbox"/>	<input type="checkbox"/>
Right	Left

(IF NOT ATTEMPTED/COMPLETED)

- Participant unable to lift foot/knee 1
- Not attempted, you felt unsafe 2
- Not attempted, participant felt unsafe 3
- Participant unable to understand instructions 4
- Other (SPECIFY) 6
- Participant refused 7

PRESS HOLTER MARKER - ENTER TIME

Time: : am.... 1

pm.... 2

Comments: _____

26. **SHOULDER ROTATION**

A. Now I'd like you to put both hands behind your neck at the level of your ears. Keep your arms parallel to the floor and point your elbows out to the side.

B. Demonstrate position.

C. The participant performs the test for both sides simultaneously; score her separately for each side. She should sit erect or stand. Face her to score this test.

D. Now I'd like you to move your arms behind your back and touch your fingers together behind your back.

E. Demonstrate position.

F. The participant performs the test for both sides simultaneously; score her separately for each side. She should be sitting erect.

26. SHOULDER ROTATION

A. EXTERNAL

Right shoulder.....

Left shoulder

B. INTERNAL

Right shoulder.....

Left shoulder

- 1 - Fully
- 2 - Partially
- 3 - Unable
- 7 - Refused

Comments: _____

27. SOMATIC SENSORY - FOR STROKE PATIENTS ONLY (Answer to Question 21A is "Yes.")

- A. Now I am going to see how well you can locate one hand with the other. I will be asking you to close your eyes and place this "Thumb target" on your affected thumb. Then I will move the arm into four different positions. After I have moved your arm into the different positions, I will ask you to locate the thumb of your affected hand with the thumb of your non-affected hand. Once your thumb makes contact with your other thumb or the target, stop moving it.
- B. DEMONSTRATE. Do you have any questions?
- C. Which arm was affected by the stroke?

D. Place target on affected thumb.

E. Using the affected arm:

- Position 1
- 1. Randomly move the affected arm. Then flex the affected arm anteriorly to 90°, with the forearm pronated, the elbow flexed to 45°, hand "fisted," and the thumb pointing. Support the arm at the elbow and the wrist.

2. Now try to locate the thumb of your _____ hand with the thumb of your _____ hand.

- 3. Note the distance to the nearest half inch between the affected thumb and the nonaffected thumb on the "Thumb target" when the unaffected thumb first touches the target. If in between, round up (i.e., 2.75 = 3, 2.25 = 2.5, etc.)

- Position 2
- 1. Randomly move the affected arm. Then flex the affected arm anteriorly to 90° with the forearm pronated. The elbow should be slightly flexed, hand "fisted," and the thumb pointing. Support the arm at the elbow and the wrist.

2. Now try to locate the thumb of your _____ hand with the thumb of your _____ hand.

- 3. Note the distance to the nearest half inch between the affected thumb and the nonaffected thumb on the "Thumb target" when the unaffected thumb first touches the target. Round up.

- Position 3
- 1. Randomly move the affected arm. Then flex the affected arm to a 45° angle, with the forearm pronated, the elbow flexed to 45°, the hand "fisted," and the thumb pointing. Support the arm at the elbow and wrist.

2. Now try to locate the thumb of your _____ hand with the thumb of your _____ hand.

- 3. Note the distance to the nearest half inch between the affected thumb and the nonaffected thumb on the "Thumb target" when the unaffected thumb first touches the target. Round up.

- Position 4
- 1. Randomly move the affected arm. Then flex the affected arm to a 45° angle with the forearm pronated, the elbow slightly flexed, the hand "fisted," and the thumb pointing. Support the arm at the elbow and wrist.

2. Now try to locate the thumb of your _____ hand with the thumb of your _____ hand.

- 3. Note the distance to the nearest half inch between the affected thumb and the nonaffected thumb on the "Thumb target" when the unaffected thumb first touches the target. Round up.

27. SOMATIC SENSORY

Yes No

A. Strokes 1 2 (GO TO 28)

B. Upper quadrants

Side 1

Side 2

Flexed R L . inches

R L . inches

Extended R L . inches

R L . inches

C. Lower quadrants

Side 1

Side 2

Flexed R L . inches

R L . inches

Extended R L . inches

R L . inches

D. Task not completed:

Tried but unable 01

Not attempted, you felt unsafe 02

Not attempted, participant felt unsafe 03

Participant unable to understand instructions 04

Pain 05

Contractures 06

Other (SPECIFY) _____ 96

Participant refused 97

Comments: _____

28. PURDUE PEGBOARD

- A. Have the participant seated comfortably at a table approximately 30" high.
- B. Place the Purdue Pegboard directly in front of the participant with the cups at the far end of the board.
- C. The right cup and the left cup should contain approximately 15 pins each.

