Star Excursion Balance Test

Patient information
Patient's full name:
Examiner's full name:
Test date:

What you need

- A flat surface (2x2 meters)
- Sticky tape
- Measuring tape

| What your patient needs |
| --- |

Comfortable lightweight clothing or fitness clothing.

Instructions

- Make an asterisk using sticky tape. Make sure they are 6 to 8 feet long. All ends of the asterisk should be separated by a 45-degree angle.
- First, have your patient pick one leg to use as their standing leg. This leg will be used to balance themself throughout half of this exercise.
- Tell them to get into standing position in the middle of the asterisk and have them place their hands on their hips.
- Once they are in a standing position, they will use their other leg to reach as far as they can within the range of each direction of the asterisk but without planting their reaching foot on the ground.
- To reach for each direction, they will have to use their big toe. If they're using their left leg as their standing leg, then they will use their right leg to reach. If that's the case, then they will reach for each direction in clockwise order. If they're using their left leg to reach for each direction, they will do this in counterclockwise order.

Standing on LEFT leg
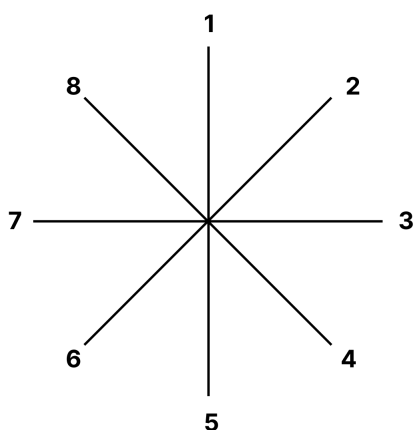
Standing on RIGHT leg
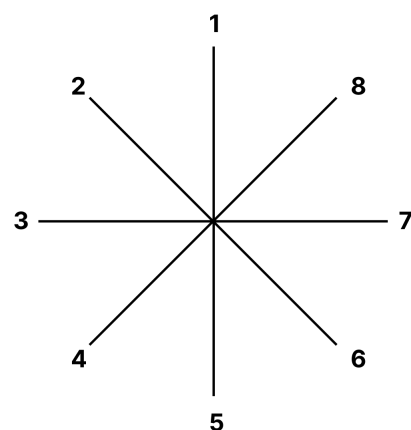
- They will have to repeat this three times per leg. Make sure to give them a practice or trial run first. Then, allow them to rest for five minutes before starting the actual test.

Star Excursion Balance Test scoring

For this test, you need to score the following:

1. Anterior
2. Anteromedial
3. Medial
4. Posteromedial
5. Posterior
6. Posterolateral
7. Lateral
8. Anterolateral

Remember that if the patient uses the right leg to reach, then they will follow this in clockwise order. If they use the left leg to reach, then they will follow this in counterclockwise order.

Equations

Here are the equations you need to follow:

1. **Average distance in each direction (cm)**

(Reach 1 + Reach 2 + Reach 3) ÷ 3 = average distance in each direction (cm)

2. **Relative (normalized) distance in each direction (%)**

(Average distance in each direction ÷ leg length) x 100 = relative (normalized) distance in each direction (%)

Example equation

Here are examples for both (anteromedial):

1. (61cm + 61cm + 61cm) ÷ 3 = 61cm
2. (61cm ÷ 79cm) x 100 = 77.21%

Input your scores below:

1. Average distance in each direction (cm)

Direction	Right leg	Left leg
Anterior		
Anteromedial		
Medial		
Posteromedial		
Posterior		
Posterolateral		
Lateral		
Anterolateral		

2. Relative (normalized) distance in each direction (%)

Direction	Right leg	Left leg
Anterior		
Anteromedial		
Medial		
Posteromedial		
Posterior		
Posterolateral		
Lateral		
Anterolateral		

The patient will fail if:

- If they hold onto something for balance
- If they lose their balance and fall
- They remove their hands from their hips
- If they plant their reaching foot on the ground
- If their standing foot's heel rises or moves at all

Additional notes

Gribble, P. A., Hertel, J., & Plisky, P. (2012). Using the star excursion balance test to assess dynamic postural-control deficits and outcomes in lower extremity injury: A literature and systematic review. *Journal of Athletic Training*, *47*(3), 339–357.

Translating Research Evidence and Knowledge. (n.d.). *Star excursion balance test*. https://exercise.trekeducation.org/assessment/balance-testing/star-excursion-balance-test/

Walker, O. (2025). Star excursion balance test. *Science for Sport*. https://doi.org/10.1111/j.1600-0838.2011.01434