

Protocol ID: \_\_\_\_\_

Study Name: \_\_\_\_\_

Site: \_\_\_\_\_

Event Name: \_\_\_\_\_

Event Date: \_\_\_\_\_

Study Subject ID: \_\_\_\_\_

Interviewer Name: \_\_\_\_\_

Interview Date: \_\_\_\_\_

## BLSA Knee Strength - Ver 1.0

### Section Title: Eligibility

#### Instructions:

#### Eligibility

Date Completed

☐ Blank

Tester ID

INTRODUCTION and ELIGIBILITY ASSESSMENT: "This machine is a dynamometer (we call it the Biodex, after the manufacturer) and is used to measure strength in various muscle groups. In this session, we will measure the strength of the muscle groups in your upper legs using three sets of tests, that I'll describe as we get to them. Before starting, I will ask you a few questions to make sure it is safe for you to do this test."

#### Examiner Chart Review

1. Does the participant's BP obtained during PE exceed 220/115mmHg?

☐ Yes ☐ No ☐ Don't know Click to deselect entryIf YES, DO NOT TEST

2. From DXA testing, is the bone mineral density T-score of either hip more than four standard deviations below the population mean or less than 0.5 g/cm-squared?

☐ Yes ☐ No ☐ Don't know Click to deselect entryIf YES, DO NOT TEST

#### Questions for Participant

3. Has a doctor ever told you that you had an aneurysm in the brain?

☐ Yes ☐ No ☐ Don't know Click to deselect entryIf YES, DO NOT TEST

4. Has a doctor told you that you had a cerebral hemorrhage in the last 6 months?

☐ Yes ☐ No ☐ Don't know [Click to deselect entry](#)If YES, DO NOT TEST

4a. Have you had any low back pain in the past year that limited your activity for one month?

☐ Yes ☐ No ☐ Don't know [Click to deselect entry](#)If YES, DO NOT TEST

5. Have you had knee surgery on either leg?

☐ Yes ☐ No ☐ Don't know [Click to deselect entry](#)

5a. **If yes**, was the surgery on your right, left or both knees?

☐ Right ☐ Left ☐ Both ☐ Don't know

Type of surgery

5b. Right knee

- ☐ Joint
- ☐ Bone
- ☐ Ligament
- ☐ Meniscus
- ☐ Cartilage
- ☐ Knee cap
- ☐ Tendon
- ☐ Others
- ☐ Don't know

5c. Left knee

- ☐ Joint
- ☐ Bone
- ☐ Ligament
- ☐ Meniscus
- ☐ Cartilage
- ☐ Knee cap
- ☐ Tendon
- ☐ Others
- ☐ Don't know

6. Have you had an injury that made one leg weaker than the other

☐ Yes ☐ No ☐ Don't  
know

Click to deselect  
entry

6a. **If yes**, which leg is stronger

☐ Right ☐ Left ☐ Don't  
know

7. Is it difficult to bend or straighten either of your knees fully due to pain, arthritis, injury or some other condition?

☐ Yes ☐ No ☐ Don't  
know

Click to deselect  
entry

7a. **If yes**, which knee?

☐ Right ☐ Left ☐ Both ☐ Don't  
know

24. Do you have any pain in your knee, when you walk up or down stairs?

☐ Yes ☐ No ☐ Don't know

Click to deselect entry

24a. Which knee

☐ Right  
☐ Left  
☐ Both  
☐ Don't know

24b. How often do you have pain?

☐ Occassionally  
☐ Weekly  
☐ Daily  
☐ Don't know

8. Which leg was tested at the participant's most recent BLSA visit in which Dynamometer testing was performed?

☐ Right  
☐ Left  
☐ Both  
☐ Don't know  
☐ First time

Manual Muscle Test: *Examiner note: With the participant seated on theKin-Com with legs bent, for each leg to be tested, put your hands above the participant's ankle and with your elbows extended and using your body to resist the push, ask the participant press against your hands and try to straighten their leg. (Repeat on other side, unless contraindicated.) Then ask:*

9. *Did you have any pain in your right, left or both knees that stopped you from pushing hard?*

☐ Right test left side only  
☐ Left test right side only  
☐ Both do NOT test  
☐ No test both sides  
☐ Don't know go to Kin-Com exam

9a. Can other side be measured? ☐ Yes ☐ No

9b. Did you have any pain in your knee that stopped you from pushing hard? ☐ Yes ☐ No ☐ Don't know

*Pain*

25. Do you have any pain now? ☐ Yes ☐ No ☐ Don't know [Click to deselect entry](#)

*If Yes, rate the severity of pain you have now.*

Low back pain ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 [Click to deselect entry](#)

Right hip pain ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 [Click to deselect entry](#)

Left hip pain ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 [Click to deselect entry](#)

Right knee pain ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 [Click to deselect entry](#)

Left knee pain ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 [Click to deselect entry](#)

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**Section Title: Right Leg***Instructions:**Right Leg*

Date Completed

Tester ID

*Manual Positioning Settings: Dynamometer settings used previously may be printed below. Please position the dynamometer exactly as before (if information is available). Refer to the operations manual for procedures on determining settings if no previous settings are available or changes are necessary. In this case enter (or overwrite) settings below:*

10a. Seat bottom depth (In)

