

CLUB Z

MOBILITY E-BOOK



Ever wonder what the word mobility actually means? It is our ability to MOVE! Maintaining mobility is referred to as our body's ability to move around safely and easily in our day-to-day lives. If we break it down further, our body's mobility is a reflection of how each one of our joints move. If we break this down even further still, the ability of our joints to maintain mobility depends on the joints available range of motion and the flexibility in the surrounding muscles.

As we age, our mobility can change due to a number of factors. Some of these factors include pain, joint stiffness, muscle tightness, and muscle strength. A joint that functions and moves well is one that can move with ease. If a knee is painful, has muscle weakness and tightness or if the joint has stiffened (often due to osteoarthritis), the bending of the joint is often restricted to 110 degrees or less. With this stiffness, everyday activities can be made harder. For instance, a knee needs to bend at least 115 degrees in order to be able to walk down the stairs without limping or favoring the affected leg.

Pain reduces our mobility by reducing our willingness to move. When an activity is painful, it is normal for us to avoid doing that activity. However, this movement avoidance can lead to more muscle stiffness and weakness which ultimately causes reduced mobility. It can be a self-fulfilling prophecy, but it doesn't have to be.





Joint stiffness can be influenced by many factors; commonly previous injury or the onset of osteoarthritis can make it harder for a joint to move. If the joint doesn't move well or often, it is hard for the fluid within the joint to move around and nourish all of the different soft tissues within it. As a result, the health of tissues like joint cartilage, can diminish; this also leads to further joint stiffness.

When a muscle is used to generate movement, the muscle fibers shorten or contract in order to move the bones. As the bones move, other muscles in the area must have enough elasticity or stretch to allow the movement to occur. As we age, the muscle fibers tend to become stiffer (losing some of their water content) and the tendons that attach them to the bones also become more inelastic. These changes in elasticity make it harder for joints to move through their full range of motion because the surrounding muscles restrict their movements.

Muscle strength starts to decline in most adults between the ages of 30 and 40 years old. Without regular work to maintain muscle strength, it is lost at approximately 1-2% per year. Losing muscle strength affects our mobility because it makes it harder to get a full contraction of the muscle and generate movement using our normal movement patterns. Also, as we move into compensated movement patterns, we tend to lose more muscle strength and cause increased pressure on our joints; this cascading impact of muscle strength can reduce our mobility.

Although there are many natural age-associated changes that can negatively impact our mobility, the great news is that most of these factors are modifiable. This means that we can often change how much influence each factor has on our mobility. However, before we can work on optimizing our mobility, we need to understand how to evaluate it.

3 EASY STEPS TO OPTIMIZE YOUR MOBILITY

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1. ASSESS MOBILITY
 2. UNDERSTAND FACTORS AFFECTING YOUR MOBILITY
 3. BUILD A PLAN

ASSESS MOBILITY

There are many different ways that mobility can be assessed. Physiotherapists are an excellent resource for being able to assess both your full body mobility as well as more specific joint mobility problems. Several indicators can be easily evaluated in the clinic:

Gait (walking) Pattern

The ease with which someone walks says a lot about overall mobility. The walking speed and visual steadiness of a walking pattern are key indicators of mobility. The size and evenness of the steps also highlight if there are restrictions in muscle flexibility or joint range of motion.



Joint Movement

Individual joints can be assessed for how easily they move related to the bones (and associated soft tissues) themselves. This is not necessarily an evaluation of muscle length but rather whether or not the bones are able to move freely in the joint as they normally should. Each joint of the mobility has an expected range of motion based on the mechanics of the area. Many joints also have described necessary functional ranges of motion such as the knee joint example in the introduction.

Muscle flexibility

Just like joints, muscles have an expected ability for lengthening. Of course, these expectations may change based on injury or illness but evaluating muscle length provides a good baseline for determining whether or not muscle elasticity is negatively impacting our mobility. Although many of these tests are best performed by a physiotherapist, there is one simple test you can do at home; it is called the Sit and Reach Test.

The Sit and Reach test looks primarily at the combined ability of the lower back and hamstring (back of thigh) to stretch. Sitting perched on the edge of a sturdy chair, one leg is extended straight out in front (straight knee). Inhale, on your exhale reach with both hands as far down towards your toes as you can. Measure the distance between your finger tips and your toes on the outstretched leg. Do this test 3 times and take the average to get a good sense of your lower body mobility. Repeat the test for the other side. Based on your history, you may well find that you have differences side to side. Sometimes your physiotherapist might even be able to give you a comparison of your results with age/sex-matched normative data to get a sense of how you “measure up” to your peers.

