

Uncover hidden insulin resistance in its **earliest stages**

Clinical case studies in insulin resistance testing



Helen

Age: 58 **Weight:** 134 **Height:** 5'4"

Helen is a 58-year-old white female who has an optimal BMI of 23. She has a previous history of gestational diabetes. Helen eats relatively well, but her level of physical activity has dropped over the last 10 years after having to take a high-stress job with a longer commute. She spends a lot of time sitting in her car and at her desk.

Model used for illustrative purposes.

Lab results

At her annual exam, Helen's blood pressure (BP) indicates that she is hypertensive. Her lipids are all optimal, as are her fasting plasma glucose (FPG), and hemoglobin A1c (HbA1c). Given Helen's high BP, medical history of gestational diabetes, and lifestyle factors, **additional testing may help uncover risk of pre-diabetes and diabetes.**

Blood pressure	157/94	High
Total cholesterol	147 mg/dL	Optimal
LDL cholesterol	93 mg/dL	Optimal
HDL cholesterol	42 mg/dL	Optimal
Triglycerides	138 mg/dL	Optimal
Glucose (FPG)	79 mg/dL	Optimal
HbA1c	5.10%	Optimal

Further investigation with insulin resistance testing

Helen is at risk for progressing to diabetes despite having normal glucose and HbA1c. Her physician orders the Cardio IQ Insulin Resistance Panel with Score to determine Helen's probability of being insulin resistant and to help further guide a plan of treatment.

The Cardio IQ Insulin Resistance Panel with Score correlates with steady-state glucose levels achieved during an insulin suppression test, a standard research test for insulin resistance. The score is based on the combination of insulin and C-peptide results and provides a reliable probability of a patient's insulin resistance.¹ A score below 33 is optimal.

Look deeper. Know more. **Act sooner.**

Insulin resistance (IR) can be present in apparently healthy individuals, like Helen, who have risk factors for diabetes. It is known that IR can be present 10 years or more before diabetes is diagnosed,² and that by the time diabetes is evident, 80% of beta-cell function has already been lost.³ Patients suitable for testing include those with normal glucose and HbA1c¹ and those with clinical features associated with IR, including hypertension and a history of gestational diabetes mellitus, as well as overweight/obese, central obesity, family history of diabetes, and acanthosis nigricans.

Helen's results

Insulin	12	Optimal
C-peptide	1.96	Optimal
Insulin resistance score	51	Moderate

Helen's results include an insulin resistance score of 51, indicating a moderately impaired insulin sensitivity that puts her at **risk for progression to diabetes**.

Helen's treatment plan, guided by actionable results

Based on Helen's insulin resistance score results, her physician starts her on a beta blocker to get her blood pressure under control. She counsels Helen on ensuring she maintains a healthy diet and to find time to develop a consistent aerobic exercise routine to help reduce her BP and insulin sensitivity. She also schedules a follow-up exam for Helen to monitor her BP after initiation of therapy and to see if her insulin sensitivity is improving with lifestyle changes and BP control.

The treatment considerations are provided for informational purposes only and are not intended as medical advice. A physician's test selection and interpretation, diagnosis, and patient management decisions should be based on his/her education, clinical expertise, and assessment of the patient.

Know more across the entire diabetes care continuum

Quest Diagnostics offers a comprehensive array of diabetes laboratory testing services to help you manage insulin resistance, prediabetes, and diabetes in all of your patients, no matter where they are on the diabetes care continuum.

Test Name	Patient Preparation	Test Code	CPT Code(s)*
Cardio IQ® Insulin Resistance Panel with Score	Overnight fasting required	36509(X)	83525, 84681

*The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.



Knowing what's ahead can make all the difference. Contact your Quest Diagnostics sales representative or visit **QuestDiagnostics.com/IRscore** to learn more.

References

1. Abbasi F, Shiffman D, Tong CH, et al. Insulin resistance probability scores for apparently healthy individuals. *J Endocr Soc*. 2018 Aug 9;2(9):1050-1057. doi: 10.1210/js.2018-00107.
2. Holman RR. Assessing the potential for alpha-glucosidase inhibitors in prediabetic states. *Diabetes Res Clin Pract*. 1998;40 Suppl:S21-S25.
3. Dall T, Thiselton D, Varvel S. Targeting insulin resistance: the ongoing paradigm shift in diabetes prevention. *AJMC*. April 11, 2013. www.ajmc.com/journals/evidence-based-diabetes-management/2013/2013-1-vol19-sp2/targeting-insulin-resistance-the-ongoing-paradigm-shift-in-diabetes-prevention. Accessed September 20, 2018.

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