Prediabetes Basics

Taking Steps to Prevent Type 2 Diabetes
This booklet is designed to give you basic information on how to take action to prevent type 2 diabetes. It does not replace meeting with your healthcare team. For more information, ask your healthcare provider or your local health department about CDC-Recognized National Diabetes Prevention Programs (DPP).

Find a CDC-Recognized Diabetes Prevention Program in your area:

Kentucky Diabetes Resource Directory
https://prd.chfs.ky.gov/KYDiabetesResources/

Two ways to search for DPP resources:

- Diabetes Prevention Program (DPP) Organizations (may have CDC Pending, Preliminary, or Full Recognition)
- Diabetes Prevention Program (DPP) NEW CLASS INFORMATION (updated monthly)
What is Prediabetes?

Prediabetes: a condition in which blood glucose levels are higher than normal and can lead to type 2 diabetes. Approximately 1 out of 3 American adults have prediabetes.

<table>
<thead>
<tr>
<th>Adults Who Are Not Pregnant</th>
<th>Normal Blood Sugar Range</th>
<th>Prediabetes Blood Sugar Range</th>
<th>Diabetes Blood Sugar Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasting Blood Sugar</td>
<td>less than 100 mg/dL</td>
<td>100 - 125 mg/dL</td>
<td>126 mg/dL or higher</td>
</tr>
<tr>
<td>(sometimes called plasma glucose)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 hours after glucose challenge (OGTT)</td>
<td>less than 140 mg/dL</td>
<td>140 - 199 mg/dL</td>
<td>200 mg/dL or higher</td>
</tr>
<tr>
<td>(sometimes called an oral glucose tolerance test)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1C</td>
<td>less than 5.7 %</td>
<td>5.7- 6.4 %</td>
<td>6.5 % or higher</td>
</tr>
<tr>
<td>(blood test showing average blood glucose over 2-3 months)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Risk Factors for Prediabetes

- Being overweight (see BMI pages 12-13)
- 45 years or older
- Have a parent or sibling with type 2 diabetes
- Physically active less than 3 times a week
- Ever had gestational diabetes (diabetes during pregnancy) or gave birth to a baby that weighed more than 9 pounds
- Have polycystic ovary syndrome (PCOS)
- Are African American, Hispanic/Latino American, American Indian, Asian American or Pacific Islander

Most people (9 out of 10) who have prediabetes do not know it!
Could I Have Prediabetes?

Answer the questions and write your score in the box.

How old are you?
- Less than 40 years (0 points)
- 40-49 years (1 point)
- 50-59 years (2 points)
- 60 years or older (3 points)

Are you a man or a woman?
- Man (1 point) Woman (0 points)

If you are a woman, have you ever been diagnosed with gestational diabetes?
- Yes (1 point) No (0 points)

Do you have a mother, father, sister, or brother with diabetes?
- Yes (1 point) No (0 points)

Have you ever been diagnosed with high blood pressure?
- Yes (1 point) No (0 points)

Are you physically active?
- Yes (0 points) No (1 point)

What is your weight status?
(see the chart on the next page)

Add up your score.

Read what your score means.

If you scored 5 or higher:

- You are likely to have prediabetes and are at high risk for type 2 diabetes.
- Only a doctor can tell for sure if you do have type 2 diabetes or prediabetes (a condition that precedes type 2 diabetes in which blood glucose levels are higher than normal).
- Talk to your doctor to see if additional testing is needed.
- Type 2 diabetes is more common in:
  - African Americans
  - Hispanic/Latinos
  - American Indians
  - Asian Americans
  - Pacific Islanders
- Higher body weights increase diabetes risk for everyone.
- Asian Americans are at increased diabetes risk at lower body weights than the general public.
Could I Have Prediabetes?

Prediabetes Risk Test has been adapted from the American Diabetes Association and CDC screening form.