10b. Lever arm (In)

10c. Limb weight (Nm)

*Concentric/Concentric Test: "For this test you will be moving with the machine, kicking out as hard as you can until the machine stops and then, when I tell you to start, pulling back in as hard as you can with the machine the entire way back to the starting position. You will be doing this action three times for each of two test speeds, one slow and one fast We will start with a few practice tests first."*

11a. Was right leg tested ☐ Yes ☐ No Click to deselect entry11b. Trials attempted at 30 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ Click to deselect entryReason Test Terminated ☐ Requested by Participant ☐ Tester's decision Click to deselect entry

11c. Trials attempted at 180 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

Reason Test Terminated ☐ Requested by Participant ☐ Tester's decision [Click to deselect entry](#)

11d. Reason not done: ☐ Ineligible ☐ Refused ☐ Technical ☐ No Tester ☐ Time ☐ Don't know [Click to deselect entry](#)

**Eccentric/Eccentric Test:** *"For the second test you will be moving against the machine. For the first part of the movement, you will kick towards the chair as the lever arm is moving towards the stop position. Keep kicking back the entire time the arm is moving up. For the second part of the movement, you will be kicking up towards the ceiling while the lever is moving toward the start position. Keep kicking up the entire time the lever arm is moving back to the start position. As in the previous test, you will be doing this action three times for each of the same two test speeds. We'll start with a few practice tests."*

12a. Was right leg tested ☐ Yes ☐ No [Click to deselect entry](#)

12b. Trials attempted at 30 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

12c. Trials attempted at 180 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

12d. Reason not done: ☐ Ineligible ☐ Refused ☐ Technical ☐ No Tester ☐ Time ☐ Don't know [Click to deselect entry](#)

**Isometric Test:** *"For the last test you will be kicking out as hard as you can and holding that position for three seconds each time. The lever arm will be in a fixed positions and will not move. You will be doing this action three times for each of two test angles. There will be NO practice tests."*

13a. Was right leg tested ☐ Yes ☐ No [Click to deselect entry](#)

13b. Trials attempted at 120 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

13c. Trials attempted at 140 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

Reason Test Terminated ☐ Requested by Participant ☐ Tester's decision [Click to deselect entry](#)

13d. Reason not done: ☐ Ineligible ☐ Refused ☐ Technical ☐ No Tester ☐ Time ☐ Don't know [Click to deselect entry](#)

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**Section Title: Left Leg***Instructions:**Left Leg*

Date Completed

Tester ID

***Manual Positioning Settings:*** Dynamometer settings used previously may be printed below. Please position the dynamometer exactly as before (if information is available). Refer to the operations manual for procedures on determining settings if no previous settings are available or changes are necessary. In this case enter (or overwrite) settings below:

20a. Seat bottom depth (In)

20b. Lever arm (In)

20c. Limb weight (Nm)

***Concentric/Concentric Test:*** "For this test you will be moving with the machine, kicking out as hard as you can until the machine stops and then, when I tell you to start, pulling back in as hard as you can with the machine the entire way back to the starting position. You will be doing this action three times for each of two test speeds, one slow and one fast We will start with a few practice tests first."

21a. Was left leg tested ☐ Yes ☐ No Click to deselect entry21b. Trials attempted at 30 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ Click to deselect entryReason Test Terminated ☐ Requested by Participant ☐ Tester's decision Click to deselect entry

21c. Trials attempted at 180 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

Reason Test Terminated ☐ Requested by Participant ☐ Tester's decision [Click to deselect entry](#)

21d. Reason not done: ☐ Ineligible ☐ Refused ☐ Technical ☐ No Tester ☐ Time ☐ Don't know [Click to deselect entry](#)

**Eccentric/Eccentric Test:** *"For the second test you will be moving against the machine. For the first part of the movement, you will kick towards the chair as the lever arm is moving towards the stop position. Keep kicking back the entire time the arm is moving up. For the second part of the movement, you will be kicking up towards the ceiling while the lever is moving toward the start position. Keep kicking up the entire time the lever arm is moving back to the start position. As in the previous test, you will be doing this action three times for each of the same two test speeds. We'll start with a few practice tests."*

22a. Was right leg tested ☐ Yes ☐ No [Click to deselect entry](#)

22b. Trials attempted at 30 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

22c. Trials attempted at 180 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

22d. Reason not done: ☐ Ineligible ☐ Refused ☐ Technical ☐ No Tester ☐ Time ☐ Don't know [Click to deselect entry](#)

**Isometric Test:** *"For the last test you will be kicking out as hard as you can and holding that position for three seconds each time. The lever arm will be in a fixed positions and will not move. You will be doing this action three times for each of two test angles. There will be NO practice tests."*

23a. Was left leg tested ☐ Yes ☐ No [Click to deselect entry](#)

23b. Trials attempted at 120 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

23c. Trials attempted at 140 degrees? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+ [Click to deselect entry](#)

Reason Test Terminated ☐ Requested by Participant ☐ Tester's decision [Click to deselect entry](#)

23d. Reason not done: ☐ Ineligible ☐ Refused ☐ Technical ☐ No Tester ☐ Time ☐ Don't know [Click to deselect entry](#)



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***Section Title: Eligibility****Instructions:*