

# FASTING WITH DIABETES



Diabetes care and education specialists have the opportunity to help people with diabetes who choose to fast do so in a safe and healthy way. In this handout you'll find general considerations when working with clients.

## **Fasting and the AADE7 Self-Care Behaviors®**

Fasting is defined as the total or partial abstention from all foods and drinks or the exclusion of certain foods or food groups. Diabetes care and education specialists can guide people with diabetes to fast in a healthy and safe manner by assessing all elements of the AADE7: healthy eating, being active, medication taking, coping, monitoring, risk reduction and problem-solving. Prior to planning a fast, meet with the individual to establish ways to benefit from fasting and reduce risk by discussing all elements of the AADE7.

## **Why do people with diabetes fast?**

Many people with diabetes choose to fast as part of their religious beliefs, for spiritual reasons and for prayer, reflection and purification. Most people fast overnight while sleeping or for a set number of hours prior to a blood test or medical procedure. Health fads often include a cleanse or detox involving a period of fasting. Sometimes fasting is unintentional, such as lack of appetite, missing meals related to food insecurity and other reasons. Some people with diabetes choose to fast believing it will provide metabolic control, weight management, symptom management or for psychosocial reasons.

Intermittent fasting is a growing area of research involving alterations in the hours of the day that an individual is consuming meals with set times for eating and fasting. This can be accomplished in different ways, for example fasting for 18-20 hours and only eating during a 4-6 hour window of the day, fasting for 16-20 hours and only eating 4-8 hours per day, alternate day fasting or consecutive day fasting. Initial research has shown mixed results in terms of the impact of fasting on glucose and weight loss, and more research is needed.

## Using the AADE7 Self-Care Behaviors Framework to Assess Fasting Practices and Safety



**HEALTHY EATING:** Evaluate previous eating habits, reasons for fasting, type of fast (specific foods or drinks or complete abstinence from food and drink), relationship with food, history of disordered eating habits, and other applicable priorities. Evaluate previous attempts in weight reduction in terms of what worked, what didn't work and how it impacted diabetes care. Screen for food insecurity and disordered eating habits.

**BEING ACTIVE:** Evaluate how fasting will impact the ability to maintain physical activity and metabolic management, and other individualized priorities.

**MONITORING:** Review and assess glucose monitoring in general and potentially differing needs during fasting hypo/hyperglycemic management and other individualized priorities.

**TAKING MEDICATION:** Assess short vs long-term medication/insulin adjustments before starting fast, during vs post fasting, and other individualized priorities.

**PROBLEM-SOLVING:** Address when it may be necessary to break a fast, symptom management and other individualized priorities.

**REDUCING RISK:** Evaluate past A1C, recent and past glucose levels, ketoacidosis, renal insufficiency and macrovascular complications. Consider food insecurity and financial risk factors, for example, a parent fasting in order to save enough food for children.

**HEALTHY COPING:** Assess support system during the fast, review how the fasting will impact self-management of diabetes, consider mood changes that can occur with fasting and other individualized priorities.



## ADDITIONAL ASSESSMENT QUESTIONS

What worked or did not work if the person with diabetes has fasted previously?

What do they anticipate to be the biggest challenge in fasting?

## Potential Interventions

- Reinforce the importance of reviewing fasting strategy with the healthcare team (primary care provider, pharmacist, dietitian, nurse, other specialists, etc).
- Review the typical eating and hunger patterns with the individual to assess key times or situations that may pose challenges (times of day, family meals, group events, etc).
- Review hunger symptoms and glucose patterns and trends before the actual fasting event; reflect and adjust accordingly.
- Review glucose patterns to be consistent over a couple of recent weeks along with eating and physical activity in preparation for adjustments that may be necessary during fast.
- Consider a trial fast for different portions of the day to monitor and track glucose trends closely. Check glucose prior to a fast, if any symptoms occur during a fast and every 2-3 hours during a trial fast. Review these trends based on timing in the day and assess for high or low glucose levels and other risks. If successful, do a trial during a different portion of the day. If issues occurred, consider potential solutions and if it is safe for this individual, do another trial with alterations. If not, work with the individual to consider other options.
- Help to establish a support system.



## 4

### Nutrition Recommendations for a Healthy Fast

A nutrition assessment is a normal part of DSMES. Nutrition needs will be the same, but meal timing and when to break the fast will be important considerations. Healthy food choices while fasting are very important to ensure satiety and reduce the risk of overeating and temptations around less healthy food choices. In addition, eliminating food groups and options or modifying eating practices to a “fasting diet” can contribute to disordered eating practices and weight regain after the fast.

Individual assessment should include questions that elicit information about the person’s fasting practices and knowledge about how to fast safely. Nutrition counseling addresses pre- and post-fasting meal recommendations. Recommendations must be individualized and consider preferred food choices, cultural background, and a plan to address fasting-associated symptom management.



### MAJOR POTENTIAL COMPLICATIONS WHEN FASTING

Understanding the four major complications helps to stratify risks and guide education and recommendations.

- 1** Low Glucose Levels: a glucose level below low target or < 70mg/dL
- 2** High Glucose Levels : a glucose level above target level or >300mg/dL
- 3** Diabetic Ketoacidosis (DKA): due to a lack of insulin; people with type 1 diabetes are at increased risk for DKA
- 4** Dehydration: decreasing fluid intake, either through decreasing drinks and/or food. Risk heightens in the presence of physical activity/labor, excessive perspiration, and/or hot

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## Nutrition Recommendations for Healthy Fasting

Below are pre and post-fasting meal recommendations.