For more information visit: DoIHavePrediabetes.org

<table>
<thead>
<tr>
<th>Height</th>
<th>Weight (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4’ 10”</td>
<td>119-142</td>
</tr>
<tr>
<td>4’ 11”</td>
<td>124-147</td>
</tr>
<tr>
<td>5’ 0”</td>
<td>128-152</td>
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<tr>
<td>5’ 1”</td>
<td>132-157</td>
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<tr>
<td>5’ 2”</td>
<td>136-163</td>
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<tr>
<td>5’ 3”</td>
<td>141-168</td>
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<tr>
<td>5’ 4”</td>
<td>145-173</td>
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<tr>
<td>5’ 5”</td>
<td>150-179</td>
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<td>5’ 6”</td>
<td>155-185</td>
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<td>5’ 7”</td>
<td>159-190</td>
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<tr>
<td>5’ 8”</td>
<td>164-196</td>
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<tr>
<td>5’ 9”</td>
<td>169-202</td>
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<tr>
<td>5’ 10”</td>
<td>174-208</td>
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<tr>
<td>5’ 11”</td>
<td>179-214</td>
</tr>
<tr>
<td>6’ 0”</td>
<td>184-220</td>
</tr>
<tr>
<td>6’ 1”</td>
<td>189-226</td>
</tr>
<tr>
<td>6’ 2”</td>
<td>194-232</td>
</tr>
<tr>
<td>6’ 3”</td>
<td>200-232</td>
</tr>
<tr>
<td>6’ 4”</td>
<td>205-245</td>
</tr>
</tbody>
</table>

What is your weight score?
- You weigh less than the amount in the left column (0 points)
- You weigh more than the amount in the left column
  - (1 Point) (2 Points) (3 Points)

Adapted from Bang et al., Ann Intern Med 151:775-783, 2009. Original algorithm was validated without gestational diabetes as part of the model.
Prediabetes is serious!

- High blood sugar over time causes damage to the entire body from head to toe.
- Prediabetes can lead to type 2 diabetes, heart disease and stroke.

- It is possible to delay or prevent prediabetes from becoming type 2 diabetes.
- Participating in a structured lifestyle change program, like the National Diabetes Prevention Program, can cut the risk of developing diabetes in half!

These programs focus on:

- Lowering body weight by 5 - 7% (if overweight)
- Increasing physical activity to at least 150 minutes per week

Take Action to Prevent Type 2 Diabetes

Eat Healthy
Move More
Manage Weight
Manage Stress
Get Enough Sleep
No Tobacco Use
1. **Find your healthy eating style:** Creating a healthy style means regularly eating a variety of foods to get the nutrients and calories you need. MyPlate’s tips help create your own healthy eating solutions “MyWins.”

2. **Make half your plate fruits and vegetables:** Eating colorful fruits and vegetables is important because they provide vitamins and minerals and most are low in calories.

3. **Focus on whole fruits:** Choose whole fruit; fresh, frozen, dried, or canned in 100 % juice. Enjoy fruit with meals, as snacks, or as dessert.

4. **Vary your veggies:** Try adding fresh, frozen, or canned vegetables to salads, sides, and main dishes. Choose a variety of colorful vegetables prepared in healthful ways: steamed, sautéed, roasted, or raw.

5. **Make half your grains whole grains:** Look for whole grains listed first or second on the ingredient list - try oatmeal, popcorn, whole-grain bread, and brown rice. Limit grain-based desserts and snacks, such as cakes, cookies and pastries.

6. **Move to low-fat or fat-free milk or yogurt:** Choose low-fat or fat-free milk, yogurt, and soy beverages (soymilk) to cut back on saturated fat. Replace sour cream, cream and regular cheese with low-fat yogurt, milk and cheese.

7. **Vary your protein routine:** Mix up your protein foods to include seafood, beans and peas, unsalted nuts and seeds, soy products, eggs, and lean meats and poultry. Try main dishes made with beans or seafood like tuna salad or bean chili.

8. **Drink and eat beverages and food with less sodium, saturated fat, and added sugars:** Use the Nutrition Facts label and ingredients list to limit items high in sodium, saturated fat, and added sugars. Choose vegetable oils instead of butter, and oil-based sauces and dips instead of ones with butter, cream, or cheese.

9. **Drink water instead of sugary drinks:** Water is calorie-free. Regular soda, energy or sports drinks, and other sugar-sweetened drinks contain a lot of calories from added sugars and have few nutrients.

