

Physical Activity, Diabetes, Stress and You

Frank Pleban, Ph.D., CHES
Department of Health, Nutrition and Exercise Sciences
North Dakota State University

Health and Physical Activity

Over the past century, Americans have become increasingly sedentary due to the technical advancements of today's world. Ironically, while machines and improvements in transportation and communication have made our lives easier, the decline in our physical activity associated with these advancements plays a large role in the decline of our health.

Regular physical activity has been proven to enhance longevity and the quality of life for people of all ages. Physical fitness and exercise can reduce the risk of diseases such as heart disease, non-insulin dependent diabetes mellitus (type II diabetes), some cancers and obesity. In type II diabetes, a person either produces insufficient amounts of insulin or produces sufficient or even excess insulin; but their cells are insulin resistant. For both categories

of type II diabetics, it is difficult to maintain normal blood glucose (blood sugar) levels.

Additionally, research also shows exercise can promote psychological well-being and reduce feelings of anxiety and depression.

The effects of a few days or weeks of exercise on health risk may not strike a person as significant, however, physical inactivity over a long period of time, say 20 years, adds up. For example, walking for one hour a day for five days burns about 2,000 calories a week. Over a course of a year, a person performing this level of activity would burn about 96,000 calories!

Q. Can physical activity be helpful for those who already have diabetes?

A. YES! Physical fitness and exercise can aid in preventing non-insulin dependent diabetes mellitus as well as aid in the regulation of blood glucose for those already suffering from diabetes.

Ninety percent of all diabetics have type II diabetes or non-insulin dependent diabetes mellitus. Regular exercise for individuals whose cells are resistant to insulin will aid in the regulation of glucose levels in the blood. Diabetics who take insulin shots should exercise with caution so that they do not subject themselves to hypoglycemia (low blood sugar).

Exercise also contributes to the prevention of cardiovascular disease (CVD), which is a leading cause of death in diabetics. More than 80 percent of people with diabetes die from some form of heart and/or blood vessel disease.

In addition, exercise helps in preventing obesity, which also can lead to diabetes. The vast majority of people with non-insulin dependent diabetes mellitus are overweight.

Q. Is stress linked to other health problems?

A. **YES!** Stress is something most people experience. Many of the things people stress out about vary, but the most common things are related to work, money and family.

Symptoms of stress would include headaches, backaches, hot flashes, cold flashes, chest pains, muscles pains and various other ailments.

1. *Common sources of stress:*

Any major life change, whether positive or negative, can be a source of stress (e.g. getting married, death of a family member).

2. *Efficient time management may help to lower stress levels:*

Many relaxation techniques trigger the relaxation response. For example, sitting quietly and meditation are often beneficial methods of diffusing stress.

3. *Techniques for managing stress:*

Family and friends and proper communication skills are ways for people to buffer themselves against the negative effects of stress.

Furthermore, a healthy diet provides energy stores for use in stressful situations, and eating wisely enhances feelings of self-control and self-esteem. Limiting caffeine also is important to stress management.

Counterproductive coping strategies include tobacco, alcohol, drug use and binge eating.

Benefits of Physical Activity and Exercise

The advantages:

- People will feel better and more comfortable about themselves.
- Muscles will become stronger, and will aid in holding our bones in the correct position, preventing falls.
- Being aware of what we eat in traditional American diets, in combination with exercise, can help in maintaining proper weight.
- Reducing body fat by exercise can lower blood pressure.
- People who exercise regularly react with milder physical responses before, during and after exposure to stressful situations.



Q. How can I get started?

- A. 1. **Get your family involved;** if they understand how important your exercise program is for your good health and long life, they will want to be involved also.
2. **Work up to your potential slowly and deliberately.** You will more likely stay with your exercise program if you refrain from producing extremely sore muscles with early over exertion. Slowly increase activity as your body adapts to the exercise program.
3. **Do not get bored;** choose the program that suits your individual needs, goals and desires. The time for exercising should fit into your schedule.
4. A good time factor for exercising is at regular intervals of at least 20 minutes three times per week.

