



Journey through Health: Pancreas

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Age-Related Pancreas Changes

Age-related changes in insulin production and body fat can increase the risk of developing type 2 diabetes, which is the most common type of diabetes.

In type 2 diabetes, the body does not make enough insulin or does not respond to insulin in the right way, or both. As a result, with diabetes, high blood glucose levels stay high.

The beta cells in the pancreas produce insulin. Insulin helps glucose enter the body cells to be used for energy.

With age there is some decrease in pancreatic beta cell insulin production. However, excess body fat may have a more important role in the development of type 2 diabetes. Excess body fat can lower the body's ability to use insulin. The pancreatic beta cells make insulin, but the body cells resist the action of insulin. This is called insulin resistance. At first, the beta cells respond by making more insulin to keep blood glucose levels down. Slowly the beta cells begin to wear out and make less insulin, which can increase the risk of type 2 diabetes. Where excess body fat is carried is a factor in insulin resistance. Excess body fat carried in the upper body or abdomen is linked to insulin resistance.

Changes in body composition are common with aging. With age, muscle and bone tend to decrease and body fat tends to increase, particularly in the upper body and abdomen. Increased body fat with age is often due to



decreased calorie needs with aging, decreased physical activity, and hormonal changes.

Diet, Physical Activity, and Pancreas Health

Recommendations to lower the risk of type 2 diabetes are to maintain a healthy weight or moderate weight loss through healthy eating and regular physical activity.

Healthy weight loss focuses on a healthy lifestyle. Advice for those who want to lose weight is to aim for a slow, steady weight loss through:

- Reasonable weight loss goals.
- Healthy eating, not dieting.
- Regular physical activity.

Reasonable weight goals. People who lose weight slow and steady tend to lose more

body fat and less muscle. They are also more likely to keep the weight off. Reasonable weight loss goals are:

- A loss of one to two pounds a week.
- A loss of 10% body weight over 6 months.

Healthy eating, not dieting. The amount of food needed from each USDA Daily Food Plan food group every day is based on gender, age, and physical activity. Healthy eating for weight loss focuses on eating a variety of foods from all the USDA Daily Food Plan food groups with a moderate decrease in calories. A moderate decrease is about 500 calories a day without going below 1,200 calories for females or 1,600 calories for males.

Regular physical activity. People who combine healthy eating with regular physical activity tend to be more successful at losing and keeping weight off. People who include regular physical activity are also more likely to lose body fat and build muscle. Muscle weighs twice as much as fat. As a result, people who include regular physical activity may see a more gradual weight loss, but the loss will be more fat and less muscle.

MyPlate Messages Promoting Pancreas Health

Several of the MyPlate messages can help promote pancreatic health.

Build a Healthy Plate

- Make half your plate fruits and vegetables.
- Switch to skim or 1% milk.
- Make at least half your grains whole.
- Vary your protein choices.

Cut Back on Foods High in Saturated Fats, Added Sugars, and Salt

- Choose foods and drinks with little or no added sugars.
- Eat fewer foods that are high in saturated fats.
 - Select lean cuts of meat or poultry and fat-free or low-fat milk, yogurt, and cheese.

Eat the Right Amount of Calories for You

- Enjoy your food, but eat less.
- Cook more often at home, where you are in control of what is in your food.
- When eating out, choose lower calorie menu options.
- If you drink alcoholic beverages, do so sensibly.

Be Physically Active Your Way

- At least 150 to 300 minutes of moderate-intensity physical activity a week, or 75 to 150 minutes of vigorous-intensity physical activity, or an equivalent combination of moderate and vigorous-intensity physical activity.
 - If you cannot meet this guideline, be as physical active as your abilities and conditions will allow.

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