

Quality Report Card



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DIABETES CARE

Prediabetes – A Precursor to Type 2 Diabetes

Before a person develops type 2 diabetes, it is likely the person will experience prediabetes – a problem with processing sugar that leads to higher than normal blood glucose levels, but not yet high enough to be diagnosed as diabetes. If discovered in time, the progression to type 2 diabetes can be delayed and prediabetes can be reversed by making healthy lifestyle choices. Left unmanaged, prediabetes can lead to other serious complications, in addition to type 2 diabetes, including heart disease, stroke, kidney and nerve damage.

Prediabetes occurs when the body accumulates sugar (glucose) in the bloodstream. Most glucose enters the body as food is digested. The pancreas – a gland located behind the stomach – secretes the hormone insulin into the bloodstream to move the sugar to the body's cells to be used as fuel. This process lowers the blood sugar level. When the pancreas does not make enough insulin or the cells become resistant to the action of insulin, the sugar accumulates in the bloodstream instead of fueling cells.

While there is no exact cause for prediabetes, it is believed family history and genetics play an important role in the development of the disease; however, anyone can develop problems with processing sugar. Being sedentary and overweight have also been linked to developing prediabetes. The risk of insulin resistance increases when there is more fatty tissue around the abdomen.

Men with waists larger than 40 inches and women with waists larger than 35 inches are at a higher risk for developing prediabetes. Those who eat red or processed meats and drink sugar-sweetened beverages often also increase the risk of insulin resistance. Although diabetes can develop at any age, the risk of prediabetes increases after age 45.

There are generally no signs or symptoms of prediabetes. Some may experience darkened patches of skin on certain parts of the body including the neck, armpits, knees and knuckles. A patient usually finds out they have prediabetes through testing. A primary care physician can order a number of blood tests to check for average blood glucose levels to determine if there is too much sugar in the bloodstream. It is important to see a doctor if symptoms of type 2 diabetes begin to develop. The symptoms include:

- Increased thirst
- Frequent urination
- Fatigue
- Blurred vision

A prediabetes diagnosis does not mean a person will develop type 2 diabetes and there is usually no need to see an Endocrinologist – a physician that specializes in hormonal conditions including diabetes. Prediabetes is reversible. A physician will likely suggest healthy lifestyle

choices to bring the blood sugar level back to normal. Eating healthy foods – low in fat, carbohydrates and calories and high in fiber – can help reduce the amount of glucose entering the body. Exercising for 30 to 60 minutes most days of the week will help the body use the sugar in the cells. Finally, losing 5 to 10 percent of body weight can reduce the risk of cells becoming insulin resistant.

Healthy lifestyle changes generally are sufficient to reverse prediabetes; however, medication may be needed to help decrease sugar levels in the blood. The most recommended medication for prediabetes is metformin (Glucophage). Metformin works to control the glucose released by the liver and increase the cells sensitivity to insulin. Other popular medications for diabetes are generally not needed, however, medications to control cholesterol and high blood pressure also might be prescribed.



Patient Story – Cindy Cunningham



Cindy Cunningham has a significant history of diabetes in her family – her mother, father and two sisters all suffer from the disease. Cindy was diagnosed with Type 2 diabetes in 2002 and has struggled with her diet and medications over the years. “I often felt as though I was on a roller coaster,” she explained. Numerous dietitians suggested the same standard, strict diabetic diet. However, Cindy’s case is unique. She also suffers from a condition that affects the stomach muscles and prevents proper stomach emptying. Her body digests and absorbs food differently and at a slower rate, making a strict diabetic diet that includes salads and raw vegetables difficult for her to process. In spite of this, Cindy has made significant progress in managing her diabetes with the help of the Licking Memorial Hospital (LMH) Medication Therapy Clinic.

Cindy’s family practice physician referred her to an endocrinologist in Columbus, but the Thornville resident searched for care closer to home. She located I-Tsyr Shaw, M.D., of Licking Memorial Endocrinology, who ultimately directed her to the Medication Therapy Clinic. “The staff at the Clinic listened right away, taking into account all of my conditions,” Cindy noted. “I love them all. They are sweet, nice, helpful and have made a significant difference in my life.”

Upon referral to the Medication Therapy Clinic in December 2016, Cindy’s A1C number was 11.6. She had become more compliant with her diabetes regimen, but was seeking better control of her diabetes. The staff reviewed Cindy’s medications as well as blood sugar testing and injection techniques. “They helped me download the Glooko app on my smartphone and taught me how to use it,” Cindy said. “I can enter insulin doses, use the food data base, and upload my meter readings.” Glooko helps patients understand how certain foods, activities, times of the day, and medication

doses affect blood glucose, allowing for easier diabetes management. The app also shows patients what time of the day they are going high or low, which days of the week are the best days, and how blood glucose levels compare to previous time periods. The app works by syncing all of the data from a glucometer, insulin pump and/or continuous glucose monitor, then tracking the medication, carbohydrates, and lifestyle data, and finally creating easy-to-read graphs and charts for the user. Cindy successfully utilized the app to enter valuable information and then uploaded it to the Medication Therapy Clinic every two weeks for review. Medical staff was able to contact her in between visits to make appropriate insulin dose adjustments.

