

THE BENEFITS OF

Exercise and Physical Activity

The health benefits of regular exercise and physical activity have been well documented and are hard to ignore. Exercise has been a cornerstone of diabetes management for a long time. **For people with diabetes**, exercise and physical activity can help to **improve blood glucose** levels by helping your body's cells use insulin better. Additionally, exercise **strengthens your heart**, **lowers your risk for heart disease** and **lowers your cholesterol**.

For people with pre-diabetes, studies have shown 150 minutes of exercise a week, along with changes in your diet can lead to an average weight loss of 10-15 lbs, and a 60% less chance of developing diabetes.

Regardless of your age, physical ability or health condition, the benefits of regular exercise and physical activity are available to you and can have a significant impact on your health.

“ National guidelines for adults recommend a total of 150 minutes per week of moderate aerobic activity. ”



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Exercise Principles

INDIVIDUALITY

People are different and their exercise needs vary; optimal benefits occur when a program meets the needs and capacities of the individual.

SPECIFICITY

Training must be specific to the individual's goals.

PROGRESSIVE OVERLOAD

You get improvements by doing a bit more each time.

VARIETY

Variety allows recovery and reduces the risk for injury. *(This does not mean simply changing exercises all the time)*

REST

Use rest intervals to get the best out of your exercise.

REVERSIBILITY

Use it or lose it. It's easier to keep fitness than to create it.

FITT (Frequency, Intensity, Time, Type)

Each exercise or activity plan has an ideal training **frequency** (how often), **intensity** (how hard), **time** (duration, rest intervals) and **type of exercise** to be used.

UNITED MEDICAL ACCOUNTABLE CARE ORGANIZATION

Exercise & Fitness Education

Exercise with *Diabetes*



We'll help you achieve a path to a

Healthy Lifestyle

that you and your family deserve!

Focusing on **Weight, Diabetes and Overall Health!**

strength . fitness . balance . wellness

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Spine and Orthopedic Specialists, Inc
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*This Exercise & Fitness class is brought to you by
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Understanding Exercise & Physical Activity

Lifestyle Approach

Any physical activity is better than none at all! Even if you are inactive or out of shape now, you can improve your health by moving just a little more. Take small steps and add more movement into your daily life. Any activity that is part of your day burns calories even if it's not part of a structured exercise program. Household chores, yard work and gardening count as physical activity, as do playing with your children, parking further away from the building to increase your number of steps, or taking the stairs instead of the elevator.

Structured Approach

If you are already active, you benefit from a more structured exercise plan. This includes choosing activities that you can perform at a moderate intensity level on most days of the week for a set amount of time. A well rounded fitness program will include aerobic exercise, resistance exercise and flexibility training.

Aerobic Exercise

Aerobic exercise or activity involves moving the large muscles over and over, increasing your body's need for oxygen. Your heart then has to beat faster so it can get enough oxygen to the muscles. The heart continues to beat this fast as long as the activity lasts. Aerobic exercise is not a "stop and start" type of activity.

Aerobic exercise includes: brisk walking, jogging or running, riding a bicycle, using conditioning machines, swimming, tennis, rowing, and dancing.

Aerobic activity sessions should start with a warm-up and end with a cool-down. This helps to prevent injury and limit stiffness or soreness after exercise.

National guidelines for adults recommend a total of 150 minutes per week of moderate aerobic activity. This activity can be spread out over the week, for example, 30 minutes 5 days per week. It is best to start with what you can comfortably do. You may start with 5-10 minutes of activity and work up to 30 minutes. This progressive increase in activity gives your body enough time to adapt to the changes in your activity level. It may take a few weeks to progress to

Exercise and Diabetes Tips

Prevent hypoglycemia/hyperglycemia by balancing exercise with food and diabetes medication. It is important to know that physical activity at the same time could cause hypoglycemia.

- Check blood glucose immediately before and after exercise
- Check blood glucose again 1-2 hours after exercise
- Learn when insulin lowers your blood glucose level the most.
- Certain diabetes medications raise the risk for hypoglycemia, especially if you don't eat enough before exercise.

30 minutes and feel good while you are doing it. If weight loss is your goal, you may need to be active for longer periods. Progressively work up to doing 45-60 minutes of continuous activity, 5 to 7 days per work, to help you burn more calories.

