

Our Mission

The Cray Diabetes Self-Management Center supports the University of Kansas Health System's Endocrinology and Internal Medicine Departments for comprehensive diabetes care. The diabetes center is founded on Bud and Sally Cray's beliefs that diabetes treatment should not be hurried and should be based on mutual conversations, listening and problem solving. These beliefs continue to be the driving model for patient care within the program. Patients have opportunities to visit with diabetes educators, attend support groups and take group classes in addition to their regular doctor and advanced practice professional visits.

For more information contact us at Craydiabetes@kumc.edu or call 913-588-6877.



Diabetes Technology and Trends

By Anna Newby, Certified Diabetes Care and Education Specialist

Have you ever felt frustrated with how hard it can be to know the carbohydrates in foods when you don't have a nutrition facts label? Would you like a digital diabetes coach to help you make sense of your blood sugars? There are many wonderful tools in the world of diabetes technology to help make life with diabetes, especially carbohydrate counting and meal tracking, easier. Here is a list of free apps can help:

Carbohydrate Counting and Tracking Apps:

- **Carb Manager** – Easily look up the carbohydrates for both home-cooked foods, restaurant foods and other foods that come without nutrition facts labels.
- **Calorie King** – Easily search foods to get a carbohydrate estimate as well as a nutrition facts label based on your portion size. Many restaurant-specific foods are located in their database. Use the search bar at the top to directly search specific food brands or restaurants.
- **My Fitness Pal** – This is a great app if you want to keep track of many different nutrition parameters, from carbohydrate to calories to vitamins and minerals. This app may not be appropriate for those with a history of eating disorders, disordered eating or compulsive nutrition tracking.
- **Nutritionix** - The largest verified database of nutrition information; has data from over 25,000 restaurants.

Personal Trackers and Educational Apps:

- **MySugr** – This app helps you count and track carbohydrates, connects via Bluetooth to Accucheck blood sugar meters, and can help you calculate your insulin dose insulin. It also helps you identify patterns in glucose readings and potential problem areas.
- **Glucose Buddy** – This app can be used with blood sugar meters to help keep track of blood sugars, carbohydrates and other lifestyle habits. This app can also act like a diabetic coach, helping you recognize patterns and problem areas and suggesting adjustments to fix them.

Recipe and Meal Plan Building Apps: These wonderful apps act like your personal nutrition and grocery shopping organizers. Either add your own recipes or use their pre-populated recipes and meal plans to create a week of meals complete with nutrition information and a grocery store list.

- **Paprika:** (Apple/Android: \$4.99)
- **Mealime** (Apple/Android: free; pro-version \$2.99/mo)



Endocrinology Corner

By Kyle Myers, MD

GLP-1 agonists, Body Composition, and the Role of Counseling Patients on the Importance of Resistance Training

Glucose regulation and insulin sensitivity are largely dependent upon skeletal muscle. After consumption of a meal, around two-thirds of ingested glucose is taken up by skeletal muscle via an insulin-dependent mechanism.

Sarcopenia is a condition characterized by loss of skeletal muscle mass and function. Given the role of skeletal muscle in glucose homeostasis, sarcopenia is a clear contributor to the onset or exacerbation of diabetes and insulin resistance. Sarcopenic obesity, the loss of muscle mass in tandem with increasing adiposity, predisposes patients to accidental falls, hospitalizations, and frailty.¹

Without question, our practice of delivering diabetes care to patients has been fundamentally changed by the advent of GLP-1 receptor agonists (RAs). Clearly, this is a change for the better – GLP-1 RAs reduce hyperglycemia in a glucose-dependent manner, improve cardiovascular and diabetic-kidney disease outcomes in type 2 diabetes, and are profoundly effective in promoting and maintaining weight loss.

Randomized control trials for semaglutide and weight loss primarily evaluated change in body weight from baseline. Body composition (total fat, total lean body mass, and visceral fat mass) was evaluated as a secondary endpoint, where it was shown that total lean body mass decreased in absolute terms, while the proportion of lean body mass relative to total body mass increased with semaglutide. Similar findings are shown for other GLP-1 RAs.

A 2022 prospective study by Volpe, et.al looking at once-weekly semaglutide-associated body composition changes showed reductions in lean body mass and skeletal muscle but suggested that when decline in lean and skeletal muscle mass does not exceed 40% to total body weight lost, this could be considered a healthy result overall.² Other studies of the effects of GLP-1s RAs on muscle mass have shown conflicting data, and overall, the current state of literature suggests relatively inconsistent results.

Certainly, when patients are counseled on weight loss with GLP-1 RAs, the total, rather than type, of weight lost is frequently the topic of conversation, and it is quite clear that such weight loss is associated with profound benefits for diabetes control and CVD risk reduction. What long-term implications the change in body composition will have for patients has yet to be seen, and more long-term studies are needed to address this.

Current ADA guidelines for physical activity mirror many other institutions – 150 minutes of moderate-intensity of exercise per week. However, all exercise is not created equal, and many studies have attempted to define an optimal regimen. Regardless of regimen, it is logical that a structured resistance training regimen 2-3 days per week is crucial, particularly for diabetic patients taking GLP-1 RA therapy.

Source:

¹ Ozeki Y, Masaki T, Kamata A, Miyamoto S, Yoshida Y, Okamoto M, Gotoh K, Shibata H. The Effectiveness of GLP-1 Receptor Agonist Semaglutide on Body Composition in Elderly Obese Diabetic Patients: A Pilot Study. *Medicines (Basel)*. 2022 Sep 16;9(9):47. doi: 10.3390/medicines9090047. PMID: 36135828; PMCID: PMC9502467.

