

ADA Recommendations: Aerobic & Resistance Exercise

People with diabetes should be advised to perform at least 150 min/week of moderate-intensity aerobic physical activity (50–70% of maximum heartrate). (A)



In the absence of contraindications, people with type 2 diabetes should be encouraged to perform resistance training three times per week. (A)

Benefits For Those With Diabetes

↓ Body Fat %

↑ Weight Loss

↑ Insulin Sensitivity

↓ Fasting Glucose Levels

↑ Self Confidence

↑ Well Being



Improved Glycemic Control

Exercise Options

Any exercise you do counts toward better use of glucose by the cells, thus lowering your blood sugar. The "Just Move" or "Just Do It" slogans are exactly right.

Now how much, how long and how hard are set by you. If you have not exercised in the past, start with slow walks several times per day. If two minutes is all you can do, start there- and do it several times per day. Gradually build that up to 5 minutes at a time and more. The goal is 30 minutes per day, if able.

Of course, if you can already run marathons, you keep running at that pace. Others need to start slowly and build up gradually.

EXERCISE INTENSITY	Low Intensity (low intensity)	Moderate (medium intensity)	Strenuous (high intensity)
What it feels like	Does not make you breathe hard. Pulse rate may increase a little.	Breathing rate increases. Pulse rate rises to more than 100 beats per minute. Muscle work is felt. Should still be able to speak comfortably.	Rapid breathing and high pulse rate (125 to 160 beats per minute, depending on age). Cannot carry on a conversation
Effect on blood glucose	None, if done for less than 10 minutes. Over 10 minutes, glucose may begin to drop.	Lowers blood glucose. Test glucose before and after to learn exact effect.	Lowers blood glucose. Test glucose before and after to learn exact effect.
Examples	Walking, golf, light housework or gardening, bowling.	Brisk walking, jogging, bicycling on flat terrain, social dancing	Running, hiking, climbing, racquetball, bicycling on hilly terrain, cross-country skiing.

If you experience leg or chest pain when exercising, stop immediately and check with your doctor. Exercise can be obtained alternatively by using a pedometer, reaching 10,000 steps per day, which is deemed a good mark of exercise per day.

Chairobics is a program of exercises done while sitting in a chair, developed by a person with MS, they have been used for persons with COPD and those with other issues that make standing, walking exercise impossible. Go to <http://chairobics.com/> and there is a DVD for order of the program for 29.99 + shipping and handling

For persons who limit vigorous activity because of preference, lifestyle, age, or disability, there are videos at www.armchairfitness.com. Telephone is 1-800-453-6280

The U.S. Department of Health and Human Services, produces a tape and booklet through the National Institute on Aging, 1-800-222-2225. The program is called "Exercise: A Guide from the National Institute on Aging". This is set up to promote a low level exerciser to become more balanced and strengthened. It allows exercising at low to moderate levels, by moving from a seated position to standing. The booklet is free. A tape of the program had a small fee. www.nia.nih.gov or www.cdc.gov/nccdphp/sgr/ataglan.htm

<https://www.youtube.com/user/GLUCOSEZONE>. Free you tube exercise videos with specific directions on exercise and where in the body the exercise is helping- like working out with a friend.

Functional Fitness

Train your body for real life situations

Why does fitness matter?

Fitness gives you strength, balance, coordination, and agility. Functional fitness works major muscle groups through a full range of motion so your everyday movements are easier.

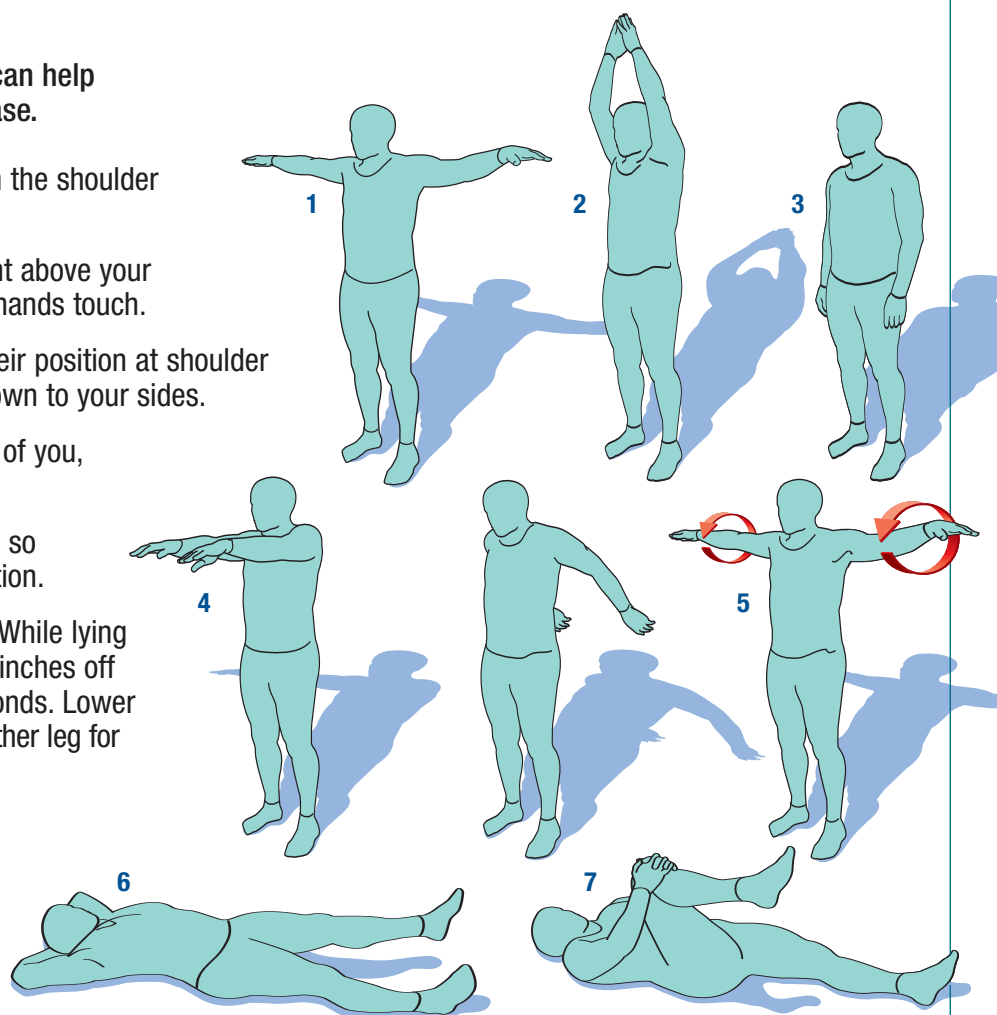
How do I get started?

STRETCH

Spending 5–10 minutes stretching can help you make other movements with ease.

1. Reach your arms out straight from the shoulder to your right and left sides.
2. Then slowly pull your arms straight above your head until your fingers from both hands touch.
3. Slowly bring your arms back to their position at shoulder level, and then bring your arms down to your sides.
4. Next, move your arms to the front of you, and then to the back of you.
5. Finally, rotate your arms in circles, so you experience a full range of motion.
6. Take similar steps with your legs. While lying on your back, raise one leg a few inches off the floor and hold it for a few seconds. Lower it, and then raise and hold up the other leg for a few seconds before lowering it.
7. Try hugging one knee and then the other knee. This stretches the leg muscles.

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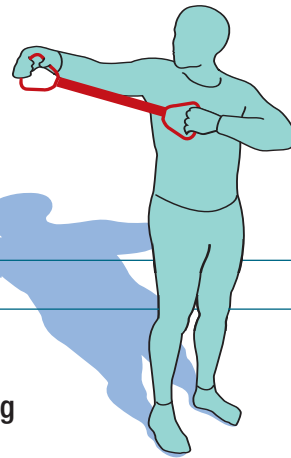
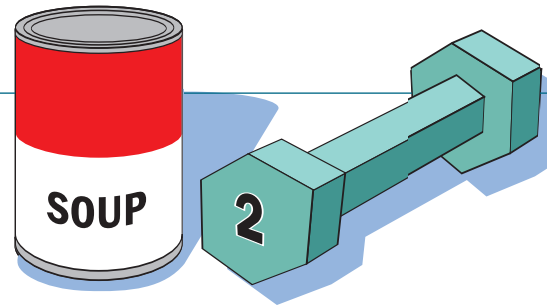
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BUILD STRENGTH

Once stretching is a part of your usual routine, add weights to improve strength. Start small, maybe using cans of soup. Advance to heavier weights when you are ready.

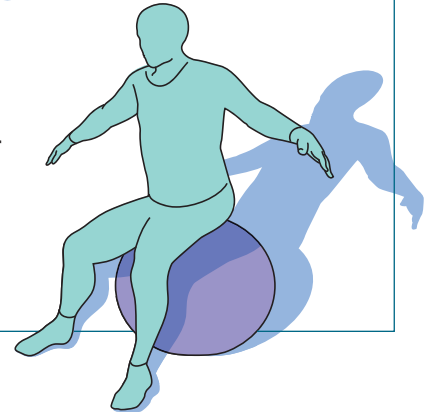
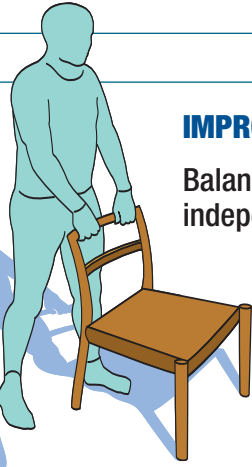
- Keep your weights (or soup cans) within reach of daily activities. You can lift them while talking on the phone or waiting for your coffee to brew.
- While watching TV, grab your resistance band and use it to do a few repetitions.



IMPROVE BALANCE

Balance can help prevent falls and lead to ongoing independence, especially for the older adult.

- Stand behind the back of a kitchen chair, and place both hands on the top of the chair back. Shift your weight to standing on just one foot. Hold that position for a few seconds. Then shift your weight to the other foot. The chair can help you maintain your balance.
- Instead of sitting in front of TV or computer, sit on an exercise ball.



