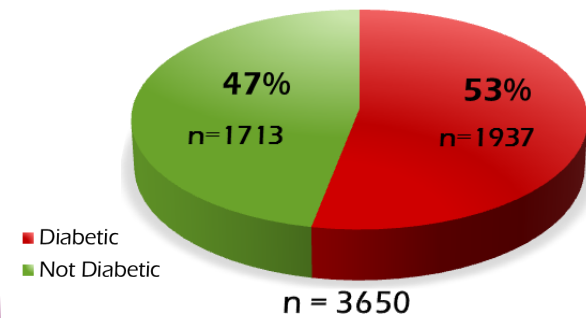


The Research Basis for the Kraft Prediabetes Profile

The Kraft Prediabetes Profile is based on the research of Dr. Joseph Kraft, a clinical pathologist. Dr. Kraft measured serial insulin levels in 3,650 patients who were referred to him for an oral glucose tolerance test (OGTT) to evaluate for diabetes mellitus (DM).

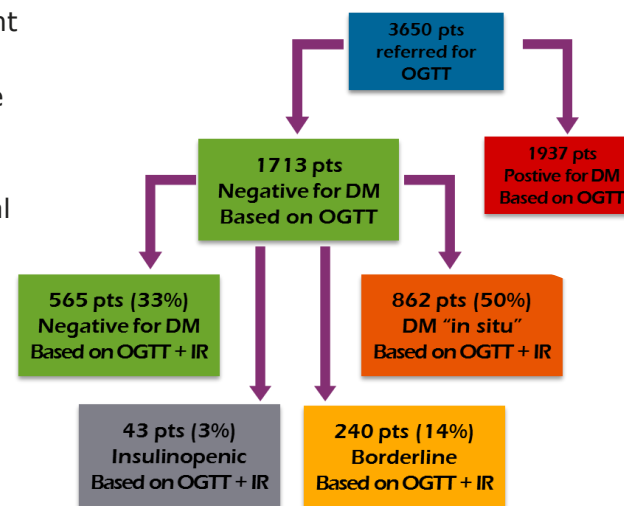


The oral glucose tolerance test (OGTT) diagnosed 53% patients with diabetes and 47% as normal.

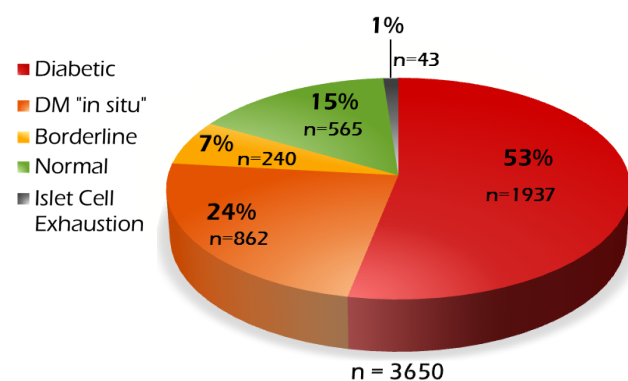
- 1,937 patients (53%) were diagnosed as diabetic on the basis of the OGTT alone. This is not surprising as they were referred due to a suspicion of diabetes to begin with.
- 1,713 patients (47%) were determined to be not diabetic on the basis of the OGTT.

However, the serial insulin patterns told a different story. Here's what happened: Of the 1,713 tests which were normal strictly on the basis of glucose tolerance,

- 862 (50%) were demonstrated to be abnormal on the basis of insulin response. (Termed diabetes "in situ" by Dr. Kraft)
- 240 (14%) were determined by Dr. Kraft to be borderline for diabetes mellitus.
- 43 patients (~3%) displayed a suppressed insulin response, typical of exhausted islet cells.
- Only 565 (33%) of the supposedly normal tests were still classified as normal after evaluating the insulin response.



Of the 1,713 patients initially determined to be normal, the OGTT missed 67% with an abnormal insulin response.



Only 15% percent of all the patients referred for OGTT testing had a normal insulin response.

