

CrossFit Coaching and Diabetes Trainer Reference Guide

	Type 1 Diabetes	Prediabetes	Type 2 Diabetes
Description	A chronic condition wherein the pancreas produces little to no insulin.	A condition wherein blood sugar is chronically higher than normal, but not high enough to be Type 2 Diabetes.	A condition wherein blood sugar is chronically elevated due to insulin resistance and hyperinsulinemia.
Prevalence	~0.93% (9.3/1000)	~36% (360/1000)	~8.4% (84/1000)
Common Treatments/ Medical Interventions	The most common treatment is insulin. Exercise and diet can help control blood glucose and increase insulin sensitivity.	Lifestyle changes (nutrition, exercise, sleep, stress management) should be the main intervention. Oral medications such as metformin or blood-pressure-reducing drugs are sometimes prescribed.	Lifestyle changes (nutrition, exercise, sleep, stress management) should be the main intervention. Medications such as insulin and metformin, as well as other oral medications, are often prescribed.
How Nutrition Can Help	Whole, unprocessed foods can reduce insulin resistance. This would result in less exogenous insulin needed to maintain blood-glucose control. Quantification can help further manage blood glucose by providing a solid baseline for overall intake and macronutrient ratios. This baseline can easily be manipulated to accommodate intensity, training volume, and changes in stress and sleep.	Whole, unprocessed foods are the first line of defense. If prediabetes has progressed too far, quantification might be necessary to reduce insulin resistance. Ratios of 40C/30P/30F are a good starting point, but carbohydrates might have to be reduced and fat increased to improve the metabolic profile.	Whole, unprocessed foods are the first line of defense. Quantification might be necessary to reduce insulin resistance. Ratios of 40C/30P/30F are a good starting point, but carbohydrates might have to be reduced and fat increased to improve the metabolic profile.
How Exercise Can Help	Exercise can help minimize the risk of complications due to T1D and lead to increased insulin sensitivity, decreased need for insulin supplementation, and decreased risk of hyperinsulinemia and its associated diseases.	Exercise can help increase insulin sensitivity, improve glycemic control, and promote weight loss.	Exercise can help increase insulin sensitivity, improve glycemic control, and promote weight loss.

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How To Be Prepared/Support Diabetic Athletes	Check in with athletes pre-, during, and post-workout to determine blood-glucose measurements. Use CrossFit training for the best blood-glucose stabilization, resistance training, metabolic conditioning, and relative intensity. There are certain warm-ups and cool-downs that can be used to manage blood glucose. As an example, low-intensity aerobic cool-downs can be used to manage blood-glucose spikes due to anaerobic training, while 10-second sprints can be used to prevent hypoglycemic events due to aerobic exercise. Have juice, glucose tablets, or honey available for hypoglycemic events.	Determine which, if any, medications your athlete is on to control blood glucose. Make sure they are advising their physician about starting an exercise program. Have juice, glucose tablets, or honey available just in case hypoglycemic events occur due to the interaction of exercise and blood-glucose-lowering medication.	Determine which medications your athlete is on to control blood glucose. Make sure they are advising their physician about starting an exercise program. Have juice, glucose tablets, or honey available just in case hypoglycemic events occur due to the interaction of exercise and blood-glucose-lowering medication. Those taking insulin are at a higher risk of hypoglycemia.
Symptoms To Be Aware Of	<p><i>Mid-workout:</i> Hypoglycemic symptoms such as shakiness, confusion, dizziness, changes in vision, tingling in the hands, irritability, clumsiness, and excessive sweating.</p> <p><i>Post-workout:</i> Hyperglycemia rebound effects due to liver-produced glucose and improper insulin adjustments. Typically seen one to two hours after intense anaerobic exercise. Symptoms include extreme thirst, nausea and stomach issues, trouble seeing, poor concentration, confusion, disorientation, and high heart rate.</p>	Hypoglycemic symptoms (same as T1D) which can occur from aerobic-style training. This is mostly seen in those using blood-glucose-lowering medications.	<p><i>Mid-workout:</i> Hypoglycemic events, especially in those using insulin for blood-glucose control.</p> <p><i>Post-workout:</i> Hyperglycemia from intense training, wherein the liver produces glucose, but glucose uptake cannot keep up with glucose production. This could result in diabetic ketoacidosis. Symptoms include extreme thirst, nausea and stomach issues, trouble seeing, poor concentration, confusion, disorientation, and high heart rate.</p>