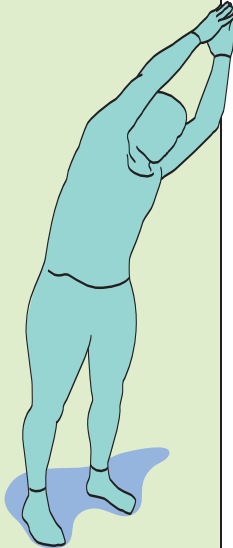
Remember the advantages of being fit — from being able to carry your groceries from the car into the house to dancing at your grandchild's wedding reception. Fitness is all about doing the things you enjoy with ease.

Medicare Part B patients: Call **1-877-231-5199** and mention reference code **ED06500** to order your diabetes testing supplies.
Web site: diabetes.RxSolutions.com

What Physical Activities Can You Do?

Whatever your size or shape, get physically active now and keep moving for a healthier life.

Stretch



Stretching and flexibility exercises may:

- Keep joints and muscles flexible
- Help prevent soreness from other activities and exercise

Simple things to get started:

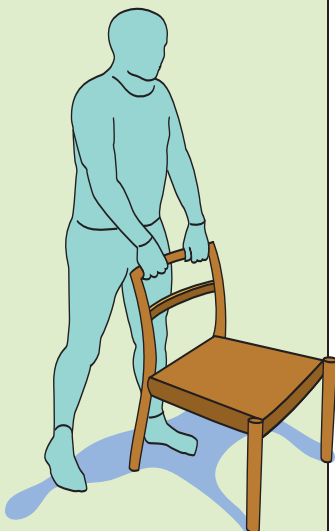
> Stretch anytime, anywhere

1. At home or at work, stand up, push your arms toward the ceiling, and stretch.
2. Stretch slowly and only enough to feel tightness — not until you feel pain.
3. Hold the stretch, without bouncing, for about 30 seconds.
4. Repeat 3–5 times each day.

> Take a class

Your local fitness center may offer yoga or other stretching classes. You may want to start with gentle classes, like those aimed at seniors.

Improve Balance



Balance exercises may:

- Help prevent falls
- Lead to ongoing independence, especially for the older adult

Simple things to get started:

> Use what's available

1. Stand behind the back of a kitchen chair, placing both hands on top of the chair back.
2. Shift your weight to standing on just one foot. Hold that position for 10 seconds.
3. Shift your weight to the other foot.
4. Repeat 3–5 times each day.

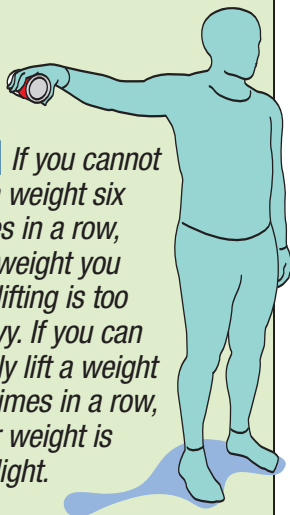
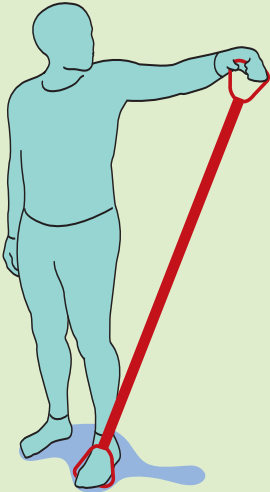
> Consider a Tai Chi class

This form of exercise is focused on balance. Tai Chi is an activity for all ages.

What Physical Activities Can You Do?

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Strength Training



TIP If you cannot lift a weight six times in a row, the weight you are lifting is too heavy. If you can easily lift a weight 15 times in a row, your weight is too light.

Strength training exercises may:

- Help build and maintain muscles, which helps burn more calories
- Help maintain bone mass
- Keep the strength you need to keep up with your usual, independent activities

Simple things to get started:

> Use resistance bands

Resistance bands are hollow, elastic tubes, made in a variety of resistance levels. The heavier and thicker the band, the more resistance it produces. Consider taking a class or watching a video to learn the right techniques. Start with one set of 8–16 repetitions of these exercises:

1. Chest press

Wrap the band around something stable behind you and hold handles in both hands, tubing along the inside of the arms (under the armpits), palms facing each other. Pull bands to your chest. Then press arms out in front of you. Return to start and repeat.

2. Rear deltoid row

Wrap band around a stable object and sit (or stand) facing it, holding the handles with arms out in front, palms down. Pull the elbows back until level with torso, squeezing the shoulder blades and keeping arms parallel to ground.

3. One-armed lateral raise

Sit (or stand) with one end of tube under foot and the other end in one hand. Keeping elbow slightly bent and fixed, lift the arm out to side, to shoulder level.

> Lift weights

You don't need benches or bars to begin weight training at home. You can use a pair of hand weights or even full cans of soup.

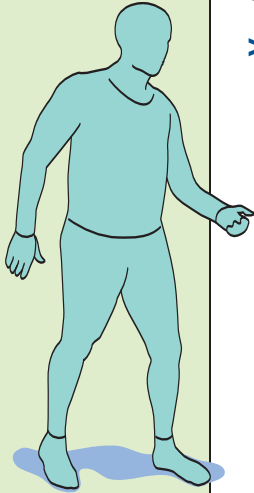
Make sure you know the correct posture and that your movements are slow and controlled.

1. Lift weights out to side to shoulder level (shown), repeating 10–12 times.
2. Lift weights from shoulder to above head 10–12 times.
3. With hands at your side, bend elbows to bring weights up to shoulder level (bicep curls) 10–12 times.

What Physical Activities Can You Do?

Whatever your size or shape, get physically active now and keep moving for a healthier life.

Aerobic Exercise



Aerobic exercise may:

- Increase heart rate and heart pumping power
- Work your large muscles
- Make you breathe harder

Simple things to get started:

> Walk

Any walking you do during the day (like doing chores around the house or in the yard) can help you become more fit. But regular, steady walking that makes you breathe heavier can help you to be healthier. Brisk walking is an aerobic activity.

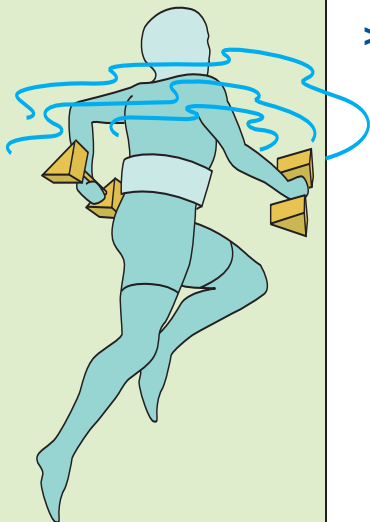
1. If you are not active now, start slowly.
2. Walk 5 minutes a day for the first week.
3. Walk 8 minutes the next week. Stay at 8-minute walks until you feel comfortable.
4. Then increase your walks to 11 minutes.
5. Slowly lengthen each walk by 3 minutes, or walk faster.
6. Consider getting and using a pedometer to keep track of your progress. You can monitor yourself with many online programs.
7. Wear socks and comfortable walking shoes with a lot of support.
8. Wear garments that prevent inner-thigh chafing, such as tights or spandex shorts.
9. Make walking fun. Walk with a friend or pet. Walk in places you enjoy, like a park or shopping mall.

> Water workouts

You don't need to know how to swim to work out in water; you can do shallow-water or deep-water exercises without swimming. A water workout can help your flexibility, reduce risk of injury, and keep you refreshed. You can keep cool in water — even when you are working hard.

1. Start slowly, working out 10–20 minutes once or twice a week.
2. Gradually increase the length and intensity of your workout as you feel stronger.

(Aerobic exercise continued on next page)



What Physical Activities Can You Do?

Whatever your size or shape, get physically active now and keep moving for a healthier life.

Aerobic Exercise



> Dance

You can dance in a health club, in a nightclub, or at home. To dance at home, just put on some lively music!

Dancing on your feet is a weight-bearing activity. Dancing while seated lets you move your arms and legs to music while taking the weight off your feet. This may be a good choice if you cannot stand on your feet for a long time.

1. Start slowly, dancing 10–20 minutes once or twice a week.
2. Gradually increase the length and intensity of your workout as you feel stronger.

> Bicycle

You can bicycle indoors on a stationary bike, or outdoors on a road bike. Biking doesn't stress any one part of the body — your weight is spread among your arms, back, and hips.

You may want to try a recumbent bike. On this type of bike, you sit low to the ground with your legs reaching forward to the pedals. The seat on a recumbent bike is also wider than the seat on an upright bike.

1. Start slowly, cycling 10–20 minutes once or twice a week.
 2. Gradually increase the length and intensity of your workout as you feel stronger.
- Always consult with your physician before starting an activity or exercise program.



What Physical Activities Can You Do?

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Whatever your size or shape, get physically active now and keep moving for a healthier life.

12 Tips for Success

Remember:

Physical activity doesn't have to be hard or boring to be good for you.

Anything that gets you moving around even for only a few minutes a day is a healthy start to getting more fit.

