

**Appendix: Comprehensive High-Level Activity Mobility Predictor (CHAMP)  
Scoring Form**

					<b>Date:</b>	___/___/___					
<b>Name:</b>						<b>Tester:</b>					
<p><b>Instructions:</b> Safety first, no task should be performed if either the participant or tester deem it unsafe. All participants should be tested in a well fitting prosthesis. Do not motivate or give performance tips to the participant. Trial 3 is used only in the case of a disqualification or fall during Trials 1 &amp; 2. Record the “Best Test Time/Points” result between the 2 trials for each test in the conversion column. Use the table below to convert the “Best Test Time/Points” result to the CHAMP Score. The sum of the four CHAMP Scores will provide the Total CHAMP Score.</p>											
<b>Lower Limb Status</b>		<b>Intact</b>		<b>Trans-tibial</b>		<b>Knee disartic</b>		<b>Trans-femoral</b>		<b>Other (specify)</b>	
<b>LeftLimb</b>		<input type="checkbox"/>	<input type="checkbox"/>								
<b>RightLimb</b>		<input type="checkbox"/>	<input type="checkbox"/>								
<b>Item</b>				<b>Trial 1</b>		<b>Trial 2</b>		<b>Trial 3</b>		<b>Conversion</b>	
				<b>Test Time/Points</b>		<b>Test Time/Points</b>		<b>Test Time/Points</b>		<b>Best Test Time/Points</b>	
										<b>CHAMP Score*</b>	
<b>1. Single Limb Stance (seconds)</b> Arms crossed, foot raised a min. 15.2 cm off the floor maintaining single limb stance <b>30 sec. max each limb</b>		L						(Combine the time for Left & Right SLS)			
		R									
<b>2. Edgren Side Step Test (Points)</b> Record the number of points for each one meter interval side-stepped in 10 second. <b>If trial disqualified record 0</b>											
<b>3. T-Test (seconds)</b> Record the time in seconds to complete the course. <b>If trial disqualified record 0</b>											
<b>4. Illinois Agility Test (seconds)</b> Record the time in seconds to complete the course. <b>If trial disqualified record 0</b>											
Comments:								<b>Total CHAMP Score</b>		___/40	

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## Comprehensive High-Level Activity Mobility Predictor Scoring System

	<b>SLS (s)</b>	<b>ESS (m)</b>	<b>T-Test (s)</b>	<b>IAT (s)</b>
<b>Test Score</b>	<b>Time Score Range</b>	<b>Point Score Range</b>	<b>Time Score Range</b>	<b>Time Score Range</b>
<b>0</b>	0	< 5	>124	>65.4
<b>0.5</b>	0.1-3.3			
<b>1</b>	3.4-6.6	5 -7	50.7-123.9	60-65.4
<b>1.5</b>	6.7-10.0			
<b>2</b>	10.1-13.3	8 - 10	45.7-50.6	59.9-54.5
<b>2.5</b>	13.4-16.6			
<b>3</b>	16.7-19.9	11 -13	45.6-40.8	54.4-49.0
<b>3.5</b>	20-23.2			
<b>4</b>	23.3-26.5	14 -16	40.7-36.0	48.9-43.5
<b>4.5</b>	26.6-29.8			
<b>5</b>	29.9-33.1	17-19	35.9-31.1	43.4-38.0
<b>5.5</b>	33.2-36.4			
<b>6</b>	36.5-39.7	20-22	31.0-26.2	37.9-32.5
<b>6.5</b>	39.8-43			
<b>7</b>	43.1-46.3	23-25	26.1-21.3	32.4-27.0
<b>7.5</b>	46.4-49.6			
<b>8</b>	49.7-52.9	26-28	21.2-16.5	26.9-21.5
<b>8.5</b>	53.0-56.2			
<b>9</b>	56.3-59.5	29-31	16.4-11.6	21.4-15.9
<b>10</b>	60	≥32	<11.6	<15.9

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## **CHAMP INSTRUCTIONS**

The CHAMP testing protocol can be administered by one clinician or two clinicians simultaneously. The average time required to administer the CHAMP is less than 15 minutes. The necessary equipment for testing consists of the following: a stopwatch, 2 chairs or a walker, 1 cone with a height of 15.2 cm (6 in), 1 countdown timer, 1 counter, a minimum of 8 or maximum of 18 cones, 1 roll of tape, clipboard, and pen. A minimum space of 13 meters by 10 meters is needed to perform the CHAMP. The following five rules for testers were established in order to maintain the CHAMP's excellent reliability and keep its validity intact: 1) do not motivate or give suggestions to the participant; 2) the tester will read the instructions word for word and provide a walk through demonstration of each of the four items; 3) each participant is given at least 2 trials to complete each of the four items; 4) if the participant is unable to complete the item in two trials because of a disqualification or fall during testing, a third trial is offered ; and 5) no more than 3 trials are to be offered for any of the items.

