

OBESITY TREATMENT: TESTS USED TO ASSESS METABOLISM, APPETITE AND ENERGY CONTROL

CARBOHYDRATE METABOLISM

Tests	Significance	Treatment
Fasting Glucose	Elevated fasting glucose can be seen in setting of prediabetes, insulin resistance, and diabetes. Normal: 70-99 mg/dl Prediabetes: 100-125 mg/dl Diabetes: 126+ mg/dl	Diet, healthy weight loss, exercise, and medications when indicated.
Fasting Insulin	Elevated fasting insulin can be seen in setting of insulin resistance, prediabetes, diabetes, or a state of baseline insulin overproduction by the pancreas. Insulin resistance is a common problem seen in overweight/obesity. Insulin promotes fat accumulation and blocks fat burning. It also affects appetite. Elevated insulin levels have been associated with increased risk of atherosclerosis and cardiovascular disease, and promotes inflammation. Fasting insulin also correlates with insulin resistance (IR): 10 uU/ml = 50% of patients have IR 13 uU/ml = 75% of patients have IR 18 uU/ml = 100% of patients have IR	Carbohydrate restricted diet, exercise, healthy weight loss, and medications when indicated. There is some evidence to support use of chromium supplements to help with insulin resistance. Target interventions to lower insulin resistance: raise adiponectin levels, lower levels of IL-6 and TNFalpha, reduce FFA and systemic inflammation.
HbA1c	Represents average glucose for past 3 months. Normal: <5.7% Prediabetes: 5.7-6.4% Diabetes: >6.4%	Carbohydrate restricted diet, exercise, healthy weight loss, and medications when indicated.
Fructosamine	Represents average glucose over the previous 1-3 weeks.	Carbohydrate restricted diet, exercise, healthy weight loss, and medications when indicated.
Glycomark	Glycomark test (1,5 anhydroglucitol levels) provides information on postprandial (after meals) glucose control.	Carbohydrate restricted diet, exercise, healthy weight loss, and medications when indicated.
Glucose Tolerance	Determines how quickly glucose is cleared from the blood 2 hours after a load of glucose. Normal: < 140 mg/dl Prediabetes: 140-199 mg/dl Diabetes: 200+ mg/dl	Diet, exercise, healthy weight loss, and medications when indicated.
Insulin Stimulation	Determines amount of insulin production by the pancreas after a load of glucose. ~20% of obese people have an abnormal overproduction of insulin.	Comprehensive neuroendocrinology evaluation. There is some evidence to support benefit of a medication called Somatostatin.