

NATIONAL MULTIPLE SCLEROSIS SOCIETY
MS LEARN ONLINE INTERNET PROGRAM
PHYSICAL FITNESS FROM HOME
EXERCISE PROGRAM FOR PEOPLE WITH FULL MOBILITY

>>Welcome, and thank you for joining the National Multiple Sclerosis Society's MS Learn Online Internet program. I am Rick Turner, your host and medical correspondent.

In addition to being essential to general health and well being, exercise is helpful in managing many MS symptoms. A study published by researchers at the University of Utah in 1996 clearly demonstrated the benefits of exercise for people with MS. Those patient's who participated in an aerobic exercise program had better cardiovascular fitness, improved strength, better bladder and bowel function, less fatigue and depression, a more positive attitude and increased their participation in social activities. With that knowledge, MS Learn Online is happy to bring you a second web cast on Physical Fitness from Home. Our last web case focused on exercise options for people with progressed MS. Today we will focus on exercise for people with full mobility.

Joining us once again is Dr. Susan Bennett. Dr. Bennett. Welcome to the program Dr. Bennett.

>>**Dr. Bennett:** Thank you Rick:

>>**Rick Turner:** Dr. Bennett holds clinical appointments in the Departments of Neurology and Rehabilitation Science at the University at Buffalo, State University of New York, where she also serves as Director of the MS Comprehensive Care Center within the Jacobs Neurologic Institute.

Dr. Bennett, for someone with MS and full mobility, are there specific exercises that you recommend.

>>**Dr. Bennett:** Key things that we sometimes forget about with individuals that may be more mildly affected by MS is that they may be experiencing silent symptoms. So to look at the individual walking or carrying out their daily activity which may be working full time and such, we may not know that they are experiencing fatigue. They may be having some diminished muscle endurance. Sometimes the individual has difficulty more from a cognitive or memory perspective carrying out a couple of different tasks. We live in such a multi-task society now. That can be challenging, or there is a little imbalance or unsteadiness, and when individuals are walking and there are a lot of people walking around,

they can feel a little bit more off balance. So these silent symptoms are things that we should be a little bit more sensitive to and recognize that there is a role for exercise in helping to address these symptoms.

>>**Rick Turner:** Okay. How can they be addressed?

>>**Dr. Bennett:** The problem that I would really like our audience to think about is this issue of fatigue. To fight fatigue we know that it should be a combination of aerobic exercise, as we heard from the University of Utah study, as well as some weight lifting. Eighty to ninety-seven percent of people with MS report some level of fatigue which can lead to employment status, meaning having to retire early, or changes in their life roles. Fatigue in itself is described as an overwhelming sense of tiredness, lack of energy or feeling of exhaustion. In fatigue we know that there are two different types. This general lassitude which has been described as generalized feeling of exhaustion or persistent state of tiredness, and then motor fatigability. It is important to point these two out, Rick, because the motor fatigability is what occurs to muscles when we go through repeated contractions. That is where we know exercise can have a very positive effect. We think that exercise can also have an improvement in lassitude, but we do not have the research to demonstrate that yet. We know that fatigue also can limit the ability of an individual with MS to exercise. They may just say I am just too tired. I do not want to do my exercise today. But we also know the value of the exercise. So again we would encourage individuals that that old phenomenon or I should say that old standard, use it or lose it.

>>**Rick Turner:** It sounds like an important part of an exercise program is really pacing yourself.

>>**Dr. Bennett:** Absolutely, and if you think about sometimes when you may get up in the morning, if your exercise routine is to ride the stationary bike in the morning, say oh, I am just too tired, if you just go get it done and you do at least five minutes by the time that five minutes is over you are saying wow I feel better. You can actually get energized with exercise. We do suggest for more aerobic or weight training exercise that individuals do get clearance from their physician prior to starting an exercise program, especially if they are going to do something that is a little more aerobically focused.

In this category now with individuals that are fully mobile, we certainly would recommend starting with anywhere between five to ten repetitions. They can do two sets of each exercise. Just a 20- or 30-second rest in between sets. Again we would advocate starting with a maximum of four to five exercises, ease into the

exercise. Let your body start to become conditioned to the exercise, and again as we talked about in the previous web cast, do all exercise movements slowly.

>>**Rick Turner:** It sounds like you can have a little more ambitious start if you have full mobility.