To help control her blood sugar level, Cindy takes a long-acting insulin once a day and insulin to cover her meals – a total of four injections per day. The insulin that she takes to cover her meals is a set dose of insulin and did not provide her with flexibility in changing her eating patterns. With set dose insulin prior to meals, it is important for patients to be consistent with the portion size and the carbohydrate content of the food on the plate. Cindy’s readings tended to vary after eating and this was because she was not always consistent with her selections and portions. To provide Cindy a little more flexibility with her eating pattern and better control of her diabetes, she met with the Clinic dietitian to discuss learning about carbohydrate counting. The dietitian recommended that she complete a three-day food log and list the carbohydrate content of the foods she was eating. Upon review of the food and blood sugar logs, the Medication Therapy Clinic pharmacist assessed that Cindy was able to accurately count the carbohydrate content. The logs provided the necessary information to calculate an insulin to carbohydrate ratio.

“We adjusted Cindy’s insulin dosing regimen so she could give an appropriate amount of insulin to cover the carbohydrates included in her meals,” explained Danette Warner, Medication Therapy Clinic pharmacist. “The new regimen gave Cindy more flexibility to adjust her insulin based on the quantity and type of food that she was eating each meal. In just one week her

blood sugar level decreased and she improved her blood sugar control.”

Cindy was amazed at how her numbers had leveled out as a result of the adjustment. By April, Cindy had lowered her A1C to 6.6. Her ultimate goal is to reach a level of at least 5.6, which is non-diabetic. The tremendous improvement made her a good candidate for an insulin pump, especially in combination with her stomach condition. The clinic pharmacist and dietitian introduced the idea of converting to insulin pump therapy. Cindy was interested and wanted to consult with Dr. Shaw, who recommended she establish use of an insulin pump. Cindy’s numbers have continued to improve with the use of the pump. She is adjusting to changing the infusion set of the pump and making good progress, experiencing no episodes of low blood sugar.

Cindy still has to continue to check her blood sugar three to four times a day and enter her carbs into her pump so that the pump can give her insulin to cover her meals. Since Cindy now has better blood sugar control, she is feeling better and has more energy. “I do not receive as many insulin shots while using the pump. It allows me more freedom and certainly makes my condition easier to manage. I am less stressed and emotional, finally off the roller coaster,” Cindy said. The insulin pump also eases the cost she incurs from diabetes. Visiting the Medication Therapy Clinic weekly at first, Cindy has gradually reduced visits and now keeps regular appointments every three weeks. No adjustments of her numbers have been necessary since she began using the pump, which is uncommon and evidence of her good routine.

“Going to the Medication Therapy Clinic has made me more knowledgeable about my medications and aware of how such work together. It also has helped me more comfortably manage my diet,” Cindy said. She added that she does not get as hungry due to complications with her gastroparesis because she is eating softer, more easily digestible foods. “The Clinic staff is very attentive to me as a person, not just a patient. Danette contacts me in between appointments and takes a personal interest

Diabetes Care – How do we compare?

At Licking Memorial Health Systems (LMHS), we take pride in the care we provide. To monitor the quality of that care, we track specific quality measures and compare them to benchmark measures. Then, we publish them so you can draw your own conclusions regarding your healthcare choices.

1. Much of the care diabetes patients receive takes place in the outpatient or physician office setting. The physician offices of Licking Memorial Health Professionals (LMHP) measure the most critical indicators for diabetes.

	LMHP 2014	LMHP 2015	LMHP 2016	National
LMHP diabetes patients receiving eye exam	66%	63%	59%	59% ⁽¹⁾
LMHP diabetes patients having HbA1C test	96%	96%	95%	90% ⁽¹⁾
				LMHP Goal
LMHP diabetes patients having lipid profile	93%	93%	91%	90%
LMHP diabetes patients having microalbuminuria test	90%	88%	86%	85%
				National
LMHP diabetes patients having foot exam	90%	89%	85%	86% ⁽¹⁾

2. While having the testing done is important, the test results (or outcomes) indicate how well the physician, in collaboration with the patient, is managing the diabetes. The hemoglobin A1c (HbA1c) test is a simple lab test that shows the average amount of sugar (also called glucose) that has been in a person's blood over an extended period of time.

	LMHP 2014	LMHP 2015	LMHP 2016	National ⁽¹⁾
LMHP diabetes patients with HbA1C less than or equal to 7%	58%	57%	56%	36%
LMHP diabetes patients with HbA1C less than or equal to 8%	75%	77%	76%	57%

3. People with diabetes are at high risk for heart disease. An elevated LDL (“bad”) cholesterol test reveals if an individual has unhealthy fat levels, which increase the risk for heart disease – a very serious complication of diabetes.