D. When the participant is ready to begin, say: This is a test to see how quickly and accurately you can work with your hands. Before you begin each part of the test, I will tell you what to do and then you will have an opportunity to practice. Be sure you understand exactly what to do.

E. Right hand. Before each test, demonstrate the required test. Begin by saying and demonstrating: Pick up one pin at a time with your right hand from the right-hand cup. LEAVE THE PIN USED FOR DEMONSTRATION IN THE HOLE. It is not necessary to push the pin all the way down. DURING DEMONSTRATION PURPOSELY DROP PIN. If during the testing time you drop a pin, do not stop to pick it up. Simply continue by picking another pin out of the cup.

F. Now you may insert a few pins for practice.

- G. Correct any errors made in placing the pins, and answer any questions.

H. When the participant has inserted three or four pins and appears to understand the operation, say: Stop. Now take out the practice pins and put them back into the right-hand cup.

I. When I say "Begin," start placing the pins from the right-hand cup into all the holes in the row, starting with the top hole. I want you to fill all the holes. I will be timing you. Work as rapidly as you can. Remember, if you drop a pin, do not stop to pick it up. Pick another pin out of the cup.

- J. Be sure the participant's hand is at the side of the board. Then say "Ready, begin." Start timing when you say "begin." After the participant completes placing the 10 pins from the right cup into the row of holes, stop the stopwatch.

- K. Repeat Steps E through J for the left hand.

28. PURDUE PEGBOARD FORM

Right hand..... Seconds: .

Left hand Seconds: .

Tried but unable 1
Not attempted, you felt unsafe 2
Not attempted, participant felt unsafe 3
Participant unable to understand
instructions 4
Other (SPECIFY) _____ 6

Participant refused 7

Reason not attempted/completed:

Right.....

IF TRIED BUT UNABLE: # OF PINS:

Left.....

IF TRIED BUT UNABLE: # OF PINS:

Comments: _____

29. VIBRATION

- A. Test the right toe. If right toe missing or can't test, test the left toe.
- B. During the testing, the bottom of the right great toe should be centered over the vibrating rod. No other part of the foot or the toes should be touching the rod or its housing.

C. "I'm going to place your right great toe on this rod. (Have participant place toe on rod). The rod is vibrating now and this is the strongest the intensity will be. I will ask you if the rod is vibrating the first or second time. It is up to you to decide which time it is vibrating, either the first or second time. The intensity of the vibration will be decreasing until you can't feel it anymore. Even when you can't feel the vibration anymore I'd like you to guess anyway."

- D. An ideal duration for contact is approximately 2 seconds. You should place your index finger on top of the great toe so you can feel the vibration through the toe. If the participant is pushing down too hard on the vibration rod, you will not feel the vibration.
- E. Start at 22.4 vibration units intensity. This should give you at least eight trials without an error. For each setting ask, "Which trial is vibrating, #1 or #2?" Later, abbreviate to just "#1 or #2?"
- F. If the participant is correct on the first trial, reduce the vibration intensity by approximately 10 percent. (This is indicated on the form vertically.) Continue this procedure until she makes her first error.
- G. When the participant makes her first error, repeat the same intensity level twice, for a total of three trials at that level. For these trials at the same intensity level, follow the 1/2 matrix horizontally on test 29.
- H. Circle the starting intensity, in vibration units, on the left hand column of the examination form. The location of the stimulus (1 or 2 rod) is indicated by the first column in the 1/2 matrix.
- I. If the participant is correct on the first trial at an intensity level, go straight down one row to the next intensity (approximately 10% less) for the next trial. Continue this process until the first error occurs.
- J. When the participant makes her first error, repeat the identical intensity twice, for a total of three trials at that level. For these trials at the same intensity level, follow the 1/2 matrix horizontally.
 - 1. If the trial of the stimulus is correctly identified on two of the three trials, follow the 1/2 matrix down diagonally, from the last 1/2 position tested to the adjacent 1/2 position at the next lower intensity level (below and one to the right).
 - 2. If errors are made on two of the three trials, follow the 1/2 matrix up diagonally from the last 1/2 position tested to the 1/2 position at the next higher intensity level (immediately above and one to the right).
 - 3. If errors are made at two successive settings (1/2 setting) at a given level, the third stimulus is not necessary. Follow the matrix up diagonally at that point.
- K. Repeat all levels below 1.0 units twice, even if the participant selected the correct stimulus position on the first trial.
- L. Testing is completed when the participant has made a total of five errors. A single error often appears early in the testing sequence.

Comments: _____

29. VIBRATION

Toe tested?