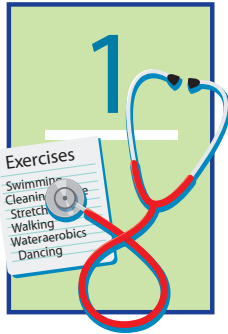
1. **Start slowly.** Consult with your physician before starting a new activity. Incorporate more physical activity into your daily routine and gradually work up to 30 minutes.
2. **Warm up.** Shrug your shoulders, tap your toes, swing your arms, or march in place. You should spend a few minutes warming up for any physical activity – even walking. Walk slowly for the first few minutes.
3. **Set goals.** Set short-term and long-term goals and celebrate every success.
4. **Set rewards.** Buy a new CD to motivate you, new walking shoes, or a new outfit.
5. **Track progress.** Keep an activity log, noting when you worked out, what activity you did, how long you did the activity and how you felt. Seeing your progress is positive reinforcement that helps you continue.
6. **Think variety.** Choose a variety of physical activities to prevent boredom and keep your mind and body challenged.
7. **Listen to your body.** If you feel fatigued or sick, take time off from your routine to rest. You can ease back into your program as you start feeling better.
8. **Cool down.** If you have been walking fast, walk slowly or stretch for a few minutes to cool down. Cooling down may protect your heart, relax your muscles, and keep you from getting hurt.
9. **Eat nutritious foods.** Eat nutritious foods. Remember that your health and weight depend on both your eating plan and physical activity.
10. **Get support.** Form exercise groups with friends or neighbors. When your children or grandchildren come to visit, rather than just sit and chat, suggest activities that involve group participation.
11. **Appreciate yourself.** If you cannot do an activity, don't be hard on yourself. Feel good about what you can do.
12. **Have fun!** Try different activities to find the ones you really enjoy.

SOURCES:

www.win.niddk.nih.gov/publications/active.htm
www.cdc.gov
www.diabetes.org
www.mayoclinic.com
www.about.com

Medicare Part B patients: Call **1-877-231-5199** and mention reference code **ED06500** to order your diabetes testing supplies.
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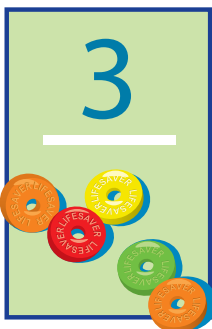
Top 10 Tips for Exercise Safety for People with Diabetes



Start with your doctor's recommendation. Get a physical exam and guidance on the kind of exercise that may be safest for you.



Pick an exercise that you enjoy, of those which your doctor approves.



Be prepared for the impact of exercise on your blood glucose (sugar). Exercise uses the sugar from your blood stream, so it can lower your blood sugar level, especially in people using insulin or certain diabetes pills. Carry some form of carbohydrate with you in case you swing too low.



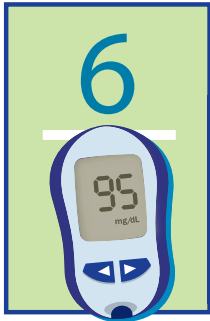
Check your blood sugar before you exercise. In general, if your blood sugar is less than 100, take a small snack that includes carbohydrate before you start to exercise. If your blood sugar is 300 before exercise, wait to exercise until your blood sugar is close to the normal range. If your fasting blood sugar is above 250 mg/dL and/or you have urine ketones, do not exercise.



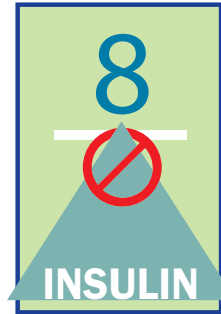
Wear identification that indicates you have diabetes, such as an identification bracelet or shoe tag.

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Top 10 Tips for Exercise Safety for People with Diabetes



Check your blood sugar after exercise. Blood glucose levels may drop for several hours after exercise, depending on several factors such as type and duration of exercise and blood glucose levels. Follow post-exercise snack guidelines: if your blood sugar is less than 100 mg/dL after exercise and you are not scheduled for a snack or meal for 30–60 minutes, take 15 grams of carbohydrate to prevent low blood glucose. Work with your diabetes care team to learn how to make additional adjustments to your diabetes care plan related to exercise.



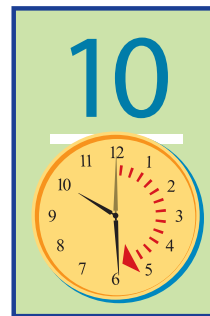
Avoid exercise at the time of the peak of your insulin's action. Exercise at that time could cause an unplanned dip in your blood sugar levels.



Pay attention to your feet. Wear comfortable and well-fitting shoes and socks. Check your feet before and after activities involving feet, such as walking, for any potential damage such as cuts or blisters.



Drink plenty of fluids. When you exercise, your body uses more fluid to keep you cool. Drink fluid before, during and after exercise.



Be active for 30 minutes most days of the week for your health.

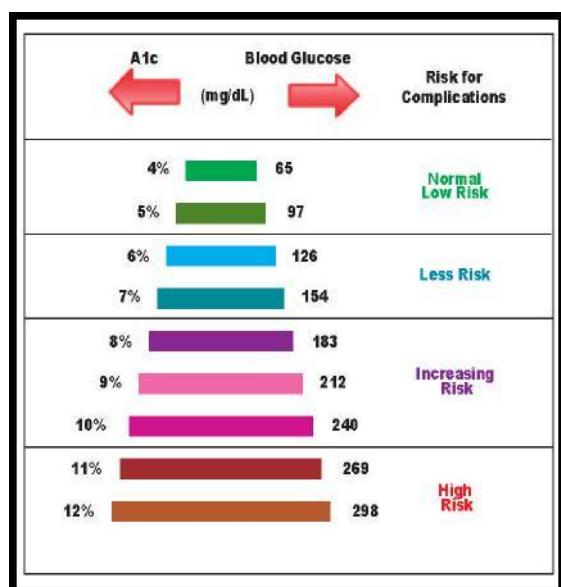
Always check with your doctor for individual guidelines on exercise safety.

Medicare Part B patients: Call 1-877-231-5199 and mention reference code **ED06500** to order your diabetes testing supplies.

Web site: diabetes.RxSolutions.com

Prescription Solutions is an affiliate of United HealthCare Insurance Company.

What Is Your Quality of Life Number?



The Quality of Life Test also known as the **A1c or HbA1c** test measures the amount of sugar that attaches to protein in the red blood cell. Because red blood cells live for about 90 days, HbA1c tests show your average blood sugar during that time. The greater the amount of sugar in your blood, the higher your HbA1c results will be. High blood sugars cause damage to large and small blood vessels. This will increase your risk of diabetes complications. The blood test that you do with your meter tells you what your blood sugar is for that one second of the day. There are 86,400 seconds in a day and 7,776,000 seconds in 90 days. To find out what your true average blood sugar is over 90 days, would take over 7 million test strips at a cost of 6 million dollars. Or you can get an A1c test!. Your A1c result on the chart can be converted to your average blood glucose.

Think of your HbA1c results as a **Quality of Life** number because the lower the number, the less chance that you will get the complications from your diabetes as kidney failure, blindness, limb amputation, strokes and heart attacks. The Normal range for the HbA1c for a healthy person without diabetes is between 4.3 and 4.5%. According to the American Diabetes Association, if your HbA1c is above 7% you need to make some changes quickly to prevent the complications from occurring. The American College of Endocrinologists recommends that your HbA1c should be below 6.5% and as close to normal as possible. But if you want to reduce your risk for complications to zero, then it needs to be as close to normal as possible.

In a recent study, the *Epic-Norfolk Study*, they took 9000 people and compared their A1c results, irregardless of having diabetes or not. They found that those people that had an A1c of 6% compared to those with a 5%, had a 28 percent increase in cardiovascular death for women and 26 percent increase for men.

By working to improve your A1c number, you will be improving your quality of life. Watch for the A1c number to be reported in your lab results as an eAG and not A1c.

According to the ADA the Diagnosis of Diabetes is an A1c of 6.5% and the diagnosis of Prediabetes is an A1c of 5.7 to 6.4%

Know your Quality of Life number TODAY! And prevent the complications from diabetes TOMORROW! 50% of the result of the A1c test comes from the last 30 days, so there is no reason to wait 90 days to check your A1c. The A1c test is a great motivational tool to keep you on track and lets you know if you are making the right or wrong decisions with your diet, exercise and medications!

My A1c Test Record: Name:

Date	A1c Result	% Avg Blood Glucose	mg/dL. A1c Goal:	%

* American Diabetes Association: Clinical Practice Recommendations 2003. *Standards of Medical Care* "Correlation between A1 C level and mean plasma glucose levels" Diabetes Care, Vol. 26. Supl p538.

Exercise Excuse Busters

By Sheri Colberg-Ochs, PhD, FACSM

Are you one of the many people who makes a New Year's resolution to get more fit and then breaks it by February? You're not alone! From the weather outside to simply not having the time or energy, there are plenty of reasons to skip a workout. What are your exercise obstacles? Are they more obstacles or ... excuses? We've gathered up exercise tips to squash every excuse in the book. Read on and get moving!

Excuse #1: "I'm too tired to workout."

You may claim that you're too tired to exercise, but your lack of exercise may be the very reason you feel that way. Even normally active individuals who take a few weeks off from exercise begin to feel more sluggish, lethargic, and unmotivated to exercise. Exercise will give you more energy. Start standing up and moving around more frequently, and you'll start to feel re-energized. Then, just keep it going!

Excuse #2: "I'm too busy to workout!"

The most common excuse for not exercising on a regular basis is lack of time. The best way to fit physical activity into your day is by writing it down in your schedule or calendar like you would other appointments and activities. Make exercising a priority! Even if you don't have time for an hour at the gym, remember that unstructured activities burn calories too. Take steps to ensure you're moving all day long — little things like raking the leaves, taking the stairs, or a brisk 10-minute walk during lunch will add up. If you need a visual reminder, wear an inexpensive pedometer as a simple way to motivate yourself to take extra steps every day.

Excuse #3: "Exercise is inconvenient."

Exercising can seem like a hassle if there are no parks, walking trails, fitness centers, or community recreational centers located nearby. Does it feel like every time you make great plans to power walk outdoors, it starts to rain? Make a backup plan so that these setbacks don't keep you from exercising! You can try walking in the mall or doing an exercise DVD at home. Look on the bright side: Stay-at-home fitness gives you complete control of your workout plans! If nothing else, use the time that you're exercising at home to also watch your favorite TV show or catch up on your reading.

Excuse #4: "I don't like working out."

