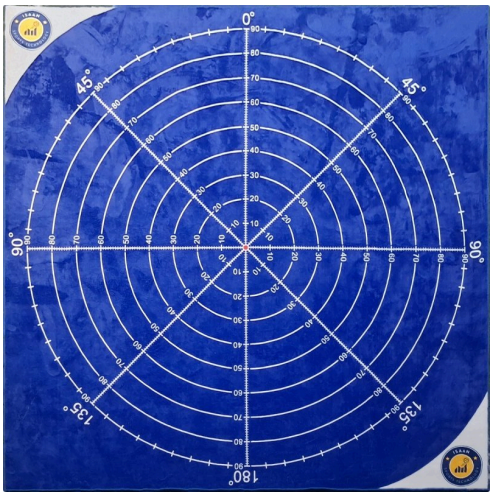
Quick Set-up Guide

Star Excursion Balance Test (SEBT) Mat, Soft Velvet Carpet

ISAAN SPORT TECHNOLOGY



In the box

- 1 SEBT mat, 200 x 200 cm

Specifications

- **Layout:** 8 lines at 45 degree intervals from a centre point, with angle labels
- **Distance scale:** rings every 10 cm out to 90 cm, each line numbered every 10 cm with small marks every 1 cm
- **Surface:** soft velvet carpet, cotton backing, blue overlocked edge
- **Size:** 200 x 200 cm

Suggested Tools

- A cloth tape measure, for leg and arm length
- A pen and the recording sheets at the back of this guide
- Floor tape, for the corners on a smooth floor

Set-up

1. **Choose the space**
   The mat is 200 x 200 cm, so you need a firm, level floor larger than that. Leave clear space around it so a reaching foot or hand does not hit a wall or equipment.

2. **Unroll it and pull it tight**
   Unroll it printed side up. Each time, pull it tight front to back, then side to side, so it is pulled to its full size. This keeps it consistent between tests.

3. **Face the 0° label**
   Set it up the same way round every session, 0° label forward. The athlete always faces the 0° label. Place the mat so the scorer can stand to the side and see each touch point.

4. **Check it does not slide**
   The cotton backing can slide on a smooth floor such as tiles or a sports floor. Push an edge with your foot before testing, and tape the corners to the floor if the mat moves.

5. **Store it rolled**
   Roll the mat loosely with the printed side inside. Do not *fold* it or step on it when it is rolled up, to avoid damaging the carpet. Store it dry.

Additional Notes

- Test barefoot or in socks, the same way each session, so results compare.
- Results on this mat, on tape on the floor and on a Y Balance Test kit are not interchangeable. Retest each athlete on the same set-up.
- Keep the area around the mat clear while someone is testing.
- This is a sport testing tool for coaches and trainers. It does not diagnose injury.

SEBT Quick Usage

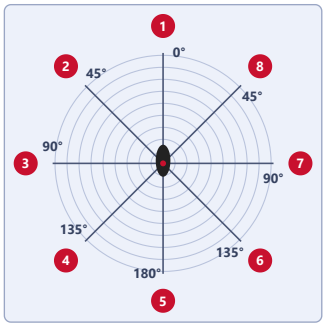
Star Excursion Balance Test, lower body reach

Before you start

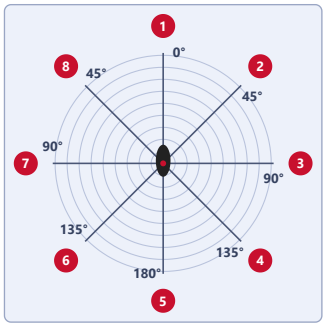
- **Leg length.** With the athlete lying on their back, measure each leg with a cloth tape measure, from the bony point at the front of the hip (anterior superior iliac spine) to the lowest point of the inner ankle bone (medial malleolus).[1]
- **Position.** Barefoot or in socks, hands on hips throughout.[1]
- **Practice.** Give 4 practice reaches in each direction, then 5 minutes' rest before the 3 recorded reaches.[1, 2]
- **Directions.** Use all 8 for the original test, or anterior, posteromedial and posterolateral for the shorter version.[1, 3]

Directions on the mat

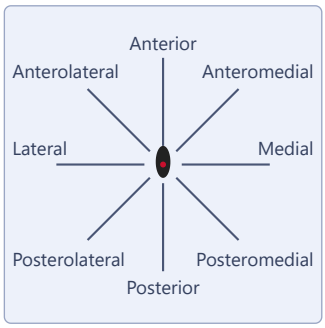
Directions are named from the stance leg, so the same number sits on the other side of the mat when you change legs. Medial is on the side of the reaching leg. Lateral reaches cross behind the stance leg.



