



EXAMPLE

This report is a demonstration template created for illustrative purposes only. The information contained herein does not correspond to any real individual and is not derived from actual patient data. It is intended solely to demonstrate the format and presentation of the Kihealth Metabolic Health Test Report.



METABOLIC HEALTH TEST REPORT

Customer Name: John Doe

Customer ID: 001

DOB: 01/09/1968

Gender: Male

Test Name: Metabolic Health Test

Test Components: BetaDx, Plasma
Insulin / C-Peptide, Serum
HbA1C, Whole Blood

Collection: 7/5/2025

Received: 7/12/2025

Issued: 7/23/2025

Ordering Provider: Self Ordered

Sample ID: DIA2400039



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INTRODUCTION

Your Partner in Health

John,

Welcome to your personalized Kihealth Metabolic Health Test Report. We are dedicated to helping you understand your health better and take proactive steps towards a healthier future. This report provides a comprehensive analysis of your recent blood test, focusing on key biomarkers related to metabolic health and diabetes risk.

At Kihealth, we believe that true wellness begins with a deep understanding of your body's internal workings. Our comprehensive Metabolic Health Test is designed to unveil critical insights about your metabolic health and potential risk of developing diabetes, guiding you towards optimal well-being.

Our core mission is to empower you with knowledge about your body, enabling you to make informed decisions to prevent chronic diseases and maintain optimal health throughout the years. We adhere to the philosophy that improvement begins with measurement, focusing on actionable biomarkers to provide you with practical insights.

By choosing Kihealth, you've made a commendable investment in your health. We're here to support you with precise testing and the latest health information to help turn your long-term health goals into reality.

Sincerely,

The Kihealth Team





INTRODUCTION

Your Partner in Health

About the Test

The Kihealth Metabolic Health Test is designed to provide you with valuable insights into your risk of developing diabetes. By analyzing four crucial biomarkers: BetaDx Score, C-Peptide, HbA1c, and Insulin, we can offer a detailed picture of your current metabolic health status and potential future risks.

Each of these biomarkers plays a significant role in understanding your body's insulin production and glucose management:

- **BetaDx:** This indicates the rate at which your pancreatic beta cells (β -cells) are dying. These cells are responsible for producing insulin, and their loss can lead to diabetes.
- **C-Peptide:** This is a byproduct of insulin production, and its levels help us assess how much insulin your body is producing.
- **HbA1c:** This measures your average blood glucose levels over the past two to three months, giving a long-term view of your blood sugar control.
- **Insulin:** This measures the current level of insulin in your blood, providing an immediate snapshot of your insulin production and its effectiveness in managing blood sugar levels.

In the following sections, you will find a detailed breakdown of your test results, what they mean, and actionable recommendations to help you manage and reduce your diabetes risk.

We hope this report empowers you with the knowledge and tools to make informed decisions about your health. If you have any questions or need further assistance, our support team is here to help.





INTRODUCTION

Your Partner in Health

About the Test

Important Note on Fasting

This test requires that you be in a fasted state (no food or caloric beverages for at least 8–12 hours prior to your blood draw). If you were not properly fasting at the time of sample collection, it may dramatically impact key results. Non-fasting samples can lead to inaccurate interpretations and affect clinical decision-making. Please consider this when reviewing your report. If your results are elevated or outside the optimal range, and you were not fully fasted, we recommend retaking the test under proper fasting conditions to ensure accuracy and reliable interpretation.

Follow-Up with a Healthcare Provider

If your results are elevated or outside the optimal range, it is important to consult with a qualified medical professional. Abnormal values may indicate underlying health issues that require further evaluation, diagnosis, or management. Your healthcare provider can interpret these results in context, recommend additional testing if needed, and help you develop a personalized plan to support your long-term health.

Example Key

The Scale	Notes
Normal	Indicates your biomarker is in an optimal range with strong metabolic balance and minimal current risk.
High Normal	Indicates your biomarker is slightly outside the optimal range and may benefit from lifestyle attention.
Elevated	Indicates your biomarker is outside the healthy range and may require prompt action.



GUIDE

Interpreting Your Report

What is Metabolism?

Metabolism refers to the chemical processes your body uses to convert food into energy, manage blood sugar, and build and repair tissues. It involves two main processes:

- Catabolism: Breaking down molecules to obtain energy.
- Anabolism: Synthesizing all compounds needed by the cells.