>>**Dr. Bennett:** Absolutely. We usually are coming in with a little bit better cardiovascular fitness. We do not have to worry so much about some pulmonary or lung problems, so this individual we can push a little bit more.

I have a series of photographs again, Rick, that the viewers can look at to get some ideas of exercises that they could do at home to get those muscles up and pumping and get those joints moving and start to work on strength as well as endurance training.

>>**Rick Turner:** Okay.

>>**Dr. Bennett:** The first one we see here is our friend Drew again doing that sit-to-stand exercise. It is a simple task, and people do not think anything about it because you think I get out of the chair all day long, so why would I have to do this exercise. I can guarantee you if you sit in a chair and get up and down 10 times you are going to feel it in your thigh muscles. So it is that repetition of the exercise or the movement that starts to train the body. In this case Drew is showing that he is not using his hands at all. His hands were in front of his body as he starts to get up out of the chair which makes those leg muscles do all the work.



The next photograph shows Drew doing a squat. In this position we do have his hands lightly on the counter just to help with balance. He tries to keep his back as straight as he can, and then he actually starts to move into a sit-down posture or a squat or knee bend. As he does this we again encourage keeping those abdominal muscles tight and do not go too deep. We usually suggest people go about a third of the way down and then slowing start to come back up into a standing posture. Again we can do this one 10 repetitions, two sets, usually without any difficulty. Individuals will, again, feel that sensation in those thigh muscles.

The next photograph shows Drew marching in place. This is a real important exercise because these are the muscles that frequently become weak. This could be a silent symptom, one of those muscle fatigue, muscle endurance problems. The muscle that actually bends the hip joint in order to help pull the foot up off the floor as we are walking. Somebody who is fully mobile is doing fine walking through the course of the day, but all of a sudden they are starting to get that muscle fatigue at the end of the day. They may find that they are not picking up their foot as well, their foot is not clearing. They are at risk of catching their toe as they are trying to step and cause potentially a fall. So working on endurance training of this hip muscle is very important, and Drew is simply alternating each knee up and down towards the kitchen counter, so he is really getting good contraction of that muscle, and do it 10 to 20 repetitions, two sets of that, getting to 20 repetitions to start.



Now we see Van doing what is called a hamstring curl. We know the importance of stretching the hamstring muscle, but we also want to strengthen it. You see Van standing at the counter, hands lightly on the counter for support, and his back is nice and straight, and the exercise is simply draw the heel up towards the buttock which gets the hamstring muscle located in the back part of the thigh activated. If

you can tighten your abdominal muscles during this exercise as well then in addition to getting hamstring activation you are also starting to strengthen the muscles in your back and in your abdominal area which area very important to promote healthy posture.

The next photograph shows Van doing an activity we call abduction, so the leg is coming out towards the side of the body and then back down. He can do 10 repetitions on his right leg and then stand on his right leg and do 10 repetitions on the left leg. It is important here that the toes stay pointed forward towards the counter. That makes sure that we really activate the muscle we want. There is a tendency that the toes start to turn out, and we are using a different muscle then, so that would be a word of caution on this one.



I should add as well, Rick, that these exercises we are looking at right now, the marching one as well as this abduction, they could all be made a little bit more difficult, more challenging for the muscles by adding light weights to the ankle.

This is one of my favorite exercises, repeated step ups. This is great for aerobics as well as strengthening the muscles that pick the leg up and strengthening the muscles that hold us upright as we are stepping forward. So it is a dual purpose exercise. It is great aerobically, it is great strengthening wise. Individual is only stepping up and down the bottom step so you are not at the top of the stairs. You do this at the bottom step. You step up on to the bottom step, bring both feet up, and then you step back down. You can do this one leading 10 times with your right leg and then lead 10 times with your left. If you really want to make it challenging, alternating the legs. Right leg up then down, left leg up then down, right leg up then down, left leg. That gets the mind working a little bit more and can actually be

a good cognitive activity to do. If you do not want to do 10 repetitions, you can set a timer and go for 30 seconds of this activity doing your right leg and then 30 seconds of the activity stepping up with your left leg.

>>**Rick Turner:** Just for a second Dr. Bennett, want to go back to the concept of adding weight to the ankle. How would you do that?