Most adults need exercise to be fun, or they lose their motivation to do it over time. To prevent boredom, try varying your exercise frequently — both what you do and how hard or long you do it. Learn about exercise programs in your workplace or nearby in your community. Get a group of coworkers together to take walks during lunch breaks! How about taking up ballroom dancing or yoga classes? All activities count, and you'll be amazed at how much easier it is to stick to your goals if you participate in workouts that you enjoy. Our best tip to fight workout boredom: keep it fun, simple, and varied!

(Next)

Exercise Excuse Busters, Continued

Excuse #5: “I don’t feel well.”

Poor health is another major obstacle to exercise participation, but not one that can’t be overcome. In fact, becoming more active usually improves your health in so many ways, even if it’s ailing. Age itself may be considered an exercise barrier. What you don’t use, you lose, though, so fight back and prevent some of the decline just by being physically active. Even engaging in physical activity around your home helps.

Excuse #6: “I can’t get motivated.”

Just think about all of the reasons you have to get in shape and live a healthier life. Make a list and post it in a place you look at every day; this will remind you of your workout ambitions and help keep you on track! Friends are also a great source of motivation, so get yourself a reliable exercise buddy. An exercise buddy increases your likelihood of showing up and also makes your activities more fun. Having a good social network to support your exercise habit will help your adherence over the long run.

Excuse #7: “I am intimidated by workouts that seem too difficult for me.”

Exercising at a high intensity at first might feel too hard and make you want to quit. If you can’t comfortably carry on a conversation with someone else while you are exercising, then you are working harder than you need to. Focus instead on exercising a little bit longer at a slower pace instead of burning yourself out. The important thing is that you’ve made the commitment to becoming more active. Maybe you want to start with a walking program or some time in the pool to ease into exercise and build your way up.

Excuse #8: “I don’t see any results.”

It is important to understand that exercise may not produce immediate physical changes. That doesn’t mean, however, that you aren’t making any progress. Remember your long-term goals and think about how working out makes you feel. Set realistic goals, keep track of your hard work and progress, and reward yourself when you reach milestones! Writing down any little improvement you see on a daily basis can be helpful. Who says that stickers and treats are just for kids?

Excuse #9: “I fell off the exercise wagon and can’t get back in my groove!”

A short break from your normal routine – such as for vacations, illness or injuries, or other changes in your normal schedule – does not mean that you can’t start scheduling your physical activity back in again. You may need to begin or start back at a lower intensity to avoid burnout, muscle soreness, or even injury. 

NOTE: The information is not intended to be a replacement or substitute for consultation with a qualified medical professional or for professional medical advice related to diabetes or another medical condition. Please contact your physician or medical professional with any questions and concerns about your medical condition.

FIT WALKING INTO YOUR LIFE WITH THE 10,000 STEPS A DAY PROGRAM

General Information:

The goal of taking 10,000 steps in a day is a rough equivalent to the recommended 30 minutes of activity most days of the week. This level of activity will help to reduce your risk of heart disease can help you to live a longer, healthier life. Most people will need to build up to 10,000 steps a day rather than start out at this level. The program below provides a guideline for a comfortable, gradual progression of activity over a 4-week period of time.

You will need to invest in a pedometer. Many pedometers provide a variety of settings to count distance walked in miles or calories expended as well as steps taken. For this program, we will use the steps taken mode. Be sure to read the instructions for your pedometer carefully to insure accuracy of measurement. Most pedometers are worn on your waistband lined up with the middle of either your right or left pant crease. Make sure the pedometer is level to the ground, as well, for accurate counting.

Week 1:

Measure your steps in a typical week. Don't try to walk more than normal. Each morning, reset the pedometer to "0". Wear it all day from the moment you get up until you go to bed, except when immersed in water. When you remove it at night, record the number of steps you've taken. Note if you have done any formal exercise that day, for example "20-minute treadmill walk" or if there is a reason for more or less steps that day "meeting all day" or "gallery walk tonight". At the end of this week, add steps for all seven days. Divide by 7. Multiply by 1.2. This is your goal for the next week.

Week 2:

Your goal is to boost your average daily steps by 20%. Find ways throughout your day to add steps – take stairs instead of elevators, park farther away from the building, walk to your colleague's office to speak to him/her rather than call or e-mail them, or take a walk on your lunch hour. At the end of this week, once again total your steps, divide by 7 and multiply by 1.2.

Week 3:

If you haven't reached 10,000 steps, or if your goal is substantial weight loss (in which case you many experts recommend 12,000 to 15,000 steps per day) you may need to add some formal exercise into your day. This may include a 20-30 minute walk in the morning or evening outdoors or on a treadmill.

Week 4 and beyond:

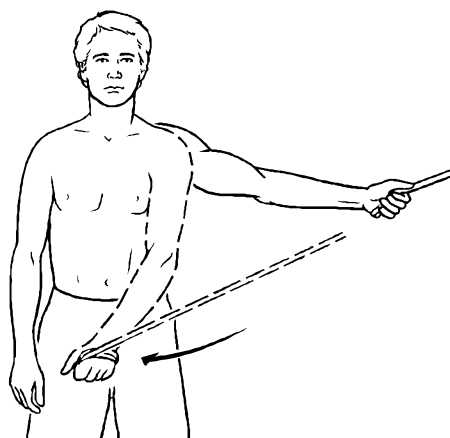
Some people find that just with three weeks of effort they've reached their steps/day goal and are walking 10,000 or more steps per day. But many find it takes several more weeks of boosting by 20% each week until they can create a 10,000 step a day habit. Even if you only try for 10% more each week, you'll soon find your days are full of opportunities for more steps. You'll also find that in short order you won't need a pedometer to tell you how you are doing.

Steven N. Blair, et al, Active Living Every Day, Human Kinetics, 2001.

SHOULDER - 46 Strengthening: Resisted Adduction

Hold tubing in left hand, arm out. Pull arm toward opposite hip. Do not twist or rotate trunk.

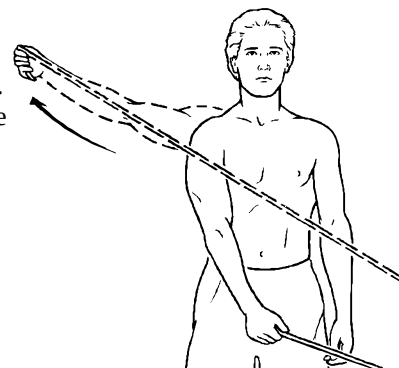
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



SHOULDER - 42 Strengthening: Resisted Abduction

Hold tubing with right arm across body. Pull up and away from side. Move through pain-free range of motion.

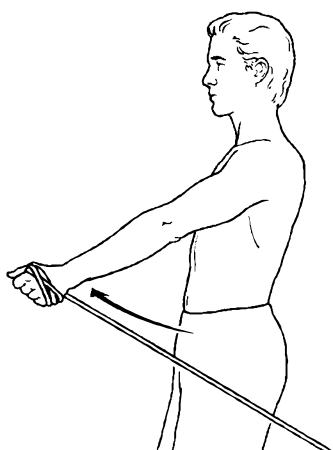
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



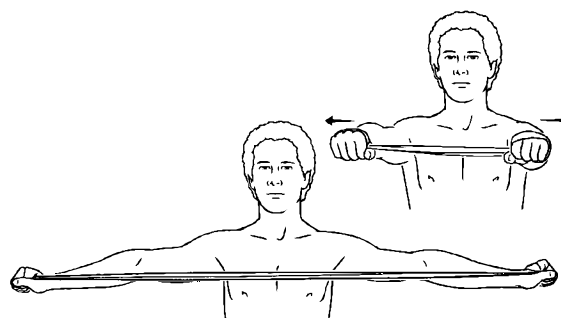
SHOULDER - 41 Strengthening: Resisted Flexion

Hold tubing with left arm at side. Pull forward and up. Move shoulder through pain-free range of motion.

Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



SHOULDER - 92 Strengthening: Chest Pull – Resisted

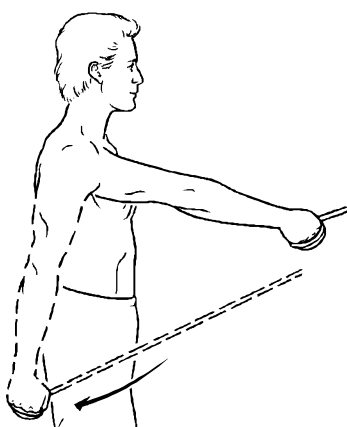


With resistive band looped around each hand, and arms straight out in front, stretch band across chest.
Repeat 10 times per set. Do 1 sets per session.
Do 1 sessions per day.

SHOULDER - 45 Strengthening: Resisted Extension

Hold tubing in right hand, arm forward. Pull arm back, elbow straight.

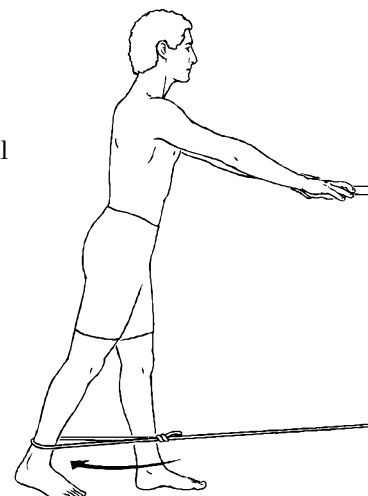
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



HIP / KNEE - 28 Strengthening: Hip Extension – Resisted

With tubing around right ankle, face anchor and pull leg straight back.

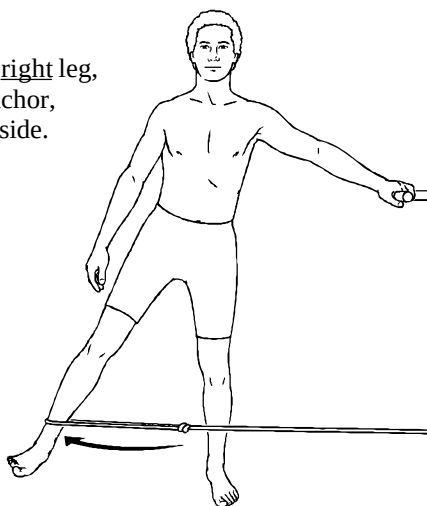
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



HIP / KNEE - 27 Strengthening: Hip Abduction – Resisted

With tubing around right leg, other side toward anchor, extend leg out from side.