Types Of Physical Activity and Exercise

Aerobic exercise is the most beneficial form of exercise because it strengthens the heart and lungs, lowers blood pressure and increases responses to hormone insulin.

Some examples of aerobic exercise are brisk walking, running, tennis, bicycling and swimming. The simplest form of exercise is walking and can be done either indoors or outdoors, depending on the weather.

Walking and brisk walking for exercise is one of the best overall exercises for American adults. Walking has been found to have a high compliance rate because it can easily be incorporated into a person's busy time schedule, is companionable (others can do it with you), and is much less apt to cause injury.

Q. What would be the right program for me?

A. Choosing the right type and amount of exercise will depend on your personal health goals. In order to achieve a training effect and cardio-respiratory fitness, you'll need to perform aerobic exercise three to five times a week.

- **Walking:** It's becoming one of the most popular forms of exercise today. It requires no special skills or equipment.
- **Brisk Walking:** Offers the same health and fitness benefits as running or jogging but without stress to the joints or risk of injury.

Beginners should start with a 10-minute walk at any speed (five minutes out and five minutes back). During the second week, build up to 15 minutes a day. By the third week, increase to 20 minutes a day. By the fourth week, continue to walk 20 minutes a day, but after warming up with a slow stroll for five minutes, pick up the pace until eventually you are walking briskly (as if you are late for an appointment). End the exercise by slowing your pace back down to a stroll, and remember to drink at least 2 glasses of water.

Contact the Diabetes Center and visit the Fitness Center in Fort Yates

The address and contact number is:

101 North Agency Avenue
Fort Yates, ND 58538
(701) 854-7132



Extreme caution and doctor consultation is advised for diabetic exercisers because of the importance of balancing food, exercise and insulin levels.



It is important that diabetic patients consult with a doctor to develop an exercise program that will meet his or her individual needs.

If you feel you are under serious stress, please contact your doctor. Medication may be required in some cases.

Your Exercise Routine and You

If you are the type who would rather be doing anything but running on the track or lifting weights in the gym, check out these tips for a little added motivation, a change in your exercise mentality or just a new idea to jump-start your workout.

✓ **Make It Different**

Give yourself some change. No one said you had to walk or bike the same route each day. Keep things varied and don't get stuck in a routine!

✓ **Make It Social**

Make some friends with the same exercise interests. Working out with others helps you to stay motivated!

✓ **Make It A Family Affair**

If you enjoy walking or jogging, bring your dog along or strap your child into a stroller!

✓ **Make It Realistic**

Set goals you know you can achieve. Also, choose activities you know you can do well!

✓ **Make New "Workouts"**

Walk to the store. Walk during a break. Designate an "active" day where you don't have to go to the gym, but make a conscious effort to exert some energy!

✓ **Make A Note**

Keeping a journal will help to show improvement and set new goals. If you feel like you've been doing the same thing for a while, set new goals and track your progress!

✓ **Make A Reward**

Whether you exercise for five days in a row, or jog an extra mile, reward yourself if you're happy with your performance!

✓ **Make It Distracting**

Pull up a stationary bike in front of the TV or listen to music. Having other things to concentrate on can help time go by!

✓ **Make It Personal**

There's no limit to the number of chances you get to start an exercise program. If you give up or skip a week, try again. Once you finish that daily workout, you'll be glad you did!



This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under Agreement No. 2003-41520-01561. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

NDSU Extension Service, North Dakota State University of Agriculture and Applied Science, and U.S. Department of Agriculture cooperating. Duane Hauck, Director, Fargo, North Dakota. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. We offer our programs and facilities to all persons regardless of race, color, national origin, religion, sex, disability, age, Vietnam era veterans status, or sexual orientation; and are an equal opportunity employer. This publication will be made available in alternative formats for people with disabilities upon request, (701) 231-7881.