

Exercise Recommendations for Diabetes Prevention and Weight Loss

Obesity is a major contributing factor to the development of metabolic diseases such as impaired glucose metabolism and type 2 diabetes. These metabolic diseases increase the risk significantly for cardiovascular diseases. Individuals who develop diabetes are at increased risk for microvascular complications such as diabetic nerve, eye, and kidney disease.

Lack of exercise is a known contributing factor to the development of these metabolic diseases. Adequate exercise can, therefore, reduce the development of obesity, and exercise can improve blood sugar control and reduce triglyceride levels in patients with diabetes.

Recommendations for Good Health

- 30 minutes of moderate physical exercise a day
- Moderate Intensity Exercise includes activities like brisk walking, vigorous gardening, slow cycling, aerobic dancing, doubles tennis, or hard work around the house
- 10,000 steps a day should burn approximately 500 calories a day
- Step counters, smartphone apps, and wearable devices can help motivate

Recommendations for Weight Loss

To lose one pound of body weight, individuals need to reduce or expend 3,500 calories.

- Increase exercise to 60-90 minutes per day as an adjunct to healthy eating
- Alternate aerobic and resistance exercises
 - o Aerobic activities include walking, running, dancing, swimming, etc.
 - o Resistance training includes weight lifting, bands, push-ups, pull-ups, etc.
- All exercise is activity and all activity is good, but not all activity is exercise. Exercise is a higher level of physical activity that requires exertion

General Exercise Recommendations

- Wear appropriate attire, i.e., footwear - socks, shoes, insoles/orthotics
- Do not exercise at peak hypoglycemic times
- Monitor blood glucose before and during exercise
- Watch for symptoms of hypoglycemia with exercise
- Wear personal identification or medical alert necklace or bracelet
- Carry fast acting carbohydrate, i.e., sucrose and glucose products
- Examine feet after exercise
- Maintain adequate hydration

Tailoring the Exercise Prescription

- Identify various exercises that you like

- Create a plan/routine and stick to it
- Recruit a friend - be accountable to one another
- Exercise periods can be divided up throughout the day

Precautions for Exercise

Cardiovascular Considerations

Stress testing is not encouraged for patients without symptoms, signs, or evidence of significant arterial disease. Exercise tolerance testing (ETT) should be considered in any individual with symptoms or signs of cardiovascular disease such as:

- Pain, discomfort in the chest, neck, arm, arms, or other areas that may be ischemic in nature
- Shortness of breath at rest or with mild exertion
- Dizziness or syncope
- Orthopnea or paroxysmal nocturnal dyspnea
- Palpitations or tachycardia
- Intermittent claudication
- Unusual fatigue or shortness of breath with usual activities
- Peripheral arterial disease

Proliferative Diabetic Retinopathy

Patients with proliferative diabetic retinopathy have abnormal hemodynamic responses of the cerebral and ophthalmic circulation both at rest and with exercise. Vigorous physical activity, especially isometric contractions, produce a significant increase in blood pressure and can accelerate proliferative diabetic retinopathy with significant risk of retinal and vitreous hemorrhage and detachment. Low impact/intensity physical activity is recommended.

References

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