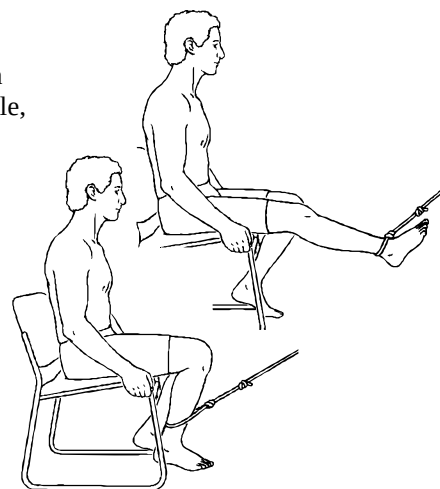
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



HIP / KNEE - 44 Hamstring Curl: Resisted (Sitting)

Facing anchor with tubing on right ankle, leg straight out, bend knee.

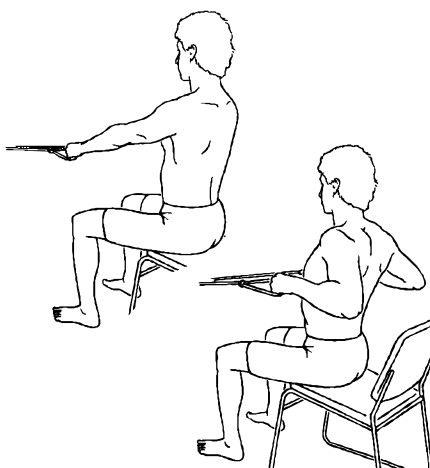
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



BACK - 43 Scapular Retraction: Bilateral

Facing anchor, pull arms back, bringing shoulder blades together.

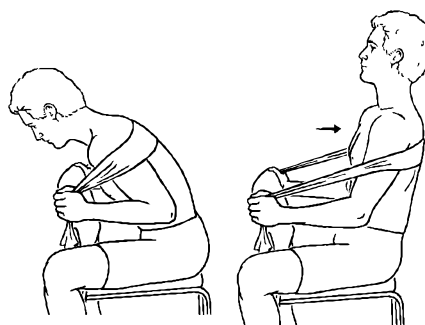
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



BACK - 45 Extension: Resisted

Sitting backward in chair with resistive band held against chair back and looped around upper body, lean back against resistance of band.

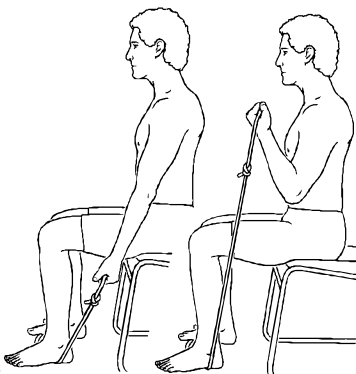
Repeat 10 times per set. Do 1 sets per session.
Do 1 sessions per day.



HAND - 35 Elbow Flexion: Resisted

With tubing wrapped around left fist and other end secured under foot, curl arm up as far as possible.

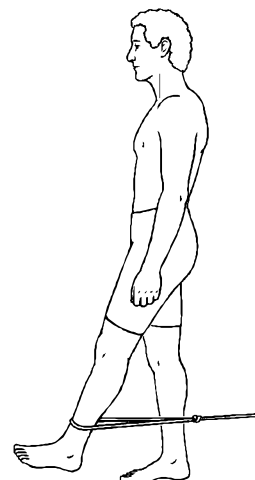
Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



HIP / KNEE - 29 Strengthening: Hip Flexion – Resisted

With tubing around left ankle, anchor behind, bring leg forward, keeping knee straight.

Repeat 10 times per set.
Do 1 sets per session.
Do 1 sessions per day.



Exercise & Physical Activity

Get moving! This 120-page guide describes the benefits of exercise and physical activity for older people. Learn how to set exercise goals and stick to them. Includes sample exercises for endurance, strength, balance, and flexibility and a list of resources.



Learn more about the National Institute on Aging's exercise and physical activity campaign by visiting the [Go4Life® website](#). **Go4Life** was designed to help adults 50 and older incorporate more exercise and physical activity into their daily lives. On the **Go4Life** website you can watch exercise videos, submit your own exercise success stories, print educational tip sheets, and use the interactive tools in the [MyGo4Life](#) section to make an exercise plan and track your progress over time.

You can also find an [audiobook version of this exercise guide](#) to listen to directly on the page or to download to your computer to take with you on the go!

Subtitle: : Your Everyday Guide from the National Institute on Aging

Contains Related Publications: Yes

Related Content: [Workout to Go: A Sample Exercise Routine from the National Institute on Aging at NIH](#)
[Go4Life DVD--Everyday Exercises from the National Institute on Aging](#)
[Exercise and Physical Activity: Getting Fit for Life \(AgePage\)](#)

Source URL: <http://www.nia.nih.gov/health/publication/exercise-physical-activity>

Patient: _____ Date: _____ Time: _____ AM/PM

The 30-Second Chair Stand Test

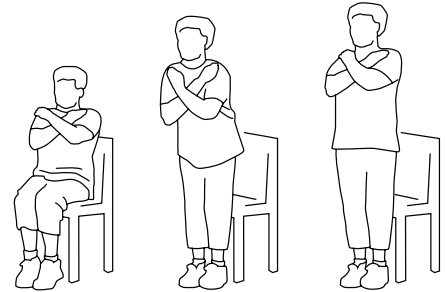
Purpose: To test leg strength and endurance

Equipment:

- A chair with a straight back without arm rests (seat 17" high)
- A stopwatch

Instructions to the patient:

1. Sit in the middle of the chair.
2. Place your hands on the opposite shoulder crossed at the wrists.
3. Keep your feet flat on the floor.
4. Keep your back straight and keep your arms against your chest.
5. On **"Go,"** rise to a full standing position and then sit back down again.
6. Repeat this for 30 seconds.



On **"Go,"** begin timing.

If the patient must use his/her arms to stand, stop the test.
Record "0" for the number and score.

Count the number of times the patient comes to a full standing position in 30 seconds.

If the patient is over halfway to a standing position when 30 seconds have elapsed, count it as a stand.

Record the number of times the patient stands in 30 seconds.

Number: _____ **Score** _____ **See next page.**

A below average score indicates a high risk for falls.

Notes: _____

For relevant articles, go to: www.cdc.gov/injury/STEADI



Centers for Disease
Control and Prevention
National Center for Injury
Prevention and Control

STEADI Stopping Elderly
Accidents, Deaths & Injuries

Chair Stand—Below Average Scores

Age	Men	Women
60-64	< 14	< 12
65-69	< 12	< 11
70-74	< 12	< 10
75-79	< 11	< 10
80-84	< 10	< 9
85-89	< 8	< 8
90-94	< 7	< 4

Patient: _____ Date: _____ Time: _____ AM/PM

The 4-Stage Balance Test

Purpose: To assess static balance

Equipment: A stopwatch

Directions: There are four progressively more challenging positions. Patients should not use an assistive device (cane or walker) and keep their eyes open.

Describe and demonstrate each position. Stand next to the patient, hold his/her arm and help them assume the correct foot position.

When the patient is steady, let go, but remain ready to catch the patient if he/she should lose their balance.

If the patient can hold a position for 10 seconds without moving his/her feet or needing support, go on to the next position.
If not, stop the test.

Instructions to the patient: I'm going to show you four positions.

Try to stand in each position for 10 seconds. You can hold your arms out or move your body to help keep your balance but don't move your feet. Hold this position until I tell you to stop.

For each stage, say "**Ready, begin**" and begin timing.

After 10 seconds, say "**Stop.**"

See next page for detailed patient instructions and illustrations of the four positions.

For relevant articles, go to: www.cdc.gov/injury/STEADI



Centers for Disease
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National Center for Injury
Prevention and Control

STEADI Stopping Elderly
Accidents, Deaths & Injuries

Instructions to the patient:



1. Stand with your feet side by side.

Time: _____ **seconds**



2. Place the instep of one foot so it is touching the big toe of the other foot.

Time: _____ **seconds**



3. Place one foot in front of the other, heel touching toe.

Time: _____ **seconds**



4. Stand on one foot.

Time: _____ **seconds**

An older adult who cannot hold the tandem stance for at least 10 seconds is at increased risk of falling.

Notes:

DESKERCISE! 33 WAYS TO EXERCISE AT WORK

Remember the days when “work” meant manual labor with a side of blood, sweat, and tears? Neither do we. These days, it seems we’re more likely to log hour after idle hour with our bums glued to our seats. And while you may be an Excel champ by day and gym rat by night, recent research suggests that the recommended [30 minutes of cardio](#) five times per week may not undo the [health risks](#) of a sedentary lifestyle [\[1\]](#).

So what’s a worker chained to his or her desk to do? Luckily, short bouts of aerobics, strength exercises, and [stretching](#) in between conference calls and Gchats can help improve fitness levels and [heart health](#), too [\[2\]](#). While these [deskercises](#), or desk exercises for the cubicle-bound, won’t promise Olympic mile times or the ultimate six-pack abs, they might just improve strength and burn a few extra calories to boot. So whether it’s Powerpoint, Photoshop, or faxing on those to-dos, we’ve got 33 sneaky exercises for a healthier (and happier!) workday.

Cardio

1. The Twinkle Toe: Tap into your [inner Fred Astaire](#) by speedily tapping those toes on the floor under your desk. Or, graduate to a harder (and less conspicuous) move: Stand in front of a small trashcan and lift up those legs to [tap the toes](#) on its edge, alternating feet, in [soccer-drill fashion](#).