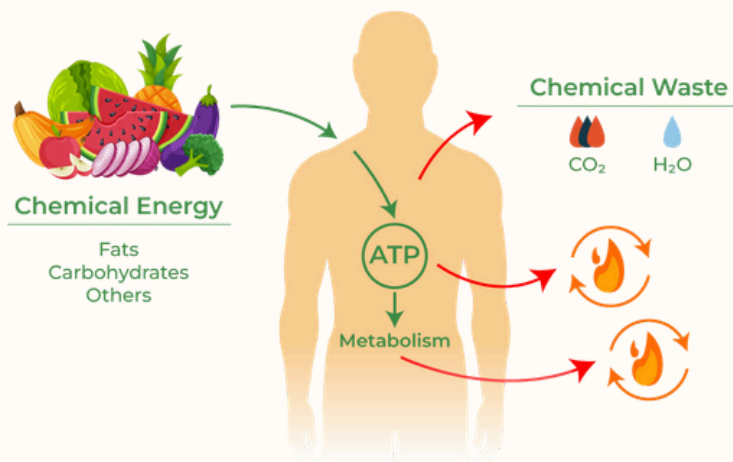
A healthy metabolism is essential for maintaining energy levels, supporting growth and repair, and ensuring that your body's organs and systems function properly.

What are Beta Cells?

Beta cells (β -cells) are a type of cell found in the pancreas within clusters called islets of Langerhans. They are crucial for regulating blood sugar levels by producing and releasing insulin, a hormone that helps cells absorb glucose from the bloodstream to be used for energy.

Their proper function is crucial for metabolic health, and dysfunction or loss of β -cells is central to the pathology of diabetes and many other significant diseases.

METABOLISM



GUIDE

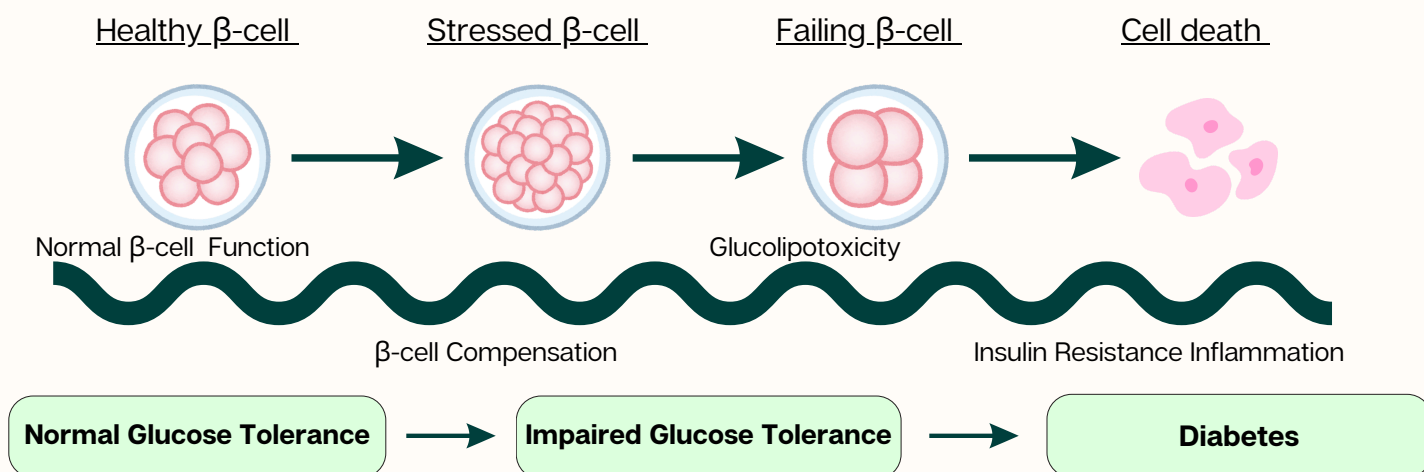
Interpreting Your Report

Understanding Metabolism & β -cell Function

Why β -cell Function is Important

- **Insulin Production:** β -cells are the primary source of insulin, which is essential for maintaining normal blood glucose levels.
- **Glucose Regulation:** Proper β -cell function ensures that glucose is efficiently taken up by cells, preventing high blood sugar levels (hyperglycemia) that can lead to diabetes.
- **Diabetes Risk:** Dysfunction or death of β -cells reduces insulin production, leading to elevated blood glucose levels and an increased risk of developing diabetes.

As β -cells die and or don't function effectively the body's cellular energy processes are affected and without adequate energy a cascade of health concerns persists. Preserving β -cells is necessary for optimal health and prevention of chronic disease.