>>**Dr. Bennett:** Well, an easy way, again to try to save our viewers some cost, we suggest you take an old sock, and you take some loose coins, and you throw those coins in the sock, and then tie the top of the sock off, and then just tie that sock around your ankle. So you can put some coins or if you have any other type of light weights, individuals who are into fishing have fishing weights. We tell them to go ahead and throw those in a sock. Then you can throw that sock on your scale at home and see how much poundage you have added, because you can add anywhere from two to five pounds, and then tie that sock around your ankle, and you have your own little home-made weight. So you do not have to go out and buy these Velcro weights. You can make them for yourself at home.

That is a great question because the next photograph shows Van doing an exercise not with weights but using what is called a resistive band. You can get these at most of our department stores now in the sports section. It is a resistive band that as you start to work a muscle you can see in this picture that Van is stretching this band out. The further he pushes his arm in front of him, the more resistance or challenge he gets out of the band which certainly increases the activation of the muscle. Repetitions, again, we usually like to start at around 10 but we can increase to 15 and then certainly going up to 20, and as well when we start to challenge muscles we want to think about not only increasing our repetitions but then starting to increase our sets. So we did a safe routine of 10 repetitions, two sets, 30 second rest in between, you can then progress to 15 repetitions, two sets, then 15 repetitions three sets. That is a nice way to start to build the program.



Another aerobic exercise that is good to do is a stationary bike. So if our viewers have access to a stationary bike either at their home or they are going to a gym, a stationary bike is terrific in regards to getting all the muscles in the legs working. Drew is on a particular bike here where the arms and the legs so, so he is actually getting arm exercise and leg exercise. It is great for getting that cardiovascular system working. We again like to recommend starting just at a maximum of five minutes and at low resistance. Do not get on and pump as hard as you can. Do it nice and easy. Then you can start to build your time as well as the resistance which will challenge your muscles as well as your cardiovascular system more.

We do not want to forget that importance of stretching. We talked a bit about strengthening and stretching is again very important to do. There are two modifications. The photograph that the viewers will be looking at on the right hand side shows Van doing a typical what is called a runners stretch. This stretches out the calf muscles. One leg is back, one leg is forward. The knee on the back leg stays straight, and the heel is down, and then Van simply leans his hips or trunk towards the counter which puts a stretch in that calf muscle. You want to hold that for a good 15 seconds and then you do it five times.

The picture on the left shows Van doing both legs at the same time. This can be advantageous for individuals when they have some difficulty with back pain, because you can see that this actually starts to introduce a nice normal curve which we should all have in our back, and at the same time you are getting a kind of a short cut way of stretching each calf muscle and saving yourself a little bit of time but also getting some nice stretching of the back as well.



The low back stretches is another good one. Again, lying preferably on the floor for our individuals that are fully mobile, the floor is a nice hard surface to do this stretch. Draw both knees up toward your chest, grasp your hands around the back of your thighs, hold that stretch for a good 10 to 15 seconds, do not forget to keep breathing through these. You do not want to hold your breath, and then lower the legs so that the feet are back on the floor. You want to do this stretch five times.



Here is that hamstring stretch that we discussed a little bit earlier in the previous broadcast. Again important to stretch that hamstring, so Van is sitting in a chair with his leg up on another chair. He has a belt. You could use a sheet or a towel around the foot as well, and draw both ends of the sheet up towards you. That puts a stretch on the calf muscle. As Van starts to lean forward from his trunk, that would also put more of a stretch on the hamstring muscle which is located in the back of the thigh. Again, a word of caution, try not to lean forward just with your head or your neck as that can cause some strain in that musculature.

Now here is some great exercises to do at home. You are going to see in all these pictures, Rick, that we have Van using weights, because again for individual that are fully mobile we unusually like to start to challenge those muscles right away. But I would start with two pounds. I would not jump into five pounds or anything bigger than that.

Van has terrific posture here, standing nice and straight. He is working his biceps muscle which is in the front of the upper arm, and the activity is he is going to tighten his muscles, keep his abdominals strong, and then he draws his hand up towards his shoulder. Then he slowly lowers the weight down so his elbow is extended and then repeats that particular movement. You can do 10 repetitions on the right, then switch over to the left, then go back over to the right, and finish up that second set on the left.



The next photograph shows Van doing exercise for the shoulder musculature which are referred to as the deltoid muscles. Again Van is in a standing posture here. He has his abdominal muscles nice and tight. He has his weight equal on both feet, and he has two-pound barbells in each hand. He starts with both elbows down at his side with his elbows bent, and then as you can see, you just lift the elbows up together away from the body. All you need to do is go up this high, and that is great activation of the shoulder muscles, the deltoids. Again, 10 repetitions here, a 30 second rest, and then another set of 10.