FOOD CATEGORY	NUTRITION RECOMMENDATIONS
<b>BEVERAGES</b>	Drink an adequate amount of water and unsweetened, caffeine-free beverages to minimize dehydration.
<b>FRUITS</b>	Select whole fruits and limit fruits with added sugars to maximize satiety and nourish your body.
<b>VEGETABLES</b>	Include a variety of fresh and cooked vegetables. Season vegetables with an appropriate amount of olive oil and vinegar/lemon juice to maximize nutrient absorption and satiety.
<b>SOUPS</b>	Prepare soups with abundant vegetables, whole grains and legumes. Whole grains and legumes contribute dietary fiber to support a healthy gut. Select lean meats to limit excess saturated fat and calories.
<b>GRAINS</b>	Choose whole grains such as brown rice, oats, whole wheat, barley groats, millet and others. Whole grains have been shown to ameliorate glucose excursions. They also contribute dietary fiber, vitamins and minerals.
<b>PROTEIN FOODS</b>	Select a variety of legumes and lean animal protein foods to decrease the amount of saturated fat and dietary cholesterol.
<b>DESSERTS</b>	Select fruits. Decrease the portions of highly processed desserts with added sugars. Choose small portions of calorie-dense desserts to reduce calories.
<b>FATS/OILS</b>	Use unsaturated oils (olive, canola, vegetable) and limit fried foods. Avoid trans fats. When substituting saturated fats for unsaturated fats, there is a decrease in LDL cholesterol.
<b>NUTS &amp; SEEDS</b>	Choose salt-free nuts and seeds in appropriate amounts. While nuts contain healthy fats, they are calorie dense and increase satiety levels. Eat nuts and seeds to add fiber, calcium, potassium and B vitamins to your diet.
<b>DAIRY</b>	Select lower fat dairy products or plant-based milk. Choose unsweetened yogurt and mix it with fresh fruits. Limit portions of cheese to reduce the amount of saturated fat. Strong cheeses add more flavor in small amounts and some people may consider lower fat cheese options.
<b>SPICES</b>	Herbs and spices are a great option to reduce added salt and reduced amount of added sugar in desserts. Use cinnamon, nutmeg, anise, cardamom, garlic, dill, parsley, cumin, turmeric, paprika, etc.

## Four Risk Categories of Fasting for People Who Have Diabetes

Very High Risk (One or more of the following)	High Risk	Moderate Risk	Low Risk
<p>Type 1 diabetes - not in target range</p> <p>Pregnant</p> <p>low glucose levels</p> <p>Severe low glucose levels within the past 3 months</p> <p>History of frequent episodes of low blood glucose</p> <p>Hypoglycemia unawareness</p> <p>History of hyperosmolar hyperglycemic coma within the past 3 months</p> <p>Acute illness</p> <p>Engages in extremely intense physical labor</p> <p>Advanced chronic kidney disease</p> <p>On hemodialysis</p> <p>History of disordered eating patterns</p>	<p>Type 2 diabetes - not in target range</p> <p>Type 2 diabetes - taking basal-bolus insulin or mixed insulin</p> <p>Type 1 diabetes</p> <p>Hyperglycemic-average glucose 150mg/dl-300mg/dl</p> <p>Lives alone</p> <p>Advanced age or frail</p> <p>Advanced macrovascular complications</p> <p>Microvascular complications</p> <p>Renal insufficiency</p>	<p>Able to manage glucose using rapid acting, short acting or meglitinides</p>	<p>A person with diabetes who manage diabetes with lifestyle (meal planning, activity, monitoring, no medications)</p> <p>Manages diabetes with lifestyle and medications that alone do not usually cause low glucose levels such as metformin, thiazolidinedione, DPP-4i, GLP-1ra</p>



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## SPECIAL CONSIDERATIONS

### Monitoring

When monitoring glucose, continuous glucose monitoring is preferred. Monitor often, at least four times per day and during symptoms of low glucose levels, high glucose levels or malaise.

### Low Glucose Levels

If the person with diabetes experiences low glucose levels ( $<70\text{mg/dl}$ ), stop fast and treat, then recheck within 15 minutes and then again within an hour, or more often as needed.

### High Glucose Levels

If high glucose levels occur ( $>250\text{mg/dL}$ ), check for ketones and increase intake of unsweetened fluids, preferably water. If taking insulin, take as recommended and recheck blood glucose within one hour.

**Reasons for all people with diabetes to discontinue a fast:**

**Low Glucose Levels  
High Glucose Levels  
Acute Illness**

### Taking Medications

When on medications such as sulfonylureas, evaluate glucose history for low glucose levels and adjust medications. They may be able to hold or decrease during fast. For people taking insulin, it depends on the type of diabetes and type of insulin. People with type 1 diabetes should continue basal insulin and correction as needed, but fine tuning and titration will likely be required, so communication with the referring provider is important. Check with provider if SGLT-2i can safely be stopped during a fast to avoid dehydration and/or DKA.

## SUMMARY

Safe fasting can be part of healthy diabetes management. All individuals with diabetes who choose to fast could benefit from DSMES and MNT to plan how to safely incorporate fasting into their care plan. All elements of the AADE7 should be assessed in order to have a safe fast with diabetes. A risk assessment of how to start, maintain and break a fast must be conducted in order to minimize challenges and complications.