## **SCORING THE CHAMP**

The CHAMP scoring system produces "CHAMP Scores" with a range from 0 to 10 for each of the 4 items (Appendix 2). The converted "CHAMP Scores" of the 4 CHAMP items are added together to produce a composite or Total CHAMP Score ranging from 0 to 40 with 40 representing the highest level of performance and  $33 \geq$  representing the threshold level of performance equivalent to non-amputee Active Duty Service Members.

The following is a description, scoring procedure, and verbal instructions for each the CHAMP items.

## **SINGLE LIMB STANCE (SLS)**

### **Equipment:**

1 stopwatch; 2 chairs or a walker; and 1 - 15.2 cm (6 in) high cone (box).

### **SLS area layout:**

For safety, two chairs are set on either side of the participant or one walker is set in front of the participant. The participant stands behind a 15.2 cm cone or block in order to see their raised foot is at the proper height (Figure 1).

### **SLS Test Description:**

Standing on flat surface feet comfortably apart.

For optimal balance the stance limb may be adjusted prior to raising the foot off the floor

On the command “Ready”, the participant folds their arms across the chest.

The participant initiates the test when one foot leaves the floor and the stopwatch is started.

The foot must remain 15.2 cm off the floor, once lowered the watch is stopped.

Stand-by assistance for safety is provided by the Tester.

The test position is maintained for a maximum of 30 seconds.

Both lower limbs are tested.

### **SLS Scoring:**

The participant performs one successful trial for each lower limb

A maximum of 3 trials for each lower limb may be attempted.

The time recorded for each trial is recorded to the closest 0.1 seconds for a maximum time of 30 seconds.

The stopwatch starts when the foot comes off the floor.

When 30 seconds with one limb is achieved, no further trials are required for that limb.

If the foot touches the floor, the stationary foot loses contact with the floor (hopping), or a hand touches a chair back or walker, the trial is concluded.

The best SLS time for the left and right lower limbs are added together to produce a “Best Combined Time/Points” and converted to a “CHAMP Score”.

## SINGLE LIMB STANCE VERBAL INSTRUCTIONS

- On the command “Ready”, fold arms across your chest
- When you are ready, lift your foot above the 15 cm cone or box
- If your foot falls below the 15 cm cone or box, you will be asked to raise it
- Time will be stopped if:
  - Your foot touches the floor
  - You do not maintain your foot above the 15 cm cone or box
  - Arms come un-crossed
  - The stationary foot loses contact with the floor (i.e., hopping)
  - You achieve 30 seconds
- You will take a 30 second rest period after each trial

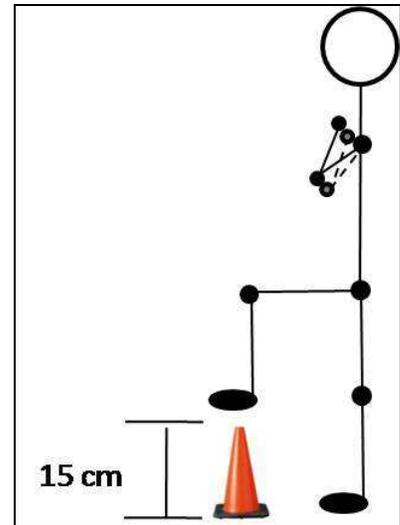


Figure 1: Single Limb Stance

## **EDGREN SIDE STEP TEST (ESST)**

### **Equipment required for administration of the ESST:**

5 cones (or marking tape); 1 countdown timer; 1 counter; and 1 tape measure.

### **ESST area layout:**

The length of the course is 4 meters (13.12 ft), with four intervals separated every one meter by a cone (Figure 2). Intervals are measured from the center of each cone. The Tester is positioned either in front or behind the participant.

### **ESST Test Description:**

The participant begins in a standing position behind the far left cone.

The participant is instructed NOT to cross their feet while sidestepping.

On the command “Go”, by the Tester, the participant sidesteps to the right until their right foot has touched or crossed the outside cone or tape mark.

The participant then sidesteps to the left until his left foot has touched or crossed the left outside cone or tape mark.

The participant sidesteps back and forth to the outside cones as rapidly as possible for 10 seconds.

A 60 second rest period is taken between each trial.

### **ESST Scoring:**

The participant is given one point for each one meter segments passed during the 10 seconds.

If a participant falls, crosses legs or stops, a score of 0 is given.