10. **Everything you eat and drink matters:** The right mix of foods can help you be healthier now and into the future. Turn small changes into your, “MyPlate, MyWins.”

Reference: Tip sheet from ChooseMyPlate.gov

- Use MyPlate to build your healthy eating style and maintain it for a lifetime.
- Choose foods and beverages from each MyPlate food group.
- Make sure your choices are limited in sodium, saturated fat, and added sugars.
- Start with small changes to make healthier choices you can enjoy.
To lose weight, most people need to decrease the amount of calories they get from food and beverages and increase the calories used in physical activity. Lowering calorie intake by 500 to 750 calories each day can result in a weight loss of 1 to 1½ pounds a week. Eating plans that have 1,200 - 1,500 calories each day will help most women lose weight safely. Eating plans that have 1,500 - 1,800 calories each day will help most men lose weight safely. Eating plans with less than 800 calories should not be used unless they are monitored by a doctor.

Reference: www.nhlbi.nih.gov
Eat Healthy

What does a serving look like?

- 3 ounces of meat is about the size and thickness of a deck of playing cards.
- 1 oz of cheese is about the size of 4 stacked dice.
- 1/2 cup of ice cream is about the size of a tennis ball.
- 1 cup of veggies is about the size of your fist.
- 1 teaspoon of butter or peanut butter is about the size of the tip of your thumb.
- 1 ounce of nuts or small candies equals one handful.

Need help?

- Meet with a Registered Dietitian Nutritionist (RDN) to discuss your calorie and carbohydrate goals.
- Find a RDN in your area by looking at the Kentucky Diabetes Resource Directory.
  
  https://prd.chfs.ky.gov/KYDiabetesResources/
Move More

Being Active:
- Increases energy
- Helps control cholesterol
- Helps lower stress and anxiety
- Increases strength and range of motion
- Helps keep blood sugars in a healthy range
- Helps control blood pressure
- Improves your mood

Activity Tips:
- Choose an activity you enjoy
- Plan activity in your schedule
- Begin slowly
- Include a warm-up and cool-down each time
- Enjoy activity with a buddy
- Aim for at least 30 minutes of activity most days (activity may be broken into three 10 minute time frames)
- Wear good fitting shoes
- Drink plenty of sugar-free fluids like water
- Avoid an intense workout if it is very hot, humid, smoggy or cold
Make An Activity Plan

What’s your favorite activity that gets you moving?

List some other activities that you enjoy doing.

What obstacle stops you from doing these activities? (Circle as many as you want)
- Not enough time
- Too out of shape
- Too tired
- Not motivated
- Can’t afford it
- My ____________ hurts too much
- Other reason ______________________

What is something you can do to overcome the obstacles that keep you from doing activities you enjoy?

What can you do to get started doing an activity you enjoy or working up to it?

When will you begin doing this?

Write a goal for what you can do to increase activity (include when you will begin to do this). Example: Starting next week, I will walk ten minutes during my lunch break at work Monday through Thursday.
Weight Matters

- Weight loss of 5-7% of weight (if overweight) can delay or prevent type 2 diabetes
- Know your BMI (Body Mass Index)
- Lower calorie intake and increase activity

Tips to help with weight loss:
- Choose smaller servings
- Drink low or no calorie beverages such as water, unsweetened tea, diet drinks or black coffee
- Monitor your weight
- Keep a daily food and activity journal
- Use a smaller plate to make portions look larger

Body Mass Index (BMI)

- Body Mass Index or BMI is calculated by using height and weight measurements.
- It is a tool used to identify weight concerns in adults.
- The higher the number the greater the risk for prediabetes and other health issues.

Find your BMI: Refer to the chart found on the next page or go online to https://www.cdc.gov/healthyweight/assessing/bmi/index.html

<table>
<thead>
<tr>
<th>BMI</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5-24.9</td>
<td>Normal</td>
</tr>
<tr>
<td>25-29.9</td>
<td>Overweight</td>
</tr>
<tr>
<td>Over 30</td>
<td>Obese</td>
</tr>
</tbody>
</table>
What Is My Body Mass Index?