2. The Stair Master: Want to avoid elevator small talk in favor of elevating the heart rate? [Take the stairs](#)! Accelerate on the straight-aways and take two at a time every other flight for a real leg burn.

3. The Slog, Then Jog: Instead of slogging away for hours nonstop, take a mini break for a stationary jog. Pop up from your chair, (admire the butt imprint left behind!), and [jog in place](#).

Willing to huff and puff a little more? Pick up those knees! Continue for one minute, return to spreadsheets, and repeat.

4. The Celebratory Split Squat Jumps: Win over a new client? Figure out how to un-jam the printer? Is it *finally* Friday?! Celebrate with the [split squat jump](#). With feet hip-width apart, step the left leg back two feet and balance on the ball of the foot. Next, lower into a lunge, and then accelerate upwards in an explosion of celebration. While in the air, switch feet so that the left foot is planted firmly in front and the right leg is now behind. Repeat 10-12 times on each side.

5. The Cubicle Wanderer: [Walking](#) during work is totally underrated [3]. Take a stroll down the hall to catch up with coworkers or welcome a new employee. Or, instead of dialing extensions and sending lazy emails to the manager two doors down, put in some face time. Just beware of tempting candy jars when making the rounds.

6. The Mover and Shaker: There's nothing wrong with a brief spaz sesh. Release stress and spark some energy with a quick bout of [seated dancing](#) when no one is looking! [Salsa](#) anyone?

Legs and Butt



7. The Wall (Street) Sit: [Wall sits](#) are great for building strength and endurance. Standing with your back against the wall, bend the knees and slide your back down the wall until the thighs are parallel to the floor. [Sit and hold](#) for 30-60 seconds (or up to 12 hours, [the world record!](#)), while

browsing the [Wall Street Journal](#) (or BuzzFeed). For some extra burn, try crossing the right ankle over the left knee, hold for 15 seconds, then switch!

8. The Patient Printer: The boss lady just requested that a 200-page presentation be printed “perfectly.” Why lackadaisically stand by the printing pages when you could be sculpting your calves with [calf raises](#)? Standing with feet shoulder-width apart, press up onto the tippy toes, pause at the top, then lower back down. Repeat for three sets of 12-15 reps, or until the printing, faxing, or scanning is done. Ready to level up? Try raising only one leg at a time.

9. The Silent Seat Squeeze: Believe it or not, some deskercises can be kept under wraps, and this isometric glutes exercise is one of them. To start toning, simply [squeeze the buttocks](#), hold for 5-10 seconds, and release. Repeat until the agenda wraps up or the glutes tire. The results will be uplifting in more ways than one.

10. The Seated Leg Raiser: When pay raises are nowhere to be seen, consider the [leg raise](#). (Bonus: they’re hardly noticeable underneath the desk!) While seated, straighten one or both legs and hold in place for five or more seconds. Then lower the leg(s) back to the ground without letting the feet touch the floor. Repeat (alternating legs if raising them separately) for 15 reps. Underwhelmed? Loop a purse or briefcase strap over the ankle for added weight. Or, for more of an ab workout, [add a crunch](#).

11. The Last Man Standing: Sure, [standing around](#) isn’t exactly traditional exercise, but research shows it’s got more than a leg up on sitting. After all, long periods of sitting are linked to increased risk for diabetes, obesity, and cardiovascular disease, whereas standing significantly increases your daily caloric expenditure [\[4\]](#) [\[5\]](#) [\[6\]](#). Stand whenever you can, and consider roping in other coworkers to have standing meetings too!

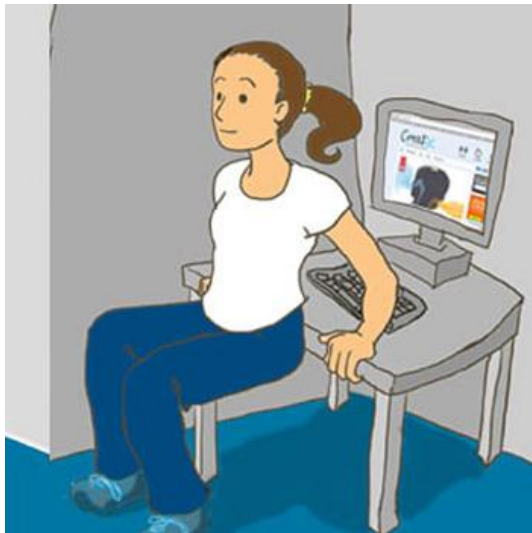
12. The Desk Squat: Mastered the art of standing around? Add a [squat](#)! Start standing with feet together (and the desk chair pushed out of the way). Bend the knees slightly so the thighs are almost parallel to the ground, as if sitting in a chair. As you bend, raise the arms straight up or

towards the computer screen. Keep the knees together and aligned. Hold for 15 seconds and release. Repeat for 4-6 reps.

13. The Lunch Break Hammy: Strengthen the hamstrings with this [standing leg curl](#). Stand behind your chair and hold onto it for support. Gently kick one foot back, aiming the heel for the top of your thigh. Lower the foot back down and repeat exercise with the other leg. Do 10 reps, take a bite of your lunchtime sandwich, and then do 10 more.

14. The Grim Reamer: Scope out the office for a ream of paper, or a sealed package of printing paper. While seated, place the stack in between the knees and press legs inward, [engaging the inner thighs](#). Continue squeezing the paper ream in place for 30-60 seconds while sorting through the morning's flood of emails. (Now that's multitasking!)

Shoulders and Arms



15. The Cubicle Dip: [Triceps dips](#) can be done [almost anywhere](#), including a cubicle. Using a sturdy desk or a non-rolling chair, sit at the very edge and place hands on either side of the body while gripping the chair's edge. With the feet planted on the floor a step or two away from the desk or chair, straighten up the arms to lift up the body. Next, bend the arms to reach a 90-degree angle so that your body dips down, hold, and re-straighten while keeping the body raised above the chair. Complete 8-10 reps.

16. The Namaste: Whether you're praying for a project extension or for more defined arms, this move has you covered. Seated upright with feet flat on the floor, bring the palms together in front of the chest and [push both hands together](#) powerfully until you feel the arm muscles contract. Hold the prayer hands pushed together for 20 seconds. Release and repeat the sequence until you feel a little more zen.

17. The Secret Handshake: Let's make a deal. Sitting up and with feet flat on the floor, clasp hands together as if giving yourself a handshake (with one hand's thumb pointing to the floor and the other pointing to the ceiling). Then pull! [Resist the motion](#) of both arms (you should definitely feel this in those biceps). Hold for 10 seconds or more, release, and repeat.

18. The Fist Pump: Received approval from the head honcho for extra vacation days? Time to rock out to that Bruce Springsteen playlist while simultaneously toning the arms. [Fist punch](#) into the air like a champ (alternating arms, of course), and continue for 60 seconds or more — or until you realize the boss is right behind you.

19. The Knuckle Sandwich: So the big cheese said no to the promotion and returned your project covered in red ink. To relieve frustration and get a fab arm fix, try [shadow boxing](#) to the [perfect boxing playlist](#). Stand (if you can) and throw out a few [jabs](#), [hooks](#), and [uppercuts](#) in rapid succession (just watch out for computers and coworkers!). Continue for a minute or longer to blow off steam and tone the arms, chest, and core.

20. The Flapper: Whether you've got a thing for the 1920s or enjoy mimicking penguins, this move is for you. Standing with arms by your sides and palms facing behind, [pulse the arms backward](#) for 5 seconds. Release and repeat for 12-15 reps. For best results, make sure to keep the arms long and straight!

21. The Casual Lean: Waiting in the hall for a meeting to start? Perfect time to nonchalantly work out the upper arms! [Casually lean](#) against the nearest wall, supporting your body with the forearm only. Now lean into the wall until the upper arm almost touches it, and then push back out. Repeat for 15 reps or until the meeting gets underway.

22. The Lumberjack: While this lumberjack may be wearing slacks instead of plaid, he can still get a good midday workout. Stand and clasp the hands together, resting them on the right shoulder as if holding an axe. Gently [swing the imaginary “axe”](#) by straightening the elbows and moving the hands toward the left thigh. Next, bring the clasped hands to the left shoulder followed by a swing to right thigh. Repeat 15 times on each side, or until all office plants have been hacked down.

23. The Office Genie: Want to add a little magic to the workday? Raise the legs into a criss-cross applesauce position while seated in a chair. With your hands on the armrests, push upwards to [raise the body off the seat](#) and remain floating for 10-20 seconds. After granting a few wishes, release back down to the chair, rest for a minute, and repeat. Craving more magic? Try this balancing act while in a chair that spins.

24. The Stapler Curl: Trusty staplers are always guarded closely, especially the [red ones](#). Seated or standing, take the stapler in one hand with the palm facing upwards. Starting at the thighs, bend the elbow and curl the arm up towards the chest, just like a regular dumbbell [bicep curl](#). Pause momentarily and then lower the stapler back down. Continue for 12-15 reps, then switch. Don't have a weighty stapler? Try using a filled water bottle or a heavy change purse (the vending machine can wait!).

Chest, Back, and Neck

25. The Pencil Pinch: Lose the pencil behind the ear. The really suave workers hold it in between their shoulder blades! Show off your traps by rolling back the shoulders until the [shoulder blades are pinched together](#). Pretend you're holding a pencil between the scapulas (or try it for real!). Hold for 5-10 seconds, release, and repeat for 12-15 reps.

26. The Shoulder Shrug: Not recommended for board meetings (unless you're really on the fence). Simply raise both shoulders up toward the ears, hold for 5 seconds, then relax. Repeat for

15 reps. Feeling unstoppable? Try advanced [shoulder shrugs](#) while standing and holding a paper ream in each hand.

