

## **EXERCISE RECOMMENDATIONS FOR DIABETES**

1. Why is important for a person diagnosed with diabetes to exercise?
  - It will improve your body's use of insulin
  - Burn excess body fat & control your weight
  - Improve muscle strength
  - Improve bone density and strength
  - Lower your blood pressure
  - Help protect against your heart and blood vessel
  - Improve blood circulation & reduce the risk of heart diseases
  - Improve your energy for the day to enhance work output
  - Reduce stress, promote relaxation
  - Delay the body's need of medicine to rely on controlling the glucose level
  - The goal is to become active and stay active by performing activities that you enjoy, such as yard work, playing golf with a friend, etc.
  
2. GUIDELINES prior to starting a workout program:
  - 1<sup>st</sup>: Be sure to check with your physician before starting a workout program. It is important to receive clearance from your physician for medical purposes. He/she can educate you for any extra precautions for your workout program.
  - Set goals
    - It is important to know what you are striving.
    - Research has shown that people who are diagnosed with diabetes and are self motivated to exercise are more likely to improve their overall health, rather than having someone else motivate him/her.<sup>3</sup>
    - Some goals examples are:
      - Be able to perform an aerobic activity without taking a break for 30 minutes.
      - Lift a certain amount of weights to improve your strength.
      - Be able to jog without needing to walk or take a break for 20 minutes.
    - These goals can progress once you have achieved them. They can continuously change as you adapt to the program.
  - Include a variety of exercises:
    - Stretching, aerobic, and muscular strengthening
    - Perform the exercise activity with a partner. It has been shown that people who workout with another person, will more likely continue to workout and make more significant improvement.
    - Perform the exercise activity 3 to 5 times per week.
  - Research shows that people with diabetes who participated in a diabetes exercise training program using combined aerobic and strength resistance training exercise improve their overall health than people who just perform aerobic exercises.<sup>4</sup>
  - BE SAFE (don't forget):
    - Wear your diabetes I.D.
    - Check your blood glucose prior/during and after exercising
    - Carry a snack to eat in case your glucose is low
  
3. STRETCHING:

- Why stretch?<sup>1</sup>
  - Increase flexibility and minimize chance of pulling a muscle
  - Keeps joints flexible
  - Helps warm-up your body for preparation for future activities.
- Stretch muscles of upper body and lower body
- Slowly perform the stretch
- Stretch the muscle until you feel discomfort, but not pain
- Hold the stretch for 20-30 seconds
- Slowly release the stretch
- Repeat the stretch 2-3 times
- Perform 8-10 stretches, taking approximately 10-15 minutes total
- Do not bounce
- Examples:
  - Standing quad stretch:
    - While standing, hold onto a wall or a stationary bar and bend one of your leg and reach back to grasp the ankle with the opposite hand. Hold this position for 20-30 seconds.
    - Switch legs and repeat
  - Standing wall pushes:
    - Stand arm length from a wall.
    - Place your hands on the wall at shoulder height, bend your elbows, lean in from the ankles, and press your body upright until you feel a slight strain in your legs.
  - Standing calf stretch:
    - While standing, extend one leg in front of you and place the heel on the floor, toes in the air.
    - Keeping your back straight, bend forwards at the hips until you feel the stretch of your calves.
    - Switch and repeat
  - Standing hip stretch:
    - Standing, take a full step forward with one of your foot.
    - Gently bend your knee to lower hips, keeping the heel on the ground and opposite knee straight
    - Switch and repeat

#### 4. AEROBIC:

- Start off slow, 10 minutes, and work your way up to performing an aerobic activity of 30-40 minutes.
- Perform aerobic activities that will increase your heart rate to 60-70% of maximum (RPE scale: 12-16)
- It is important to maintain the heart rate in the set range to receive the best benefit
- Perform activities you enjoy, such as walking in the neighborhood, park, or in the mall, jogging, swimming, biking, mountain climbing, etc. These types of activities are continuous and will increase your heart rate.
- Some other aerobic activities that can be beneficial in the community:
  - Take a low impact aerobic class
  - Water aerobic at a local gym (Community, YMCA)
  - Play tennis
  - Participate in a fun run

#### 5. STRENGTHENING:

- Perform weight training with another person for safety and company.
- Perform 3 sets of 10-15 repetitions for each station, with 8-10 different stations.
- Take a paper and pen/pencil to document how much weight you used for each station.
- Start off each station using light weight and add.
- How much weight should you add?
  - You should add enough weights that the last 2 repetitions are a struggle to complete. If you can perform 15 reps and not be tired, then you did not add enough weights. If you can only perform 5 repetitions, then take some weights off
- Alternate strength training of upper body and lower body.
  - For example: Monday, perform strength training of upper body; Wednesday, lower body; Friday, upper body, etc.
- Join a class at the health club to do strength training with weights, elastic boards, etc.

#### 6. COOL-DOWN

- It is important to cool down your body after a workout
- The cool-down should last between 10-20 minutes, depending on the intensity and duration of the workout
- Examples of cool-downs:
  - Slow walk
  - Ride a bicycle
- This will help with muscles soreness the next day or two.
  - RPE scale: 7-9
- It is ok to take frequent breaks during your activities. If you feel like you cannot complete the activity at one time, then don't. Instead of performing 8 stations of weight training, start off at 4 stations and work your way up. If you cannot walk for 10 minutes, then start off at 3-5 minutes and work your way up. It is important for you to know that this is **YOUR PROGRAM**, adjust it accordingly.
- (don't forget):
  - Check your blood glucose after exercising.

## REFERENCES:

1. <http://www.diabetes.org/>.
2. <http://www.acsm.org/>.
3. Taylor D, Fletcher JP, Tiarks J. Impact of physical therapist-directed exercise counseling combined with fitness center-based exercise training on muscular strength and exercise capacity in people with type 2 diabetes: A randomized clinical trial. *Phys Ther.* 2009;89(9):884-892.
4. Marcus RL, Smith S, Morrell G, Addison O, Dibble LE, Wahoof-Stice D, LaStayo PC. Comparison of combined aerobic and high-force eccentric resistance exercise with aerobic exercise only for people with type 2 diabetes mellitus. *Phys Ther.* 2008;88(11):1345-1354.