	LMHP 2014	LMHP 2015	LMHP 2016	LMHP Goal
LMHP diabetes patients with LDL less than or equal to 100 mg/dL	69%	67%	65%	50%

4. The Community Case Management (CCM) program at Licking Memorial Hospital (LMH) provides services to people in the community with diabetes. The American Diabetes Association recommends that a person with diabetes should have an HbA1c blood test at least every six months to monitor glucose levels. LMH staff members work closely with patients and their physicians to ensure that this test is performed as recommended in order to manage each patient's condition better.

	LMH 2014	LMH 2015	LMH 2016	Goal
CCM diabetes patients who obtained an HbA1C test	99%	100%	100%	Greater than 80%

5. Licking Memorial Hospital offers special classes and services for people with diabetes. Certified diabetes educators, registered nurses, dietitians and pharmacists provide one-on-one education to patients and work closely with them to set their own meaningful personal goals for improving their health and well-being.

	LMH July 1, 2013 thru June 30, 2014	LMH July 1, 2014 thru June 30, 2015	LMH July 1, 2015 thru June 30, 2016	Goal
Goals met by diabetes education graduates – within six months	91%	94%	93%	Greater than or equal to 80%

Data Footnotes: (1) Average of reported Commercial Medicare and Medicaid/HEDIS measures.



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in my life.” Cindy enjoys the relaxed and comfortable atmosphere. “I feel like I am talking with friends when I am there.”

Last year, Cindy also was diagnosed with rheumatoid arthritis. She credits Dr. Shaw with helping her deal with this new diagnosis as well. “She took a lot into account to determine the best course of treatment for me when adding in new medications,” she remarked.

Cindy is very active in the community. She attends More Life Church and volunteers extensively at various church events, including the recent Mega Sports Camp at The Grove. A proud mother of five and grandmother of 12, two of whom are autistic, she has a great passion for helping

children with special needs. Cindy and her German classic pony, Swiss Miss, participate in the Goodwill Pony Express Program. Open to toddlers through age 22, it is designed to assist special needs children with dexterity skills. “The program is incredibly fulfilling – good therapy for the children as well as myself,” she shared. A supporter of the local area Humane Society, she regularly donates toys and formula for puppies. Cindy also just recently started back to school and is pursuing a master’s degree in teaching with a special intervention focus. She hopes to graduate in 2019.

The Medication Therapy Clinic moved from the Hospital to 88 McMillen Drive in May 2017. The Clinic has been working with patients since 2003 to assist with education

and management of the use of medications. The staff includes pharmacists, technicians, dietitians and nurses focused on teaching correct dosing, the importance of monitoring patient condition and even lifestyle changes needed to sustain good health. Currently, more than 1,300 patients utilize the services on a monthly basis.

The two board-certified physicians at Licking Memorial Endocrinology provide care for patients with glandular disorders, such as diabetes, metabolic disorders, thyroid disease, pituitary and adrenal abnormalities and osteoporosis. Dr. Shaw and Preethi Krishnan, M.D., are accepting new patients with a physician’s referral. To make an appointment, please call Dr. Shaw at (220) 564-1740, or Dr. Krishnan at (220) 564-7950.

Health Tips – Reading Food Labels for Good Blood Sugar Control

The U.S. Food and Drug Administration has set standards for the disclosure of nutrition facts on commercially prepared food products. This labelling is vital to helping patients with diabetes make good food choices for optimum blood glucose control, but many individuals are confused by the information. Here are some helpful tips to understanding food label information:

Serving size – Be sure to consider the serving size when calculating the product’s nutritional value. The manufacturer’s serving size of a food product may not match the amount that you consume. For example, a popular box of stuffing mix reports that a ½ cup serving contains 110 calories, but you will consume 220 calories if you up-size the serving portion to 1 full cup.

Servings per package – Some product packaging is confusing. For example, one brand of condensed chicken with rice soup reports that a serving contains 14g of total carbohydrates; however, the label states that the can holds 2.5 servings. If you eat the entire can’s contents, you will be consuming 35g of carbohydrates.

The RDAs are based on a 2,000-calorie diet, so you may need to adjust them if you consume more or less than 2,000 calories per day. You can still use the label’s PDV as a guide to determine whether a food product is high or low in specific nutrients. Please note, the RDA and PDV for carbohydrates that are stated on a product’s label may not be applicable to patients with diabetes who limit carbohydrates as part of their blood sugar control strategy.

Total carbohydrates – This item is especially important to patients who are counting carbohydrates to control their blood glucose levels. The total carbohydrates calculation includes all types of carbohydrates – sugar, sugar alcohol, complex carbohydrates, and fiber.

Percent daily values (PDV) – This number shows how much a serving of the food product will fulfill your body’s nutritional requirements, which are called recommended daily allowances (RDA). For example, a 10-piece chicken nuggets serving from a popular fast food restaurant contains 30g of total fat, which is 23 percent (nearly one-fourth) of the 65g of fat that are recommended for the entire day.



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Visit us at www.LMHealth.org.

Please take a few minutes to read this month’s report on **Diabetes Care**. You’ll soon discover why Licking Memorial Hospital is measurably different ... for your health!

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