

Laboratory Practical

Assessing Flexibility

Beighton Scoring System

The Beighton Scoring System involves taking the participant through nine basic tests and recording ROM observations using binary notations (0 and 1). If the participant is able to achieve the ROM stipulated in a test within the Beighton Scoring System, then they receive a 1. If they are unable to achieve the ROM, a score of 0 is recorded.

Name:	Date:
Age:	Gender:
Sum of Beighton Scoring test	/9
Excessive ROM throughout the body (>4/9)	Y / N

The Beighton score is calculated as follows:



Score one point if you can bend and place your hands flat on the floor without bending your knees.

Score one point for each knee that will bend backwards.



Score one point for each elbow that will bend backwards.

Score one point for each thumb that will bend backwards to touch the forearm.



Score one point for each hand when you can bend the little finger back beyond 90°.

If you are able to perform all of above manoeuvres then you have a maximum score of 9 points.

Assessing Flexibility

Flexibility, particularly of the lower back and hamstrings was once considered an important component of mechanical lower back pain and musculoskeletal injuries. The sit-and-reach test provides an indirect, linear measurement of range of movement and is frequently included in most health-related fitness test batteries. Several variations of the sit-and-reach test have been developed to measure flexibility in inches or centimetres.

Standard Sit-and-Reach Test

The American College of Sports Medicine (2014) recommend using the standard sit-and-reach test to assess hip and hamstring flexibility. It uses the standard sit-and-reach box with a zero point at 26cm.

- ✓ The client should sit on the floor with their knees extended and the soles of their feet flat against the edge of the box
- ✓ The feet should be 6inches/ 15.2cm apart
- ✓ Whilst keeping their knees fully extended and the arms evenly stretched, instruct the client to reach forward as far as possible along the top of the box.
- ✓ Once the client feels they have reached their maximum reach, instruct them to hold the position for 2 seconds.
- ✓ Repeat the protocol twice and record the reach score to the nearest 0.5cm.

Results

	Age (Years)					
	15-19	20-29	30-39	40-49	50-59	60-69
Men						
Excellent	>39	>40	>38	>35	>35	>33
Very Good	34-38	34-39	33-37	29-34	28-34	25-32
Good	29-33	30-33	28-32	24-28	24-27	20-24
Fair	24-28	25-29	23-27	18-23	16-23	15-19
Requires Improvement	<23	<24	<22	<17	<15	<14
Women						
Excellent	>43	>41	>41	>38	>39	>35
Very Good	38-42	37-40	36-40	34-27	33-38	31-34
Good	34-37	33-36	32-35	30-33	30-32	27-30
Fair	29-33	28-32	27-31	25-29	25-29	23-26
Requires Improvement	<28	<27	<26	<24	<24	<22

ACSM (2014)

The Modified Sit-and-Reach Test

Developed by Hoeger (1989), the modified sit-and-reach test takes in to consideration limb length and the distance between the end of the fingers and the box in a seated posture.

- ✓ The patient is seated on the floor against a wall with the buttocks, shoulders and head in contact with the wall.

- ✓ The sit-and-reach box is placed up against the patients feet.
- ✓ The client reaches forward with one hand over the other, without losing the contact points with the wall. This establishes the 'zero' point for the client.
- ✓ The client is then instructed to reach forward as far as possible and is permitted to leave contact with the wall, but must maintain extended knees.
- ✓ The difference in 'zero' to maximum reach is recorded in inches.
- ✓ Compare your results to those listed below.

Back Saver Sit-and-Reach Test

The back-saver sit-and-reach was developed to relieve some of the neural experienced during the standard and modified tests. It involves measuring flexibility one leg at a time.

The protocol is similar to the standard sit-and-reach with the exception that the non-test leg is allowed to flex though the sole of the foot must remain flat on the floor approximately 7-9cm from the test leg.

This protocol allows you to collect data for the right and left leg and establish asymmetries. discomfort often

Weight bearing lunge test

Test to determine maximum weight bearing dorsiflexion. A tape measure is used as the measure of ROM in this test.

- ✓ Face the wall with one foot in front of the other and hands supporting on the wall.

- ✓ Start with front leg 10cm from wall (measured from great toe) and back leg approximately 30cm from the heel of the front foot to the toes of the back foot
- ✓ Participant bends front knee bringing patella towards the wall and without lifting the heel
- ✓ If not reached, then start closer
- ✓ If easily reached, then work further out
- ✓ Patella should follow the line of the second toe
- ✓ Take the measurement from the tip of the great toe
- ✓ Repeat the test on the contralateral side

Restricted is classed as <9-10cms

Weight Bearing Ankle Goniometer Reading

- ✓ Patient in standing, with goniometer placed on lateral malleolus and the arm of the goniometer down the line of the fibula
- ✓ The knee is taken towards the toes and maximal angle taken
- ✓ Repeat steps 1 & 2 twice more

Ankle Iphone Reading

- ✓ Patient in standing, with goniometer placed on lateral malleolus and the arm of the goniometer down the line of the fibula
- ✓ The knee is taken towards the toes and maximal angle taken
- ✓ Repeat steps 1 & 2 twice more

	Goniometer	IPhone	Wt Br Lunge
Reading 1			
Reading 2			
Reading 3			

Back Scratch Test

Warm-up for the client for the event for approximately 5mins.

- ✓ After the warm-up have the subject raise right arm and reach hand behind head. At the same time, using the opposite hand reach hand behind back and attempt to cross fingers
- ✓ Measure the distance in overlap to the nearest 1.3cm. An overlap would be a positive score, however a gap means a negative score.
- ✓ Repeat the first two steps, two more times.
- ✓ Then proceed to repeat on the opposite hand.

Norms

Sex	Male	Female
Classification	Distance (cm)	Distance (cm)
Excellent	>12.7	>12.7
Above average	5.1-12.2	5.1-12.1
Average	0-4.6	0-4.6
Below Average	-2.5—0.6	-2.5—0.6
Poor	<-2.5	<-2.5

Analysis and Program

How would you communicate the information if a client had a high Beighton score (>4)?

Is stretching appropriate for this individual?

How accurate were the Goniometer and iPhone readings?

Compare your data to the norms provided. What does it show?

How would you present this data to your client?

Based on your results of testing the flexibility of your colleagues, draw together a program aimed at resolving the issues that have arisen from your results.