27. The Pinstripe Push-Up: This slightly modified [wall push-up](#) is more suitable for suits. Standing one to two feet from a sturdy wall (*not* a cubicle divider!), lean forward until palms are flush against the wall, with arms straight and parallel to the ground. Next, bend the elbows to bring the body towards the wall, hold for two seconds, then push back to the starting position. Complete 12-15 reps.

28. The Nape Shaper: Tortleneck season is over — it's time to tone that neck! For the first isometric [neck strengthening trick](#), put your head in your hands as if exasperated by the workday (you may already be in this position), and press your palms into your forehead as if trying to push the head backward. Resist the motion by engaging the neck muscles. Next, clasp the hands behind the back of the head and try to push the head backward, resisting the motion with your hands. Hold each deskercise for 5 seconds, or until [The Evolution of Ryan Gosling](#) has finally loaded. Slowly release, rest, and repeat 5 times each.

Core

29. The Desk Chair Swivel: Lucky enough to have a fun swivel chair? Use its twirl to your advantage with this [oblique ab fix](#). Sitting upright and with the feet hovering over the floor, hold the edge of your desk with your fingers and thumb. Next, use the core to swivel the chair from side to side. Swish back and forth for 15 rounds.

30. The Posture Perfecter: Perfect posture is a must for long days at the desk. Practice safe [desk ergonomics](#) by adjusting the chair height to make sure the feet, hips, and arms are at 90-degree angles to the floor. Engage the core to keep the back straight throughout the day. No slouching allowed!

31. The Fab Ab Squeeze: Another silent deskercise, this one can be covertly executed when walking down the hall or seated during a call. Simply take a deep breath and [tighten the abdominal muscles](#), bringing them in towards the spine as you exhale. Stay squeezed for 5-10 seconds and release. Repeat for 12-15 reps.

32. The “Crunch Time” Crunch: The deadlines are looming, as are hopes for a six-pack by summer. (And *maybe* a six-pack of Corona, too.) While most jobs don’t condone in-office boozing, you can get the *other* six-pack with some seated [isometric](#) crunches. With both elbows on the thighs, try to curl the chest in towards the legs while resisting the movement with the arms. Hold for 10 seconds, release, and repeat times 10.

33. The “Weeee” Desk Chair Wheel: Go ahead, play with your wheelie chair (everyone wants to!). While seated in a chair with wheels, position yourself at arm’s length from a desk or table and grasp its edge with your hands. [Next, engage the core](#), raise the feet slightly off the ground, and pull with your arms until the chair slowly rolls forward and your chest touches the desk’s edge. Then roll back by pushing away, with the feet still raised. Repeat 20 times, or until you burn holes into the carpet.

Keep forgetting to do your deskercises at work? We know you’re a Microsoft Outlook pro! [Make a calendar](#) reminder or apply sticky notes around the workstation. Embarrassed? Seek out an empty conference room on a lunch break. We bet our biceps that coworkers will not only enjoy your deskercise routine, but admire it. *Now it's time to hear from you! What are your creative tips for sneaking in exercise on the job? Tell us in the comments below!*

30 Ways to Reach 30 Minutes of Exercise



Phone calls. Groceries. Family time. They can all count toward your goal of managing your diabetes. Researchers have good news to share: [Exercise has some amazing health benefits](#). But even more amazing is that you don't need to be a hard-core athlete to enjoy those benefits. Although experts recommend at least 30 minutes of exercise a day, three 10-minute sessions work just as well as one 30-minute bout. And forget about "exercise"—just focus on 30 minutes of *movement* a day. *It all adds up!* Here are some ideas for getting active with ease.

1. STROLL WITH A FRIEND.

The minutes will pass quickly as you talk. Plus, you'll be less likely to skip your workout when you know someone is depending on you.

2. WALK WITH A DOG.

He'll prod you to get out the front door, even on the most dismal days.

3. TAKE A VIRTUAL HIKE.

With Web-walking USA, you can travel a virtual scenic trail. Log your walking time to help keep you motivated. Find this program and more at walking.about.com.

4. TRY A RELAY.

Carry grocery bags into the house one at a time.

5. MAKE A SPLASH.

Pool-based classes, such as water aerobics and lap swimming, are easy on your joints.

6. MOVE TO A MOVIE.

Pop in a DVD, get on the treadmill, and walk while the plot unfolds.

7. BOOK IT.

Listen to books on tape as you walk.

8. MAKE DANCING DATES.

Go to a dance club or take dance lessons.

9. GET DOWN AT HOME.

Put on tunes and dance—even while you're doing other activities.

10. MOVE AT THE MALL.

Safety and climate control can make it a great walking location.

11. GET FIT GARDENING.

As you dig, water, and pull weeds, you'll use muscles all over your body.

12. BOWL IT UP.

Bowling can burn up to 225 calories an hour.

13. VISIT THE ZOO.

By the time you see all the animals, you'll have walked more than 30 minutes. Museums work too.

14. PARK IT.

Find and explore a new local park every month. Then walk its paths.

15. ENJOY THE RIDE.

Elektra, Fuji, and others have designed comfort bikes that allow you to sit upright and easily put a foot down when necessary.

16. TRY TAI CHI OR QIGONG.

Check your local hospital or Y for these martial-arts classes. They're gentle on the joints, and they help improve balance.

17. STEP IT UP.

For a few bucks, pedometers can serve as priceless motivation boosters. Wear one to record your average number of daily steps. Then increase your steps each day, tracking your progress on a calendar.

18. USE KITCHEN TIME.

Stand an arm's length from the counter, and push your arms against it. Push in and out to work your arms and shoulders.

19. BE READY ON THE ROAD.

Keep sneakers, a Frisbee, tennis rackets, or other fitness gear in your trunk. Then whenever you have extra time and you're near a park, get active.

20. SIT AND SQUEEZE.

Whenever you find yourself sitting—in a meeting at work or in a traffic jam—squeeze the muscles in your butt, arms, shoulders, tummy, back, and legs. Hold for 5 counts, then release.

21. ADD A WALK.

Going to the mountains? A relative's home for a visit? Out to dinner? Wherever you go, build a short walk into your activities.

22. STAND BEFORE YOU SIT.

When you're about to sit down in a chair, do a squat instead. Begin to sit down, and as soon as your tush nears the seat of the chair, stand back up.

23. REAP A REWARD.

Walk to the bookstore for a new read.

24. WATCH IT.

Set an alarm to go off every so often to remind you to stand up, stretch, and walk for about 10 minutes.

25. MARCH IT.

March in place while folding clothes to burn a few extra calories.

26. SKIP THE CART.

At the grocery store, carry a basket in each hand. If you use a cart, pick up the pace when near temptations.

27. WALK AND TALK.

While talking on a cordless phone, walk around the house or up and down your driveway.

28. TAKE TV BREAKS.

Walk in place or do squats during commercials.

29. JUST PLAY.

Take your kids or grandkids to the playground, and join them on the equipment.

30. DITCH THE DRIVE-THROUGH.

Walk inside the bank and dry cleaner.

Dr. Sheri Colberg's Balance Exercises

Test Your Balance: If you think you already have great balance, first test it out before you assume too much: stand on one leg and *shut your eyes*. (Don't try doing this without holding onto something or having something close by that you can grab if you need to.) If you can't stand steadily on one leg for at least 15 seconds -- with or without your eyes closed -- then you definitely need to start practicing as soon as possible to improve your balance. Begin by doing the following exercises on a daily basis to improve your balance and lower your risk of falling.

Balance Activity	Movements required
Single leg balance	Facing a wall for support, eyes open, balance on one leg for 10-20 seconds. Repeat on other leg.
Three-way leg swing	Stand on a single foot, hands on hips. Swing the other foot forward 10 times, sideways 10 times, and backwards 10 times, returning to the (middle) starting position after holding each outward position for 5 seconds per repetition.
Balance/Reach	Stand on both feet, then bend knees and lower body and reach across the body with the opposite hand. Can be done single legged for progression.
Forward Lean	Stand on one or both feet, hands on hips. Bend forward as if to touch forehead to the wall. Hold 10-15 seconds.
Toe Raise	Rock back on heels while standing upright. Repeat 10 times.
Heel Raise	Stand on both feet, rise on the balls of both feet, and repeat 10 times. Can be done single legged.

Single Leg Balance Exercise Modifications: The easiest balance exercise is to hold onto a table with both hands while standing on one leg. Once you feel stable doing this exercise in this position, though, you should try it with less support (as outlined below). This exercise should be minimally done two to three times a day on alternating feet. Within a couple of weeks or months, your balance will rapidly improve.

This easy exercise can improve your balance further if you modify it slightly. Incorporate these more advanced balance techniques as you progress: (1) hold on with only one hand; (2) hold on with just one fingertip; (3) don't hold on at all; and (4) if you

are very steady on your feet, close your eyes (still without holding on). It's a good idea to have someone stand close by in case you ever feel unsteady, though, particularly when your eyes are closed. Switch legs and repeat often, both with your eyes open and with them closed.

Anytime Balance Exercises: The following exercises also improve your balance--regardless of how young and steady you still are. You can do them almost anytime and as often as you like, as long as you have something sturdy nearby to hold onto if needed.

- **Walk heel-to-toe.** Position your heel just in front of the toes of the opposite foot each time you take a step. Your heel and toes should touch or come close. You may want to start first going along hand rails or with a wall next to you.
- **Walk backwards.** Try walking backwards along a wall or a kitchen counter without looking back, using the wall or counter to steady yourself infrequently.
- **Stand on a cushion or other unstable surface.** Try using cushions or pillows of varying firmness, and stand on them with your legs alternately together and apart.
- **Stand with a changed position.** Try standing under different conditions—with your eyes open or closed, your head tilted to one side or straight, your mouth talking or silent, and your hands at your sides or out from your body.
- **Grab a towel with your toes.** Place a towel on the floor and practice grabbing it with the toes of both of your feet, alternately, while both sitting and standing.

