Table 1. Insulin Reference Ranges in uIU/mL of Six Laboratories in New York Metropolitan Area*

Laboratory	Fasting	1 Hr	2 Hr	3 Hr
Laboratory 1	1.9 - 23	8 - 112	5 – 35	Not Reported
Laboratory 2	2.6 - 24.9	0.0 - 121.9	0.0 - 163.5	Not Reported
Laboratory 3	2.6 - 24.9	8 - 112	5 - 55	3 - 20
Laboratory 4	6 - 27	20 - 120	18 - 56	8 - 22
Laboratory 5	00 - 30	30 - 200	40 - 300	50 - 150
Laboratory 6	Does not include insulin ranges in the report. Instead it includes the following note: Insulin analogues may demonstrate non-linear cross-reactivity in this essay. Interpret results accordingly.**			

*Upper and lower limits of laboratory reference ranges for blood insulin concentration determined following a Standard 75-gram glucose challenge.
**Personal communications with clinicians revealed that they do not find this laboratory note to be satisfactory in their clinical decision-making.

Table 2. Insulin Homeostasis Categories in 506 Study Subjects Without Type 2 Diabetes

Insulin Category*			Percentage of Subgroup	Mean Peak Glucose mg/dL (mmol/mL)	Mean Peak Insulin (uIU/mL)
Exceptional Insulin Homeostasis	N =	12**	1.7%	110.2 (6.12)	14.3
Optimal Insulin Homeostasis	N =	126	24.9 %	121.2 (6.73)	26.7
Hyperinsulinism, Mild	N =	197	38.9 %	136.5 (7.58)	58.5
Hyperinsulinism, Moderate	N =	134	26.5 %	147.0 (8.16)	109.1
Hyperinsulinism, Severe	N =	49	9.7 %	150.0 (8.33)	231.0

\# Correlation coefficient, r value, for means of peak glucose and insulin levels in the five insulin categories is 0.84.

*Criteria for classification: (1) Exceptional insulin homeostasis, a subgroup of optimal insulin homeostasis with fasting insulin concentration of <2 uIU/mL and mean peak insulin concentration of <20; (2) optimal insulin homeostasis, peak insulin <40 accompanied by unimpaired glucose tolerance; (3) mild. ** The exceptional insulin homeostasis is a subgroup of optimal insulin homeostasis group.

Table 3. Insulin Homeostasis Categories in 178 Study Subjects with Type 2 Diabetes

Insulin Category			Percentage of Subgroup	Mean Peak Glucose mg/dL (mmol/mL)	Mean Peak Insulin (uIU/mL)
Diabetic Hyperinsulinism, Mild	N =	53	29.0%	252.0 (14.00)	55.4
Diabetic Hyperinsulinism, Moderate	N =	42	24.0%	242.1 (13.45)	112.4
Diabetic Hyperinsulinism, Severe	N =	24	13.9%	224.6 (12.47)	298.0
Diabetic Insulin Deficit	N =	59	33.1%	294.0 (16.33)	22.9

Table 4. Example of Insulin and Glucose Profiles in Exceptional Insulin Homeostasis Category*

	Fasting	Hr ½	1 Hr	2 Hr	3 Hr
Insulin uIU/mL	<2	18	14	4	<2
Glucose mg/mL (mmol/L)	77 (4.27)	168 (9.33)	109 (6.05)	74 (4.11)	59 (2.88)

*The patient, a 60-yr-old 5' 7" man weighing 138 lbs. presented for a wellness assessment. He was in excellent health by clinical and laboratory evaluation criteria.