² Volpe S, Lisco G, Racaniello D, Fanelli M, Colaianni V, Vozza A, Triggiani V, Sabbà C, Tortorella C, De Pergola G, Piazzolla G. Once-Weekly Semaglutide Induces an Early Improvement in Body Composition in Patients with Type 2 Diabetes: A 26-Week Prospective Real-Life Study. *Nutrients*. 2022 Jun 10;14(12):2414. doi: 10.3390/nu14122414. PMID: 35745144; PMCID: PMC9227575.

<https://diabetes.org/health-wellness/fitness/weekly-exercise-targets>



Cray Expert Advice: Diabetes Awareness Month

By Kayla Graves, Certified Diabetes Care and Education Specialist

November is Diabetes Awareness Month, a time when communities across the country seek to bring attention to diabetes. This year's focus is on preventing diabetes health problems.

Diabetes is a disease that occurs when your blood glucose, also called blood sugar, is too high. It affects ~ 37 million Americans and many individuals with blood sugar abnormalities are not even aware they have a problem. It is estimated that ~23% of those with diabetes are undiagnosed.

Long-term, elevated blood sugars can damage the eyes, kidneys, nerves, heart, feet and teeth. But there's also good news: Taking charge of your health may help you prevent diabetes complications.

Getting yearly lab work completed can be a helpful tool to assess where your blood sugar is at. Two labs that are simple to assess are hemoglobin A1C (HbA1c) and blood sugar (fasting or non-fasting). Your HbA1c is an average of your blood sugar over the last 3 months.

Below is a table that breaks down normal HbA1c and blood sugar targets, pre-diabetes range and diabetes range. Individuals with diabetes and prediabetes have higher A1c as well as fasting and non-fasting glucose levels than people without the conditions. Knowing where your levels are can help to empower you to make changes, if needed, and stay healthy for the long-term.

BLOOD GLUCOSE TEST	NORMAL	PREDIABETES	DIABETES
A1C Level	< 5.7%	5.7% to 6.4%	≥ 6.5%
Fasting Glucose Level	< 100 mg/dL	100 to 125 mg/dL	≥ 126 mg/dL
Glucose Tolerance Test	< 140 mg/dL	140 to 199 mg/dL	≥ 200 mg/dL

*Random plasma glucose ≥ 200 mg/dL with classic symptoms of diabetes is also diagnostic of DM

Sources:

- Diabetes Statistics: Facts & Latest Data in the US (2023 Update) - CFAH
- National Diabetes Statistics Report | Diabetes | CDC

Services Available:

- Medical Visits (MD, PA, NP)
- Individual Diabetes Education
- Group Diabetes Education Classes
- Telehealth options available

Locations:

- KUMC Main Campus - 2000 Olathe Blvd, Kansas City, KS 66160
- College Square Medical Pavilion - 12000 W 110th, Overland Park, KS 66210
- Englewood Center - 101 NW Englewood Rd, Gladstone, MO 64118



Let's Move More

By Aubrey Hall, Certified Diabetes Care and Education Specialist

With colder temperatures, slippery conditions, and fewer daylight hours, the winter months can be a challenging time to stay active. However, routine physical activity is an important factor to improve or maintain blood sugar control. Don't let the winter challenges get in the way of being active. Be creative and think outside the box on ways to be active during the winter season.

- Monitor the weather forecast and plan ahead. Watch for days where outdoor walks or activity are manageable with the weather conditions.
- When being active outdoors, dress in layers. By wearing several layers of comfortable clothing, items can be removed easily as you heat up.
- Look for free or low-cost exercise videos online to keep you moving indoors. Find videos that match your interests, abilities, and fitness level.
- Tap into health benefits while completing your to-do list. Take advantage of indoor household activities such as vacuuming, sweeping, and cleaning.
- Utilize stairs in your home. Walking up and down stairs can be a great workout.
- Be active with items around the house. Use full water bottles or canned goods for strength training.
- Find creative ways to be active while staying inside. Incorporate movement with activities such as walking or marching in place, jumping jacks, or jump rope.

Heathy Eating

By Pattie Lueyot, Certified Diabetes Care and Education Specialist

Gluten Free Brownies

These brownies are not only gluten free and high in protein and fiber from black bean and eggs, but also gooey and delicious! Visit <https://www.cookingwithcray.com> for how to make this delicious recipe and more!



Ingredients:

- 1 can (15 oz) no salt added or low sodium black beans, rinsed and drained
- ½ C. dark chocolate chips (at least 60% cacao), divided in half
- 3 Tb of coconut oil or avocado oil
- 3 large eggs, room temperature
- ½ C. maple syrup or honey
- ½ C. baking cocoa powder(unsweetened)
- 1 tsp vanilla extract
- ½ tsp baking powder
- 1/8 tsp salt

Makes 12 Servings, Serving Size: 1 Medium Cookie
Nutrition Factor Per 1 serving: Calories 177, Fat 9g, Carbohydrates 21g, Fiber 3g, Protein 5g

Adapted from TaseofHome's Black Bean Brownies

Directions:

1. Place beans, 1/4 cup chocolate chips and oil in a food processor; cover and process until blended.
2. Add eggs, brown sugar, cocoa, vanilla, baking powder and salt, cover and process until smooth.
3. Transfer to a parchment-lined 8-in. square baking pan. Sprinkle with remaining 1/4 cup chocolate chips.
4. Bake at 350° for 20-25 minutes or until a toothpick inserted in center comes out clean. Cool on a wire rack.
5. Cut into bars.



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