Directions:  
1. Find your height going down the purple column.  
2. Follow that row across from your height to find your weight.  
3. Trace the column down from your weight to locate the BMI number.  

Example: a person 70 inches tall that weighs 195 pounds has a BMI of 28.

<table>
<thead>
<tr>
<th>Height in inches</th>
<th>Weight in pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>91 96 100 105 110 115 119 124 129 134 138 143 148 167 191</td>
</tr>
<tr>
<td>59</td>
<td>94 99 104 109 114 119 124 128 133 138 143 148 153 179 204</td>
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<td>60</td>
<td>97 102 107 112 118 123 128 133 138 143 148 153 158 185 211</td>
</tr>
<tr>
<td>61</td>
<td>100 106 111 116 122 127 132 137 143 148 153 158 185 211 232</td>
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<tr>
<td>62</td>
<td>104 109 115 120 126 131 136 142 147 153 158 164 191 218</td>
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<tr>
<td>63</td>
<td>107 113 118 124 130 135 141 146 152 158 163 169 197 225</td>
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<td>114 120 126 132 138 144 150 156 162 168 174 180 210 240</td>
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<td>118 124 130 136 142 148 155 161 167 173 179 186 216 247</td>
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<td>121 127 134 140 146 153 159 166 172 178 185 191 223 255</td>
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<td>68</td>
<td>125 131 138 144 151 158 164 171 177 184 190 197 230 262</td>
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<td>128 135 142 149 155 162 169 176 182 189 196 203 236 270</td>
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<td>71</td>
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<td>74</td>
<td>148 155 163 171 179 186 194 202 210 218 225 233 272 311</td>
</tr>
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<td>75</td>
<td>152 160 168 176 184 192 200 208 216 224 232 240 279 319</td>
</tr>
<tr>
<td>76</td>
<td>156 164 172 180 189 197 205 213 221 230 238 246 287 328</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>19 20 21 22 23 24 25 26 27 28 29 30 35 40</td>
</tr>
</tbody>
</table>

Normal | Overweight | Obese
**Waist Size**

Fat around the belly can cause a person’s insulin not to work right or be as effective (sometimes called insulin resistance).

People have a higher risk of prediabetes if they have a larger waist measurement:
- Women with a waist more than 35 inches
- Men with a waist more than 40 inches

How to measure your waist size:
- Use a soft tape measure
- Pull up your shirt to reveal the stomach
- Press fingers into one side of your waist until you feel your hip bones
- Find the top of the hip bone
- Place tape measure horizontal on hip bone and wrap around waist
- Measure your waist just after you breathe out
Manage Stress

- Everyone has stress in their lives.
- The way we cope physically, mentally, and emotionally to stress has an impact on our health.
- High levels of stress over long periods of time (sometimes called chronic stress) increases levels of cortisol (a stress hormone the body makes).
- When cortisol levels remain high, it causes higher insulin resistance (insulin does not work right or as effectively) which is a risk factor in prediabetes, high blood pressure and heart disease.

Positive Ways to Deal With Stress

Circle what works for you:

- Listen to music
- Play with a pet
- Laugh
- Cry
- Go out with a friend
- Take a bath or shower
- Paint
- Craft
- Pray or go to church
- Being active
- Be outdoors
- Discuss situations with someone
- Gardening
- Home repair
- Practicing deep breathing
- Meditation
- Muscle relaxation
- Read
- Write
Get Plenty of Sleep

- Sleep problems, especially sleep apnea contribute to high levels of cortisol (stress hormone) and the body not using insulin effectively (insulin resistance).
- Obstructive sleep apnea is a condition in which the airway becomes blocked during sleep.
- Sleep studies are used to diagnose sleep apnea.
- People who have sleep apnea have increased risk for prediabetes and high blood pressure.