Right 1 Left 2

Vibration No. _____

1 valid test 2 invalid test 7 refused 8 unable to test (e.g., toes missing) Specify: _____

Toes cold to touch..... YES 1 NO 2

Vibration intensity CIRCLE IF CORRECT. CROSS OUT IF INCORRECT. STOP AT 5 ERRORS.

22.4	1	1	2	1	1	2	1	2	1	1	1	1	2	1	2	2
22.0	2	1	1	2	1	1	2	2	2	1	1	2	2	1	2	1
20.0	2	2	1	2	1	2	1	1	2	1	2	2	2	2	2	1
18.0	1	1	2	2	2	2	1	1	2	1	2	1	2	1	1	2
16.2	1	2	1	1	2	1	2	1	2	2	1	2	1	2	2	2
14.6	1	2	1	1	2	1	2	1	2	2	2	1	2	1	1	1
13.1	2	2	1	2	2	1	1	2	1	2	1	2	2	2	2	2
11.8	2	2	1	2	1	1	1	2	2	1	2	2	2	2	1	2
10.6	1	2	2	1	1	2	2	2	1	1	1	2	2	1	2	1
9.5	2	2	1	1	2	1	1	2	2	1	2	2	1	2	2	2
8.6	1	1	1	2	2	2	2	1	1	2	2	2	1	2	1	2
7.7	1	1	2	1	1	2	2	1	2	2	2	2	1	1	1	1
6.9	2	2	1	1	2	2	1	1	1	1	2	1	2	1	1	2
6.2	1	2	1	1	1	2	2	2	1	1	1	2	2	1	2	2
5.6	2	2	2	2	2	1	1	1	2	2	2	2	1	1	1	2
5.0	2	2	1	2	2	2	2	1	1	2	1	1	1	1	2	1
4.5	1	1	1	2	1	1	1	2	1	1	1	2	2	2	1	1
4.1	1	1	1	1	1	2	2	1	2	2	2	2	1	1	1	1
3.7	1	1	2	1	1	2	2	1	1	2	2	2	2	1	1	1
3.3	1	1	1	2	2	1	1	2	2	2	2	1	1	2	1	1
3.0	2	2	1	2	1	2	1	2	1	1	2	2	2	2	2	1
2.7	1	1	2	1	2	2	1	1	2	1	2	1	2	1	1	2
2.4	2	1	1	2	1	1	2	2	1	2	1	2	2	1	2	1
2.2	2	2	1	2	1	2	1	2	1	1	2	2	1	2	2	1
2.0	1	1	2	2	2	2	1	1	2	1	2	1	2	1	1	2
1.8	1	2	1	1	2	1	2	1	2	2	1	2	1	2	2	2
1.6	1	2	1	1	2	1	2	1	2	2	2	1	2	1	1	1
1.4	2	1	1	2	1	1	2	2	1	2	1	2	2	1	2	1
1.2	2	2	1	2	1	2	1	2	1	1	2	2	1	2	2	1
1.1	1	1	2	2	2	2	1	1	2	1	2	1	2	1	1	2
0.9	1	2	1	1	2	1	2	1	2	2	1	2	1	2	2	2
0.8	1	2	1	1	2	1	2	1	2	2	2	1	2	1	1	1

5 errors

1 _____

2 _____

3 _____

4 _____

5 _____

5 lowest correct

1 _____

2 _____

3 _____

4 _____

5 _____

Followed directions..... YES 1 NO 2

30. SITTING CHAIR STEP TEST - EXCLUSION CRITERIA

A. Prior to visit, check interview data form for potential exclusions:

- History of aortic stenosis 01
- History of myocardial infarction within last 6 months 02
- History of unstable angina or angina at rest 03
- Severe pain in hip or knee due to osteoarthritis or
rheumatoid arthritis 04

If positive, requeston participant at time of visit.
If no exclusions, calculate the Maximum Predicted Heart Rate

B. At time of visit, assess participant for following exclusions:

- Bedridden 05
- Chairbound 06
- Acute infection (i.e., respiratory, urinary, etc.) 07
- Unstable angina or angina at rest 08

C. At exam, evaluate participant for:

- Loud systolic murmur suggestive of aortic stenosis 09
- Acute congestive heart failure: bilateral rales (more than basilar) 10
- Shortness of breath at rest 11
- Resting diastolic blood pressure > 110 mmHg or resting
systolic blood pressure > 200 mmHg 12
- Severe weakness in one or both legs <4/5 on manual exam 13
- Heart rate is greater than 75% of MPHR 14

D. Evaluate ECG for:

- Atrial fibrillation 15
- Atrial flutter 16
- Wolf-Parkinson White (WPW) or ventricular pre-excitation 17
- Wide QRS \geq 120 m sec or 3 mm 18
- Idioventricular rhythm/complete heart block 19
- Ventricular tachycardia or frequent PVC's (3 or more in
30 sec in the resting rhythm strip) 20
- Acute pericarditis 21
- Any reference to acute injury, ischemia or myocardial infarction..... 22
- Heart rate at rest (ventricular rate) \leq 45/min or \geq 120/min. 23

E. Evaluate rhythm strip for:

- Ventricular arrhythmias: \geq 3 PVC's per 30 seconds
(distinguish from PAC's) 24

IF PARTICIPANT IS EXCLUDED, GO TO CLOSING, PAGE 52.