This is that wheelchair push up or chair push up that really is a wonderful exercise to work the upper back as well as the triceps muscle that is located on the back of the upper arm. Start of sitting in the chair, hands on both arm rests. The weight is not as much distributed on your feet as it should be through your arms, and your feet are obviously on the floor for balance, but you want most of your body weight through your arms. So as you press on the arm rest, you are lifting your buttocks up off the chair, strengthening those triceps muscles and the muscles in the upper back. Once you get up into that posture of hips up off the chair, try and hold that for five to ten seconds and then slowly lower back down.



The next photograph shows Van using one of those resistive band exercises again. In this particular movement Van is doing that chopping technique where both hands would be starting up and over Van's right shoulder. He has the band in his hand, and he draws his hands down and across towards his left hip. This is now quite a bit of work because as he draws down towards his left hip he gets the resistance of this band. This is a terrific exercise for the trunk muscles as well as the abdominal muscles. Once he gets down to his left hip then he slowly brings both hands back up to the right side, and then repeats that 10 times. Then he would switch over with both hands starting up and over the left shoulder and pulling down and across to the right hip.

This is Van doing a similar exercise but now rotating that trunk in an opposite direction. I should note to the viewers, Rick, that in the previous photograph the resistive band just has a knot in the end, and it is just placed inside the door frame, but high in the door frame. Here we have the resistive band placed low in the door frame so that Van is starting with both hands down towards his right hip, and then he is pulling against the band up and towards his left side. Again, a terrific exercise not only for the arms but for the abdominal muscles as well.



Then certainly the treadmill. We talked about the stationary bike as a wonderful form of aerobic exercise. Walking is just a terrific exercise for all of us to engage in. This is a picture of Van's walking on the treadmill. Notice that he is hanging on with two hands. We like to encourage safety as much as possible. Once the individual gets comfortable using the treadmill, they can go to one hand and potentially go to no hands if their balance is okay but otherwise hanging on with both hands is the safe way to go. We like to encourage people to start at just 1.0 MPH. They might say right away oh this is too slow, but better to start at a slow speed and just go for five minutes, then when you get off the treadmill you will not feel exhausted. You jump on the treadmill and you try to go at 3.0 MPH for five minutes, by the time you get off you are going to have that problem with that muscle endurance, muscle fatigability that we talked about early in the presentation.

>>**Rick Turner:** And be discouraged from trying it again.

>>**Dr. Bennett:** Absolutely. That is one of the things we want to avoid. We want people to feel great after the exercise. We want them to think, as we said in the beginning, if you are too tired to exercise but you said at least I will get on the bike for five minutes and then you felt better, that is how we want people to feel after they do exercise. We want them to feel like that was great. I feel energized. I feel stronger. My head is clearer, and therefore they are going to be motivated to do that exercise on a more hopefully routine basis, and we encourage daily.

In all these, Rick, again I would encourage our viewers to contact a rehab professional in your local chapter if you would like some guidance on specific exercises that would work best for you. It is always great to get a professional consultation, and many of my colleagues across the country are very happy to do that at now charge, have the individual come into the clinic, do what we call a free health screening, and put you on an exercise program that is going to work for you, because that is the key. An exercise program that will work for you that you enjoy doing.

As you can see in our last photograph here with Van, he has been working out really good. He has actually got 25 pound weights in both hands and he is yes doing his biceps curls with those weights. Way to go Van.



>>**Rick Turner:** That is great Dr. Bennett. Once again our time has come to a close for today, but we certainly appreciate you having spent your time with us during this physical fitness from home web cast series. Thanks again.

>>**Dr. Bennett:** Thank you, Rick.

>>**Rick Turner:** The National MS Society is proud to be a source of information for you about multiple sclerosis. Our comments are based on professional advice, published experience, and expert opinion, but do not represent individual therapeutic recommendation or prescription. For specific information and advice consult a qualified physician. If you have a question that was not addressed, please e-mail us at mslearnonline@nmss.org. If you would like more information on multiple sclerosis, click on the resources link on your screen or call the chapter

nearest you for an answer to your question. You can reach your chapter by calling 1-800-FIGHTMS. That is 1-800-344-4867. You may also want to check the National MS Society's web site where you will find more information about today's topic and a menu of other web casts available to participate in.

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For the National Multiple Sclerosis Society I am Rick Turner wishing you health and happiness.