<table>
<thead>
<tr>
<th>Age</th>
<th>Hours Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth-3 months</td>
<td>14-17 hours each day</td>
</tr>
<tr>
<td>4-11 months</td>
<td>12-15 hours each day</td>
</tr>
<tr>
<td>1-2 years old</td>
<td>11-14 hours each day</td>
</tr>
<tr>
<td>3-5 years old</td>
<td>10-13 hours each day</td>
</tr>
<tr>
<td>6-13 years old</td>
<td>9-11 hours each day</td>
</tr>
<tr>
<td>14-17 years old</td>
<td>8-10 hours each day</td>
</tr>
<tr>
<td>18-25 years old</td>
<td>7-9 hours each day</td>
</tr>
<tr>
<td>26-64 years old</td>
<td>7-9 hours each day</td>
</tr>
<tr>
<td>65 years and older</td>
<td>7-8 hours each day</td>
</tr>
</tbody>
</table>

Reference: sleephealthjournal.org

**Signs of sleep apnea include**: reduced or absent breathing, loud snoring, gasping for air during sleep.

**Symptoms include**: excessive daytime sleepiness and fatigue, decreased attention, headaches, and frequent waking throughout the night.

**Tips for a Good Night's Sleep:**

- Go to bed at the same time each night, and rise at the same time each morning.
- Sleep in a quiet, dark, and relaxing environment, neither too hot or too cold.
- Make your bed comfortable and use it for sleeping and not for reading, watching TV, using a cell phone or tablet, or listening to music.
- Sleep in silence, remove TVs and music to sleep without distractions.
- Get regular activity, but avoid physical activity close to bedtime.
- Avoid large meals before bedtime.
- Avoid caffeine, especially near bedtime.
No Tobacco

- Smokers are twice as likely to develop type 2 diabetes than people who have never smoked.
- Heavy smokers are 5 times more likely to develop type 2 diabetes than nonsmokers.
- Smoking is linked with higher levels of belly fat.
- Tobacco use can cause a person’s insulin to not work right (insulin resistance).
- Tobacco users have a harder time controlling their blood sugar levels because of insulin resistance (insulin does not work right).
- The benefits of quitting tobacco use are dramatic and help with lowering risk for prediabetes:
  - Better blood glucose means lower average blood sugar (A1C) over time
  - Better circulation
  - Less resistance to insulin
  - Lower blood pressure
  - Lower cholesterol levels

Find Help to Quit

Quit Now Kentucky ➔ 1-800-Quit-Now
1-800-784-8669

Available Support:
- Tobacco Cessation Programs
- Telephone Support
- Email Support
- Texting Support
- In-person Meetings
The Good News!

- It is possible to reverse prediabetes with small lifestyle changes.
- These changes can help you live a longer and healthier life.
- The Centers for Disease Control and Prevention (CDC’s) National Diabetes Prevention Program (DPP) is a structured lifestyle change program proven to reduce the risk of developing type 2 diabetes by half in those with prediabetes.

CDC’s National Diabetes Prevention Program

- **Lifestyle Change Program**
- **Taught by a trained lifestyle coach**
- **A program that provides an entire year of support and education by meeting weekly for 16 weeks then at least monthly for the rest of the year**

To learn more about making lifestyle changes that can lower your risk of developing type 2 diabetes, visit DoIHavePrediabetes.org

Find a CDC-Recognized Diabetes Prevention Program in your area:

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Two ways to search for DPP resources:

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- Diabetes Prevention Program (DPP) NEW CLASS INFORMATION (updated monthly)
References and Resources

- Academy of Nutrition & Dietetics
  www.eatright.org

- American Association of Diabetes Educators
  www.diabeteseducator.org

- American Diabetes Association
  www.diabetes.org

- Centers for Disease Control and Prevention
  www.cdc.gov/diabetes

- DoIH avePrediabetes.org

- Kentucky Diabetes Network, Inc.
  www.kydiabetes.net

- Kentucky Diabetes Prevention and Control Program
  https://chfs.ky.gov/agencies/dph/dpq/ cdpb/Pages/diabetes.aspx

- Kentucky Diabetes Resource Directory
  https://prd.chfs.ky.gov/KyDiabetesResources

- National Diabetes Education Program
  www.ndep.nih.gov

- National Sleep Foundation
  sleepfoundation.org

- National Institute of Health
  https://www.niddk.nih.gov/bwp (Body Weight Planner)
  https://www.nhlbi.nih.gov

- United States Department of Agriculture (USDA)
  ChooseMyPlate.gov
  https://www.nutrition.gov/