The best Edgren Side Step Test performance (greatest number of points/meters) is chosen for the “Best Test Time/Points” and converted to a “CHAMP Score”.

## EDGREN SIDE STEP TEST VERBAL INSTRUCTIONS

- The diagram illustrates the path you will complete for this test
- On the command “Ready” you will assume a standing position outside the far left cone
- On the command “Set”, prepare to sidestep
- On the command “Go”, you will sidestep to the right
- Sidestep to the right until your right foot has touched or crossed the right outside tape mark
- Then sidestep to the left until your left foot has touched or crossed the left outside tape mark
- Repeat this procedure as fast as possible in 10 seconds
- Points are awarded based on the number of cones you cross in 10 seconds
- If you fail to reach the outside cones, 1 point will not be awarded
- You will score a 0 and be asked to repeat the test, if:
  - You fail to keep your trunk and feet pointing forward at all times
  - You cross your legs
- You will take a 60 second rest period after each trial

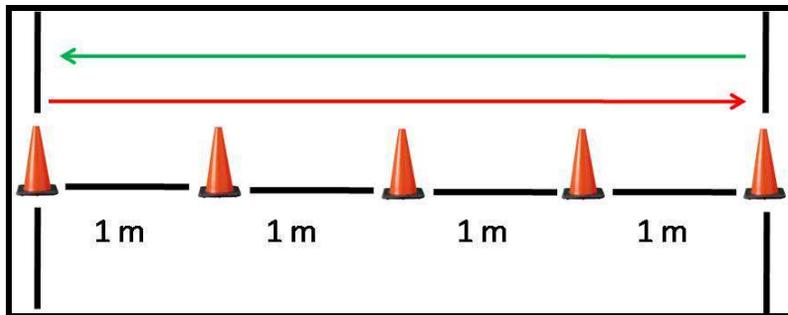


Figure 2: Edgren Side Step Test

## **T-TEST**

### **Equipment required for administration of the T-Test:**

5 cones; a stopwatch; and 1 roll of tape.

### **T-Test area layout:**

The dimension of the T-Test is 10m x 10 m (32.8 ft x 32.8 ft) and designated by 5 cones (Figure 3).

The course layout is as follows: the start and finish line is marked with tape between two cones, the first mark/center cone (cone #1) is set 10 meters from the starting line, and the other two cones (cone #2 & cone #3) are set 5 meters from the center cone forming a “T” shape course.

Intervals are measured from the center of each cone or mark.

Directly behind the finish line, a 3 meter deceleration area is required to avoid deceleration prior to the finish line or prevent injury if a wall is present.

### **T-Test Description:**

The participant stands at the starting line.

On the command “Go”, by the Tester, the participant runs or moves as quickly as possible:

- a) forward to the center cone or mark (cone #1).
- b) sidesteps to the right 5 meters to the right cone or mark (cone #2).
- c) sidesteps to the left 10 meters to the left cone or mark (cone #3).
- d) sidesteps 5 meters back to the center cone or marks (cone #1) and runs or moves as quickly as possible backwards past the finish line.

The Tester starts the stopwatch on “Go” and stops when the participant breaks the plane of the finish line.

The participant is given a 60 second rest period between each trial.

**T-Test Scoring:**

The time is recorded in seconds.

If a participant falls, crosses legs or stops, a score of 0 is given.

The fastest performance is recorded in “Best Test Time/Points” and converted to “CHAMP Score”.

## T-TEST VERBAL INSTRUCTIONS

- The diagram illustrates the path you will complete for this test
- On the command “Ready” you will assume a standing position behind the starting line
- On the command “Set”, prepare to start
- On the command “Go”, you will run or move as quickly as possible forward to the center cone (cone #1)
- Facing forward sidestep right to the right cone without crossing your feet (cone #2)
- One foot must touch or cross the tape mark
- Facing forward sidestep left to the left cone without crossing your feet (cone #3)
- One foot must touch or cross the tape mark
- Facing forward sidestep right back to the center cone without crossing your feet (cone #1)
- One foot must touch or cross the tape mark
- Facing forward run or move as quickly as possible backwards to the finish line
- Your total time of completion of the T-Test will be recorded
- You will score a 0 and be asked to repeat the test, if:
  - You fail to run the course as instructed
  - You fail to reach the end lines
  - You fail to complete the course
  - You move any cones
  - You fail to keep your trunk and feet pointing forward at all times or you cross your legs more than once
- You will take a 60 second rest period after each trial