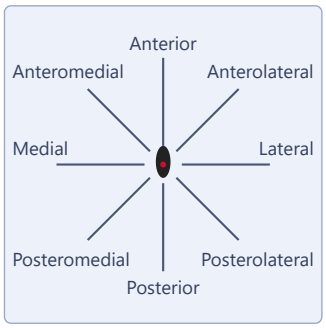
Standing on the left foot



Standing on the right foot



Standing on the left foot



Standing on the right foot

No.	Direction	Mat line
1	Anterior (ANT)	0°
2	Anterolateral (AL)	45°, stance leg side
3	Lateral (L)	90°, stance leg side
4	Posterolateral (PL)	135°, stance leg side
5	Posterior (P)	180°
6	Posteromedial (PM)	135°, reaching leg side
7	Medial (M)	90°, reaching leg side
8	Anteromedial (AM)	45°, reaching leg side

The test

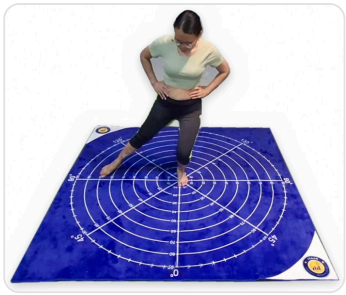
1. **Stand on the centre**
   Stand on the test leg on the red centre point, foot pointing to 0°, hands on hips. In the three direction version (*modified SEBT*), put the toes at the centre for anterior, and the heel at the centre for posteromedial and posterolateral.[1] Use the same foot position every session.

2. **Reach and touch lightly**
   Reach as far as possible along the line with the free leg and touch the line lightly with the furthest part of the foot, without putting weight on it.[1]

3. **Return to the start**
   Bring the foot back and stand on both feet, balanced, before the next reach.[1]

4 **Read the distance**

Read where the foot touched: each line is numbered every 10 cm, with small marks every 1 cm. Record the distance to the nearest centimetre. Watch the touch closely, or ask a second person to read it.



5 **Three reaches, then the other leg**

Record 3 reaches in each direction, then test the other leg. Keep the same order of directions and legs every session.

Repeat the reach if the athlete:[1]

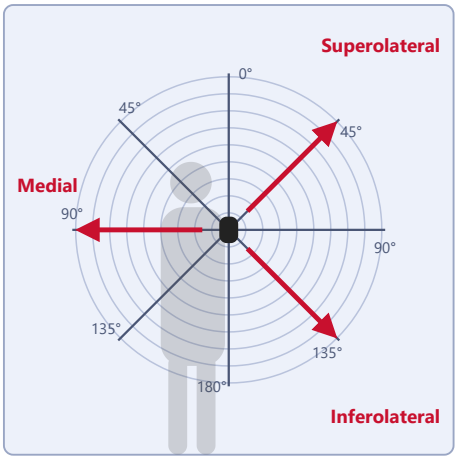
- puts weight on the reaching foot or rests it on the mat
- touches more than once, or slides the foot along the line
- misses the line
- lifts or moves any part of the stance foot, including the heel
- takes the hands off the hips
- loses balance or cannot return to the start

Scoring

- Score each direction as the mean or the best of the 3 recorded reaches. Choose one and use it every time, because the mean is never higher than the best.[1]
- Reach (% of leg length) = reach (cm) ÷ leg length (cm) × 100. For the upper body, use arm length.[1, 6]
- Composite (%) = (ANT + PM + PL) ÷ (3 × leg length) × 100. Upper body: (medial + inferolateral + superolateral) ÷ (3 × arm length) × 100.[4, 6]
- Compare right and left in centimetres. In 235 high school basketball players, those whose right and left anterior reach differed by more than 4 cm were 2.5 times more likely to have a lower limb injury that season.[5]
- Published values only apply to the protocol they came from. Compare an athlete with their other side and their own earlier tests on the same set-up.[7]

Upper Body Reach

Upper Quarter Y Balance Test directions on the mat lines



Support hand: right. Mirror it for the left.