AGE & SEX-MATCHED NORMS FOR THE SIT AND REACH TEST

Age	Sex	Below Average	Average	Above Average
60-64	Male	<(2.5) inches	(2.5)-4.0 inches	>4.0 inches
	Female	<(0.5) inches	(0.5)-5.0 inches	>5.0 inches
65-69	Male	<(3.0) inches	(3.0)-3.0 inches	>3.0 inches
	Female	<(0.5) inches	(0.5)-4.5 inches	>4.5 inches
70-74	Male	<(3.5) inches	(3.5)-2.5 inches	>2.5 inches
	Female	<(1.0) inches	(1.0)-4.0 inches	>4.0 inches
75-79	Male	<(4.0) inches	(4.0)-2.0 inches	>2.0 inches
	Female	<(1.5) inches	(1.5)-3.5 inches	>3.5 inches
80-84	Male	<(5.5) inches	(5.5)-1.5 inches	>1.5 inches
	Female	<(2.0) inches	(2.0)-3.0 inches	>3.0 inches
85-89	Male	<(5.5) inches	(5.5)-0.5 inches	>0.5 inches
	Female	<(2.5) inches	(2.5)-2.5 inches	>2.5 inches
90-94	Male	<(0.5) inches	(6.5)-(0.5) inches	>(0.5) inches
	Female	<(4.5) inches	(4.5)-1.0 inches	>1.0 inches





Muscle Strength

Evaluating the strength of the muscles is important to ensure they have adequate strength to move the joints through their full range of motion. For instance, if your hamstring muscles in the back of your thigh are weak, they might not be able to bend your knee as fully as you could if they were stronger. The strength of the muscles also directly influences how well we control the movement of our joints. If we aren't moving with good control, the joints may be unable to move through their full range of motion or we may cause joint pain during movement that will then reduce our willingness to move. Specific muscle strength testing can be done to look at muscles individually; however, it is also important to assess combined movement strength (ie: squatting and step up movements) to determine any impact of muscle strength on position control.

A common test that we complete with our clients to assess their leg strength is the 30-Second Sit to Stand Test. This test can be completed at home! All you need to complete this test is a chair and a timer. Having a second set of hands to control the timer and count your repetitions is ideal however you can do this on your own. First you want to place a chair against the wall to prevent it from slipping. Have a seat with your back straight, feet shoulder width apart and flat on the floor, and cross your arms over your chest.



Practice 1-2 repetitions of a full sit to stand where you fully stand up from the chair and then fully sit down again. The objective of this test is to complete as many full “sit to stands” as possible within 30 seconds. The amount of full repetitions you complete is your score for this test.

AGE & SEX-MATCHED NORMS FOR THE 30 SECOND SIT TO STAND TEST

Age	Sex	Below Average	Average	Above Average
60-64	Male	<17	17	>17
	Female	<15	15	>15
65-69	Male	<16	16	>16
	Female	<15	15	>15
70-74	Male	<15	15	>15
	Female	<14	14	>14
75-79	Male	<14	14	>14
	Female	<13	13	>13
80-84	Male	<13	13	>13
	Female	<12	12	>12
85-89	Male	<11	11	>11
	Female	<11	11	>11
90-94	Male	<9	9	>9
	Female	<9	9	>9

UNDERSTAND FACTORS AFFECTING YOUR MOBILITY

Working with a physiotherapist can be helpful in fully assessing our mobility. Each of us will be impacted differently by our experience of pain, medical conditions, past injury and our physical activity habits.

At Club Z, we have devised a standardized assessment that is used by our Recognized Assessment Sites to evaluate your strength, balance and mobility. This individualized evaluation can determine which factors are holding back your mobility from being at its best.

Once we have identified the primary barriers to optimizing mobility, we can start to devise a plan to address as many of them as possible. There are added benefits of addressing multiple factors. We can have a greater impact on improving our mobility than if we only addressed the most obvious issue.

BUILDING A PLAN

Creating a plan that addresses the barriers that are most relevant to each of us is more valuable than taking a “one size fits all” approach. That is why at Club Z, we rely on the interactive nature of our live online classes to be able to provide “real-time” adaptations and modifications for our members while they exercise.



Members who have completed a standardized assessment, have an increased understanding of their specific restrictions and are able to select their classes and exercises based on what is likely to serve them best in optimizing their overall mobility and health.

When specific limitations have been identified (such as muscle weakness, muscle tightness, and joint restriction), Club Z members can focus specifically on those areas to achieve their goals faster, safer and more comfortably.

Additionally, by incorporating the improving movement of these “trouble spots” into functional exercises, Club Z members see great cross-over between improvements in how they feel in exercise class to how they feel as they move through their everyday activities. Many members find they are much better able to walk up and down the stairs, keep up with their grandchildren and even put their socks on; the ground suddenly doesn’t seem so far away!

WHAT’S NEXT?

Hopefully, by now, you agree that optimizing mobility is a key factor in being able to continue to enjoy all the activities we love. Our bodies are built for movement and motion is lotion for our joints. When we have better mobility we tend to move more. When we move more, we tend to have more confidence in our movement. When we have more confidence in our movement, we use our whole body more efficiently and move more comfortably and safely.



Sir Isaac Newton's first law of motion is:

**“A body at motion stays in motion;
a body at rest stays at rest.”**

What are you doing to stay in motion?

To get started on your mobility journey, book your free consultation with Laura today by calling 902-453-1525 or book online at <https://bit.ly/BookWithLaura>.