Resistance Exercise

Resistance exercise or activity strengthens your muscles and keeps you from losing muscle mass as you get older, as well as increases your muscular endurance.

Resistance exercise include: weight lifting with dumbbells or free weights, weight lifting machines, resistance bands and tubing, certain types of calisthenics - moving your body weight for resistance such as abdominal crunches, push-ups, toe raises, etc.

To build muscle strength and endurance, do 1 to 3 sets of 8 to 12 reps of each resistance activity. This can be done using weights, or you can use your body weight as resistance for many exercises such as planks, lunges or squats.

Tips for proper lifting with hand weights include:

- keep your spine in correct alignment – don't arch or hunch over;
- lift the weight slowly – 2 to 3 seconds;
- breath out when you lift the weight;
- lower the weight slowly – 2 to 3 seconds;
- breathe in when you lower the weight.

Flexibility and Stretching Exercise

Stretching the muscles can be done as part of your warm-up or cool-down. Recent studies have shown that stretching does not prevent muscle injury as was previously thought. Even so, stretching has other benefits, and exercise programs that include stretching can increase your flexibility. **If you have not been active for a long time, stretching may be a good start for easing into a more active lifestyle.** When you stretch, only go as far as your muscles comfortably allow, don't bounce or jerk, but hold for 15-30 seconds. Alternatively, you can do dynamic stretching, which involves gentle movements during the stretch.



Very vigorous aerobic exercise and certain resistance exercise may not be safe if you have heart disease, eye disease, or kidney disease as it may raise your blood pressure too high or cause damage to these organs. Check with your provider first to see what kind of exercise is safe for you.

- **Exercise within 2 hours of your last meal/snack, you may or may not need a snack, based on blood glucose reading. You may need to snack if more than 2 hours after your last meal/snack has passed.**
- **Avoid late evening exercise as it may cause hypoglycemia while you are sleeping.**
- **If you need a snack before exercise, based on your blood glucose, it should contain 10-30 grams of carbohydrates for every 30-45 minutes of moderate exercise.**
- **Pre-activity snacks should include: carbohydrates; more fiber, protein and fat than a snack to treat low blood glucose such as fresh fruit (fiber), yogurt (protein).**

Progress in Stages & Goal Setting

Unrealistic expectations can derail efforts to become more physically active. Often times, when a person is fresh off a decision to change their behavior and begin exercising, they set goals that are too aggressive, and may result in either de-motivation or injury. **Goals should be specific, measurable, attainable, realistic, and on a timeline (SMART).**

Progress comes in stages:

Stage of Physical Activity	Number of Weeks	Frequency of Activity (/week)	Duration of Activity (minutes)
Initial	1-4	3-4	15-30
Improvement	5-24	3-5	25-40
Maintenance	25+	3-5	20-60

Key Points:
Measurable changes begin: stamina and endurance; Individual at risk of slacking off; Workload and intensity of activity should increase.

Key Points: *A new goal should be set.*

Barriers & Facilitators

We all know that physical activity and exercise is good for you, but common barriers can prevent you from making healthy choices. Fortunately, for every barrier, there are many possible solutions:

Out of Shape	Start with activities you can tolerate. Increase your activity slowly over time.
Time Constraints	Prioritize. Consider what else you can reasonably give up. Get up earlier in the morning, do things with the kids, think of activities you can do while watching TV.
Weather	Do indoor activities. Get an exercise video/DVD. Walk inside the mall or a large store.
Self-Conscious	Do indoor, solo activities. Wear loose clothes that don't emphasize your body shape. Find a gym that caters to people you feel comfortable being with.
Boredom	Choose activities that you enjoy. Do different activities on different days. Get an exercise partner.
Lack of Motivation	Focus on reasons for being healthier (i.e. children, spouse, long-term life goals). Plan a reward when you meet your goal. Get an activity accountability partner.
Unrealistic Expectations	Focus on the positives that activity brings (i.e. more energy, taking steps to improve your health). Give it a month or more before you expect to see the scale change since you may be gaining muscle mass.

Common facilitators include:

- **Social Support:** Exercise partner, family member or co-worker
- **Community Resources:** Fitness center, local pool or community center
- **Reminders and Cues:** Notes, entry on your calendar or reminder alarm
- **Rewards:** Incentives to maintain motivation (preferably non-caloric ones)