The mat lines also suit an upper body reach in push-up position. The three directions shown to the left follow the Upper Quarter Y Balance Test.[6] Compare an athlete only with their own results on the mat, not with results from a Y Balance Test kit.

Arm length. With the athlete standing, arm straight out to the side at shoulder height, measure from the bony bump at the base of the neck (C7) to the tip of the longest finger.[6]

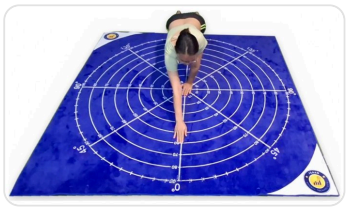
1 **Push-up position**

Place the support hand flat on the mat with the thumb just behind the centre point. Try to keep the body straight like a plank position, and parallel to the 0° to 180° line, head towards 0°, feet no more than about 30 cm apart.[6]



2 **Reach in three directions**

Medial: the 90° line on the body side. **Superolateral:** the 45° line on the outer side of the support hand, towards the head. **Inferolateral:** the 135° line on the outer side, towards the feet. Reach as far as possible, touch the line lightly and return.[6]



3 **Three reaches, then the other hand**

Record 3 reaches in each direction, then change hands. Repeat a reach if the support hand or the feet move, or the reaching hand takes weight on the mat.

References

1. Gribble PA, Kelly SE, Refshauge KM, Hiller CE. Interrater reliability of the star excursion balance test. J Athl Train. 2013;48(5):621-626.
2. Robinson RH, Gribble PA. Support for a reduction in the number of trials needed for the star excursion balance test. Arch Phys Med Rehabil. 2008;89(2):364-370.
3. Hertel J, Braham RA, Hale SA, Olmsted-Kramer LC. Simplifying the star excursion balance test: analyses of subjects with and without chronic ankle instability. J Orthop Sports Phys Ther. 2006;36(3):131-137.
4. Plisky PJ, Gorman PP, Butler RJ, Kiesel KB, Underwood FB, Elkins B. The reliability of an instrumented device for measuring components of the star excursion balance test. N Am J Sports Phys Ther. 2009;4(2):92-99.
5. Plisky PJ, Rauh MJ, Kaminski TW, Underwood FB. Star Excursion Balance Test as a predictor of lower extremity injury in high school basketball players. J Orthop Sports Phys Ther. 2006;36(12):911-919.
6. Westrick RB, Miller JM, Carow SD, Gerber JP. Exploration of the Y-balance test for assessment of upper quarter closed kinetic chain performance. Int J Sports Phys Ther. 2012;7(2):139-147.
7. Gribble PA, Hertel J, Plisky P. Using the Star Excursion Balance Test to assess dynamic postural-control deficits and outcomes in lower extremity injury: a literature and systematic review. J Athl Train. 2012;47(3):339-357.

SEBT Individual Sheet

Name _____ Date _____

Sport and position _____ Tester _____

Leg length R / L (cm) _____ Arm length R / L (cm) _____

Footwear: barefoot / socks _____ Score: mean / best (circle one) _____

Lower body

Direction	Standing on right					Standing on left				
	1	2	3	Score	%	1	2	3	Score	%
1. Anterior (ANT)										
2. Anterolateral (AL)										
3. Lateral (L)										
4. Posterolateral (PL)										
5. Posterior (P)										
6. Posteromedial (PM)										
7. Medial (M)										
8. Anteromedial (AM)										
Composite (ANT, PM, PL)										

Upper body

Direction	Right hand support					Left hand support				
	1	2	3	Score	%	1	2	3	Score	%
Medial										
Inferolateral										
Superolateral										
Composite										

Score = mean or best of reaches 1 to 3. % = score ÷ leg or arm length × 100. Grey boxes are not used.

Notes

SEBT Group Sheet

Team or squad | Date | Tester | Footwear: barefoot / socks | Directions: all 8 / ANT, PM, PL

Name	Leg length		Standing on right								Standing on left								Composite %	
	R	L	ANT	AL	L	PL	P	PM	M	AM	ANT	AL	L	PL	P	PM	M	AM	R	L
1																				
2																				
3																				
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15																				

Directions: ANT = Anterior AL = Anterolateral L = Lateral PL = Posterolateral P = Posterior PM = Posteromedial M = Medial AM = Anteromedial

Write each score (mean or best of 3) in centimetres. Composite = (ANT + PM + PL) ÷ (3 × leg length) × 100, for each leg.