Other Helpful Activities: Tai chi is excellent for improving balance. Getting involved in tai chi or any form of martial arts training will allow you to practice your balance while gaining lower body strength. Lower-body resistance training also doubles as balance exercise. When you do your regular strength exercises, your balance should improve at the same time. Finally, maintaining your flexibility will improve your balance, so get involved with yoga (to work on flexibility and strength at the same time) or simply engage in stretching on a regular basis to keep a wider range of motion around all of your joints.

Although falling down is inevitable at any age, you can substantially reduce your risk of falling by improving your balance, lower body strength, flexibility (especially in your ankles), fitness, and agility. Work on balance exercises daily for the best results.

EXERCISE RECOMMENDATIONS FOR RETINOPATHY

If your retinopathy is mild and non-proliferative, there is really no reason to limit your physical activity unless your ophthalmologist recommends otherwise.

However, if you have moderate or severe proliferative retinopathy, it is best to avoid activities that cause rapid changes in blood pressure. These include exercises that involve rapid changes in direction (such as court sports), sudden “bursts” of movement (including golf, baseball, martial arts and calisthenics), very high intensities (such as sprints/racing, heavy weight –lifting and most forms of competition) or placing the head below the level of the heart (as occurs during yoga and diving).

Moderate-intensity cycling, swimming, walking, rowing and elliptical training are generally acceptable. Be sure to build in a warm up and cool down so that any change in blood pressure occurs gradually. Use of exercise machines at home or at a gym offers the advantage of keeping the intensity level measurable and steady through the course of your exercise session. Even low-weight/ high-repetition weight – lifting may be permissible, as long as you never hold your breath while lifting. Instead, blow air out when lifting, and inhale when relaxing.

If you have recently experienced laser eye surgery, a retinal hemorrhage or retinal detachment, physical activity should be kept at a very low level. Heart rate should not exceed 30 beats per minute above resting heart rate levels. Because the severity of eye problems can vary from person to person, it is best to check with your ophthalmologist before starting any form of exercise.

Dr Laurence Hirsch, Vice President of Medical Affairs, Diabetes Care at Becton Dickinson

Exercising with Neuropathy

Indicated

- swimming
- water aerobics
- bicycling
- chair exercises

Contraindicated

- jogging
- prolonged walking
- step aerobics
- treadmill

Guidelines for insulin and CHO adjustments based on duration and intensity of exercise

intensity	duration		
	short	medium	long
Low	0-10%	0-20%	10-20%
moderate	0-10%	20-30% + 15-25 gm/CHO/hr	30-50% +25-50 gm/CHO/hr
high	0-20%	30-50% + 25-50 gm/CHO/hr	30-60% +50-80 gm/CHO/hr

FOR CONSIDERATION IN PERSONS WITH TYPE 1 DIABETES

CONSIDERATION FOR LONG PERIODS OF EXERCISE IN ATHLETES



Exercise Really *is* Medicine

Exercise programs are built around four things, often called FITT (Frequency, Intensity, Time, Type)

1 Frequency: How often you do the exercise.

It is best to do some type of exercise daily; however, this may vary depending on your overall health as well as your fitness goals. In some cases it may be recommended to alternate activities—for example endurance activities 3 days a week and strength training 2 days a week, while doing some flexibility exercises every day.

2 Intensity: How hard you exercise.

You may be given a target heart rate (THR) or pulse to achieve with exercise or be advised to exercise to a perceived exertion rating of “somewhat hard.” Both of these are measures of intensity. The idea is for you to work hard enough to get the benefits of exercise without overdoing to the point that exercise may not be safe.

3 Time: How long you do the exercise.

How long you should exercise—usually measured in minutes per day. While a minimum of 30 minutes of endurance exercise daily is recommended for most adults, it may take some time to increase to that level if you haven’t been exercising for a while. You may be advised to start with 5 minutes a day and add a few minutes each day as time goes on.

4 Type: What kind of exercise you do.

Walking, jogging, bicycling and swimming are examples of exercise that use large muscles and cause your body to use more oxygen than it would while resting. These types of activities are called endurance and they help the heart. Strength exercises help to increase strength and muscle tone. They may also help with balance and fall prevention. Examples of strength exercises are pushups, sit ups, and using weight lifting machines or free weights. Flexibility exercises stretch and lengthen your muscles to help prevent soreness and injury.



Exercise Really *is* Medicine

My Exercise Prescription

Type of Physical Activity	Aerobic	Strength	Flexibility
Frequency (days per week)			
Time (minutes per day)			
Intensity (how hard)	Target HR (pulse rate): Perceived Exertion: 		

Rated Perceived Exertion Scale

This scale of numbers is used as a rating system for exercise intensity. A rating of 0 would be nothing at all (sitting in a chair) and a 10 would be very, very heavy (how you feel at the end of an exercise stress test). In most cases, you should exercise at a level of 3-4, which is safe and improves your health.

0	0.5	1	2	3	4	5	6	7	8	9	10
Nothing at All	Just Noticeable	Very Light	Light	Moderate	Somewhat Heavy	Heavy		Very Heavy			Very, Very Heavy

Target Heart Rate (Pulse)

- Your nurse or doctor can help you find a target heart rate zone for your needs, goals and physical condition.
- You gain the most benefits and lower the risks when you exercise in your target heart rate zone.
- You can find your target heart rate zone like this:
 - Your maximum heart rate is approximately 220 minus your age.
 - So if you are 40 years old, $220 - 40 = 180$.
 - When you exercise, your target heart rate should be 60-80% of 180, or between 108 and 144 beats per minute.

Genes associated with diabetes, obesity could be altered by exercise

- October 1, 2013

Genes associated with the development of diabetes and obesity could be altered by long-term exercise, according to data presented at EASD 2013.

“In summary, we have shown that regular exercise changes expression of our innate DNA through epigenetic mechanism. We have described for the first time what happens on an epigenetic level in fat cells when we undertake physical activity. Our results suggest new mechanisms for how different genes may predispose to obesity or type 2 diabetes and also a new mechanism for the beneficial effect of exercise on metabolic health,” **Tina Rönn, PhD**, of Lund University in Malmö, Sweden, said in a press conference.

Subcutaneous fat biopsies were collected before and after the 6-month supervised exercise intervention study, including 23 men from Malmö, Sweden. DNA and RNA extraction was also performed on the sedentary but otherwise healthy patients (mean age, 37.4 years; mean BMI, 27.8 kg/m²).

“Surprisingly, we could see that changes in DNA methylation patterns had taken place in almost one-third of all genes after the exercise intervention,” Rönn said. “In most cases, the genes had become more methylated. And additionally, one-third of the genes with altered adipose DNA methylation also showed a difference in the expression of that gene,” Rönn said.

These changes were seen in both cells associated with type 2 diabetes and fat storage. The average methylation was notably higher among regions 200 bp upstream of transcription start site, in 5' untranslated regions and in the first exon, with significant increases after exercise ($P < .01$), according to abstract data.

Furthermore, 45 sites in 21 genes were differentially methylated in adipose tissue before exercise vs. after exercise. Of those, 10 sites mapped to *KCNQ1* and five sites mapped to *TCF7L2* — the gene most predominantly associated with type 2 diabetes, according to a press release. These changes could have clinical implications for future treatments, according to data.

“Genes are not static. They turn on or off depending on what signals they receive from elsewhere in the body or in the environment,” Rönn said. “These methylation patterns can be passed on or inherited by new cells or the offspring. What is fascinating about the epigenetic process is that it seems to be affected by the way you live your life.”

For more information: [Rönn TS. Oral Presentation #107. Presented at: the 49th Annual Meeting of the European Association for the Study of Diabetes; Sept. 24-27, 2013; Barcelona, Spain.](#)

Disclosure: The study was supported by Nilsson, Thuring, Söderberg, Pålsson Foundations SRC, EFSD/Lilly grant and ALF.

Summary

Physical Activity is the Magic Pill



Patients with DM can expect to benefit from regular physical activity through reductions in their cardimetabolic risk factors

1.Excessive running could kill you: study



TOM SPEARS [More from Tom Spears](#) Published on: February 2, 2015 Last Updated: February 4, 2015 12:43 PM EST

Regular light jogging may put you on the road to a longer life, a new study suggests.

POSTMEDIA

Light jogging may be the best road to a long life, while strenuous running may damage the heart, a new Danish study of more than 1,100 healthy people suggests.

The 12-year study looked at a variety of runners and non-runners in Copenhagen. It concludes that one to 2.4 hours of “light jogging” per week is the healthiest form of running.

And the best schedule for this exercise, it adds, “was no more than three times per week. ... Overall, significantly lower mortality rates were found in those with a slow or moderate jogging pace.”

But it said that “over the 12-year study, strenuous joggers were as likely to die as sedentary non-joggers.”

Results are published in the Journal of the American College of Cardiology.

Researchers registered 28 deaths among joggers and 128 among sedentary non-joggers. In general, the joggers were younger, had lower blood pressure and body mass index, and had a lower prevalence of smoking and diabetes.

“It is important to emphasize that the pace of the slow joggers corresponds to vigorous exercise and strenuous jogging corresponds to very vigorous exercise,” Dr. Peter Schnohr of Frederiksberg Hospital in Copenhagen said in an announcement of the work. “When performed for decades, this (high) activity level could pose health risks, especially to the cardiovascular system.”

The researchers, part of the long-term Copenhagen City Heart Study, say this builds on past studies showing that strenuous exercise can do more harm than good.

“The U-shaped association (i.e. on a graph) between jogging and mortality suggests there may be an upper limit for exercise dosing that is optimal for health benefits,” Schnohr said. “If your goal is to decrease risk of death and improve life expectancy, jogging a few times a week at a moderate pace is a good strategy. Anything more is not just unnecessary, it may be harmful.”

5 TIPS FOR PEOPLE WHO HATE EXERCISE

1. CHANGE YOUR MINDSET

2. STOP DOING ANYTHING
YOU DON'T LOVE

3. TRY SOMETHING NEW

4. TAKE IT OUTSIDE

5. REST WHEN YOU NEED IT