30. SITTING CHAIR STEP TEST

- A. Participant should be in a hard, straight-backed chair, preferably wooden, and one in which she can touch her feet to the floor. Make sure that chair cannot slide back easily.
- B. Attach the universal test cable to the MAC PC and run a rhythm strip check the "RS" box on the grid "at start." Remove Holter from participant's shoulder and place on floor or hang on chair.
- C. Tape the oximeter finger probe on the left forefinger. If the O₂ saturation is ≤ 80, or heart rate is greater than 75% of predicted maximum, do not do the test.
- D. Record the resting heart rate and the O₂ saturation on the "at start" line on the grid.
- E. Replace the blood pressure cuff on the right arm and take a "quick" right brachial auscultatory blood pressure. Record on the "at start" line of the grid.

F. Next we have a test which will help us understand your level of fitness. This test is considered safe for someone in your situation.

- G. Demonstrate test with 6" step, using the metronome set for one-second beats.

H. Do you see any reason why you could not perform this test?

YES 1 (RECORD REASON AND GO TO CLOSING)

NO 2

IF YES: Reason _____

I. Give the Rating of Perceived Exertion Scale card to the participant.

J. During this exercise test, we want you to pay close attention to how hard you feel the work is. This feeling should reflect your total amount of exertion and fatigue, combining all sensations and feelings of physical stress, effort, and fatigue. In giving me this score, don't concern yourself with any one factor such as leg pain, shortness of breath, or exercise intensity, but try to concentrate on your total inner feeling of exertion. Don't underestimate or overestimate, just be as accurate as you can.

K. What would you say your overall feeling of exertion is right now?

- L. Record in the "RPE" box on the "at start" line.
- M. If you need to stop this test, you may stop. If you have any feelings of chest pain or excessive shortness of breath or fatigue, please tell me.
- O. Set the metronome for one-second beats. Start the metronome.

30. SITTING CHAIR STEP TEST (continued)

B. 75% MPHR: (220 -) X 0.75 =
 age

PRESS HOLTER MARKER Time: : am..... 1
 pm..... 2

	HR	O ₂ %	RS	BP	RPE	Symptoms	
AT START							
Stage 1 (6") (2 min.)							Code all that apply: 1 - SOB 2 - Chest pain 3 - Dizziness 4 - Leg pain 5 - Excessive fatigue
(3 min.)							
Stage 2 (12") (2 min.)							
(3 min.)							
Stage 3 (18") (2 min.)							
(3 min.)							
Stage 4 (18") (2 min.)							
(3 min.)							
Stage 4 (18") (2 min.)							
with arm raised (3 min.)							

AT END POINT:

PRESS HOLTER MARKER Time: : am..... 1
 pm..... 2

Heart rate

O₂%:

Rhythm strip

Blood pressure /

RPE Score

Minutes to normal range

Where did participant stop test?
 During or immediately after:

Stage 1 - 2 min 1

Stage 1 - 3 min 2

Stage 2 - 2 min 3

Stage 2 - 3 min 4

Stage 3 - 2 min 5

Stage 3 - 3 min 6

Stage 4 - 2 min 7

Stage 4 - 3 min 8

REASON(S) STOPPED BEFORE END OF TEST
 (Use codes from below)

Stop the test if:

- 01. participant says she has chest pain, OR
- 02. participant says she is feeling lightheaded or dizzy, OR
- 03. participant says she is (or appears to be) short of breath
- 04. blood pressure is > 200 systolic or > 110 diastolic or < 90 systolic or < 60 diastolic
- 05. O₂ saturation ≤ 80
- 06. heart rate is greater than 75% of predicted maximum
- 07. Borg scale rating is 8 or higher
- 08. participant says she cannot go on
- 09. ECG: PVC's > 3/30 seconds
- 10. ECG: wide QRS (> 3 mm)
- 11. ST↓ @ 2 mm past end of QRS, exceeding 1 mm with respect to PR baseline
- 12. ST↓ present @ rest
- 96. Other (SPECIFY) _____