Another way of looking at these results is to compare the percentage of normal results with the total number of patients studied. With the OGTT alone, 53% were diabetic and 47% normal. With the addition of insulin response curves, the normal tests dropped to 15%. Overall, the standard OGTT test overlooked 32% of patients (1,145 people) who were at risk for diabetes and could have been helped with early interventions.

GABA, Berberine, Gymnema silvestre, and palmitic acid all have shown promise in improving insulin sensitivity and blood sugar regulation. For research related to these and other important factors to consider with insulin resistance, go to: Meridianvalleylab.com



Understanding Your Kraft Prediabetes Profile

Leader in preventive medicine since 1976



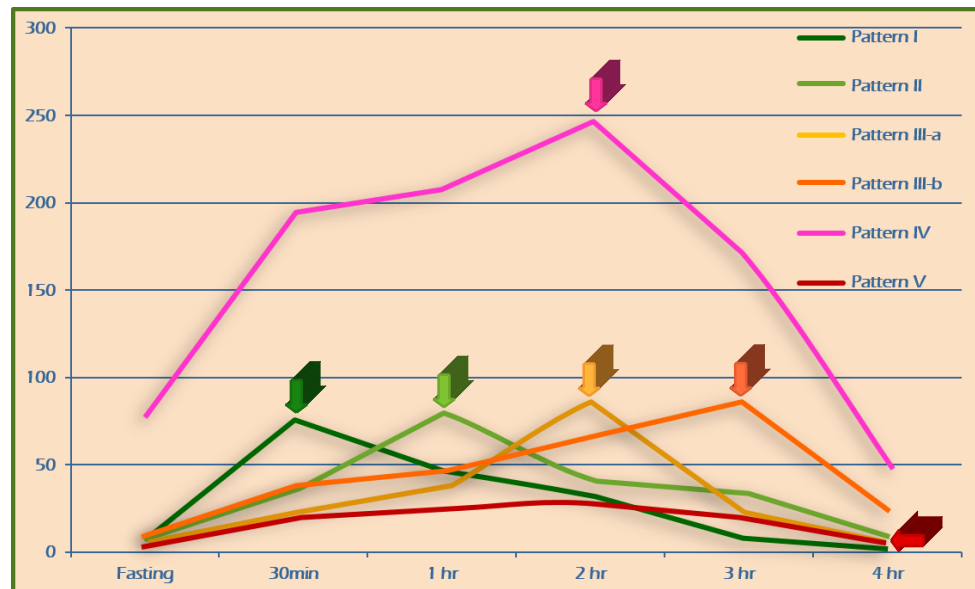
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About the Kraft Prediabetes Profile

Maintaining glucose control and insulin sensitivity is essential to good health. Meridian Valley Lab is proud to offer one of the most sensitive assessments of insulin response and glucose control, the Kraft Prediabetes Profile. This test allows for much earlier detection of developing insulin resistance than traditional tests.

The Kraft Prediabetes Profile is a timed test that measures the patient's insulin response to a measured glucose challenge and return to baseline over a 4-hour period. Based on the research of Dr. Joseph Kraft, this test identifies patterns that are indicators of progression from normal insulin response through insulin resistance to islet cell exhaustion. Incipient insulin resistance can thus be detected long before abnormalities will be seen using conventional markers such as glucose, HgbA1C and fasting insulin. Because the patterns show progression along a continuum, the severity of insulin resistance can be determined, which may guide treatment decisions. The test is also useful for monitoring efficacy of lifestyle changes and treatment which can improve patient compliance.

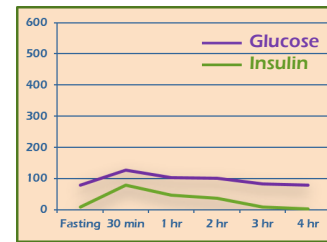


As insulin resistance becomes more severe, the insulin response to glucose peaks later and later. (Patterns II-IIIb). With Pattern IV insulin starts high and rises dramatically in an attempt to keep blood sugar under control. Islet cell exhaustion is illustrated by Pattern V, or insulinopenia, in which the patient's pancreas is no longer able to produce an adequate insulin response.