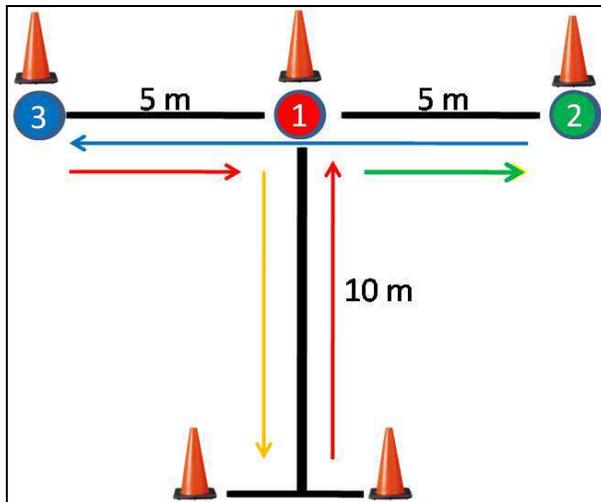


Figure 3: T-Test

## **ILLINOIS AGILITY TEST (IAT)**

### **Equipment required for administration of the IAT:**

8 cones; a stopwatch; and 1 roll of tape.

### **IAT area layout:**

The dimension of the IAT is 10 m x 5 m (32.8ft x 16.4 ft) and designated by 8 cones (Figure 4).

The four center cones are spaced 3.3 meters (10.9 ft) apart.

The four corner cones are positioned 2.5 meters (8.2ft) from the center cones.

Intervals are measured from the center of each cone or mark.

Directly behind the finish line, a 3 meter deceleration area is required to avoid deceleration prior to the finish line or prevent injury if a wall is present.

In the event that the floor is not suitable for lying prone, an optional non-slip carpet or mat may be used.

**IAT Test Description:**The participant will begin the test lying prone on the floor behind the starting line with their arms at their side and their head turned to the side or facing forward.

On the command “Go” the stopwatch is started; the participant rises to their feet and runs or moves as quickly as possible:

- a) forward to the first floor mark 10 meters away and returning 10 meters to the first center cone
- b) weave up and back around the four center cones
- c) forward to the second floor mark 10 meters away and returning 10 meter to the finish line

The Tester starts the stopwatch on “Go” and stops when the participant breaks the plane of the finish line.

The participant takes a 60 second rest period between each trial.

**IAT Scoring:**

If a participant falls, crosses legs or stops, a score of 0 is given.

The fastest performance is recorded in “Best Test Time/Points” and converted to “CHAMP Score”.

## ILLINOIS AGILITY TEST VERBAL INSTRUCTIONS

- The diagram illustrates the path you will complete for this test
- On the command “Ready” lie on your stomach behind the starting line with your arms at your side and your head turned to the side or facing forward.
- On the command “Set”, prepare to start, but you may NOT move your hands from your side
- On the command “Go”, get up and run or move as quickly as possible to the first tape mark
- One foot must touch or cross the tape mark
- Turn around and run or move as quickly as possible back to the first center cone
- Weave up and back through the 4 center cones
- Run or move as quickly as possible to the second tape mark on the far line
- One foot must touch or cross the tape mark
- Turn around and run or move as quickly as possible across the finish cone
- Your total time for completion will be recorded
- You will score a 0, and be asked to repeat the test if:
  - You fail to run the course as instructed
  - You fail to reach the end lines
  - You fail to complete the course
  - You move any cone
- You will take a 60 second rest period after each trial

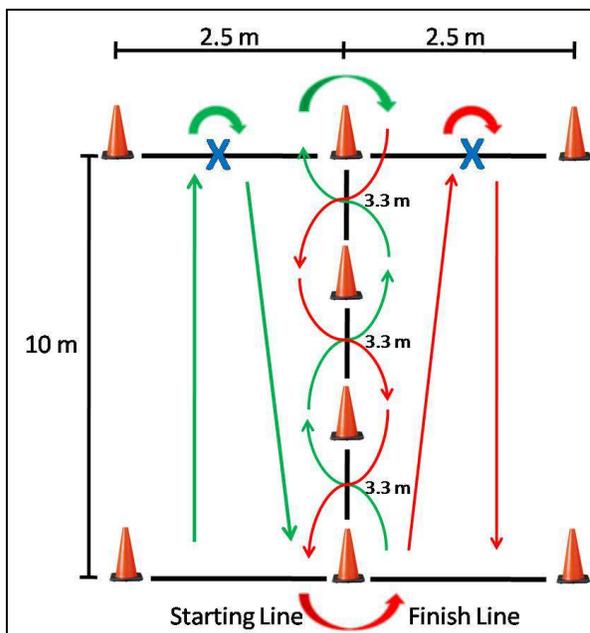


Figure 4:Illinois Agility Test