Indications

- Family history of diabetes or insulin resistance
- Family or personal history of atherosclerosis or heart disease
- History of gestational diabetes
- Central obesity or gynecomastia
- High 5 α -reductase activity on a 24-hour urine hormone profile
- Low ratio of testosterone to estrogens in men on a 24-hour urine hormone profile, indicating over-aromatization
- PCOS
- Elevated triglycerides
- Elevated blood pressure
- Osteoarthritis (may be associated with insulin resistance)

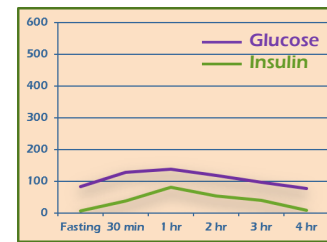
Insulin Response Patterns



Pattern I: 37 year-old female with normal glucose and insulin response.

Pattern I: Normal

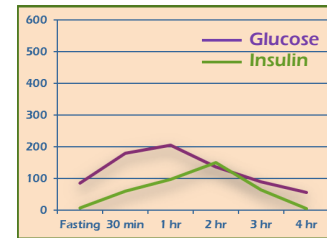
- Normal fasting insulin 0-10 units
- Peak insulin at ½-1 hour
- 2nd hour insulin <50
- 3rd hour insulin < 2nd hour
- 2nd hour + 3rd hour totals < 60
- Subsequent values at fasting range (0-10)



Pattern II: 19 year-old female with fasting glucose, insulin and 2hr glucose all normal. Delayed insulin peak signals borderline Insulin Resistance (IR).

Pattern II: Delayed Insulin Peak

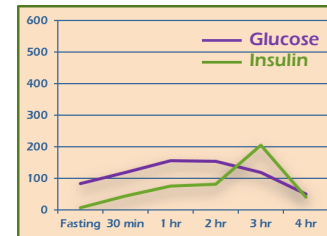
- Normal fasting insulin 0-10 units
- Peak insulin at ½-1 hour
- 2nd hour + 3rd hour totals > 60 and <100 = Borderline insulin resistance
- 2nd hour + 3rd hour totals > 100 = definite insulin resistance



Pattern III-a: 70 year-old female with normal OGTT values. 2hr. Insulin peak indicates well-established IR.

Pattern III-A: Insulin Resistance

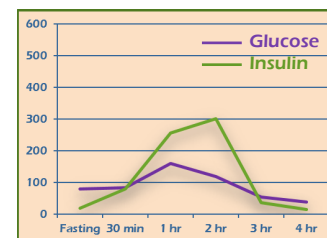
- Normal fasting insulin 0-10 units
- Peak insulin at 2nd hour
- Considered diagnostic for insulin resistance
- Glucose tolerance may be within normal limits or impaired



Pattern III-b: 76 year-old female has normal OGTT values. Insulin peak at hour 3 reveals significant IR.

Pattern III-B: Insulin Resistance

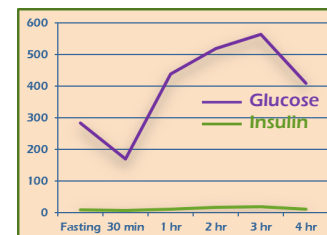
- Normal fasting insulin 0-10 units
- Peak insulin at 3rd hour
- Considered diagnostic for insulin resistance
- Glucose tolerance usually at diabetic levels



Pattern IV: 67 year old female patient. A massive outpouring of insulin keeps glucose levels normal.

Pattern IV: Insulin Resistance

- Fasting insulin >10
- Diagnostic for insulin resistance
- Glucose tolerance usually at diabetic levels



Pattern V: 63 year old male with diabetes. Flattened insulin response suggests islet cell exhaustion.

Pattern V: Insulinopenic

- When glucose is elevated, this is considered to be a Type I DM pattern.
- All tested values for insulin <30.
- Insulin insufficiency probably due to damaged or exhausted islet cells.
- Glucose tolerance usually at diabetic levels.
- May signal the need for exogenous insulin.
- When seen with normal glucose values, may be indicative of an extremely low carbohydrate diet.