GUIDE

Interpreting Your Report

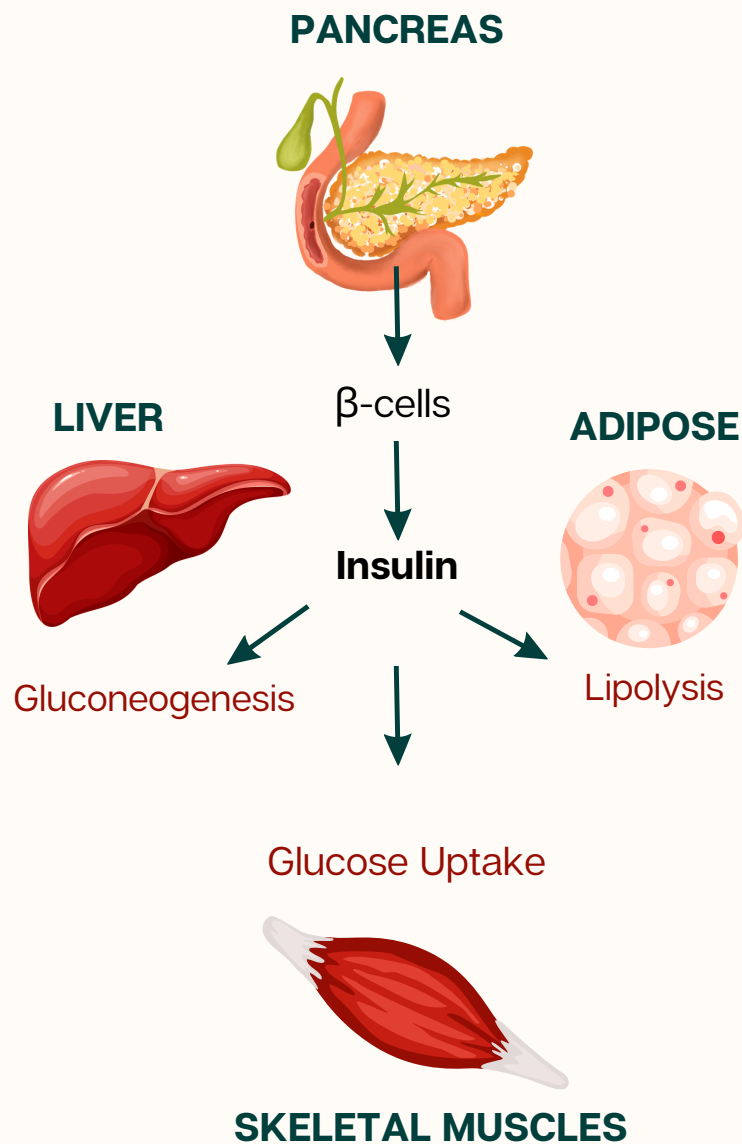
Understanding Metabolism & β -cell Function

What is Metabolism and Its Role in Disease Prevention?

Metabolism is the process your body uses to convert food into energy and manage blood sugar levels. It plays a crucial role in regulating glucose, the main energy source for your cells. Insulin, produced by beta cells in the pancreas, helps cells absorb glucose from the bloodstream.

Balanced metabolism prevents high blood sugar (hyperglycemia) and reduces the risk of insulin resistance, a precursor to type 2 diabetes. β -cells are essential for producing insulin, and their proper function is critical for maintaining glucose regulation. Dysfunction or loss of beta cells can lead to insufficient insulin production and elevated blood sugar levels.

Proper glucose regulation is vital for preventing chronic diseases like cardiovascular issues, neuropathy, and kidney disease. Maintaining a healthy metabolism and supporting beta cell function through diet, exercise, and medical care is essential for long-term health and disease prevention.





RESULTS

Understand your results

Summary Results

The section below provides a comprehensive overview of your test findings across all measured biomarkers. This summary highlights your overall health profile and allows you to see how each value compares to optimal reference ranges.

On the following pages, you will find a detailed analysis of every biomarker included in your panel. Each section explains what the biomarker measures, why it is important, how your individual result compares to the target range, and specific recommendations or next steps to help you optimize your health based on these insights.

TEST RESULTS

Marker	Result	Optimal Range	Status
BetaDx	5.5%	< 10%	Normal
C-Peptide	1.2 ng/ml	1.0 - 2.0 ng/ml	Optimal
Average Blood Sugar (HbA1c)	5.0%	4.8% - 5.4%	Optimal
Insulin	6.0 uIU/mL	3 - 8 uIU/mL	Optimal



RESULTS

Understand your results

Part 1: BetaDx - Understanding β -cell Health

Description

β -cells are specialized cells in the pancreas responsible for producing and releasing insulin, a hormone that regulates blood glucose levels. The death of β -cells, also known as β -cells apoptosis, can significantly impact insulin production. Monitoring beta cell death is crucial because a high rate of β -cells loss can lead to reduced insulin levels, resulting in elevated blood glucose levels and an increased risk of developing diabetes.

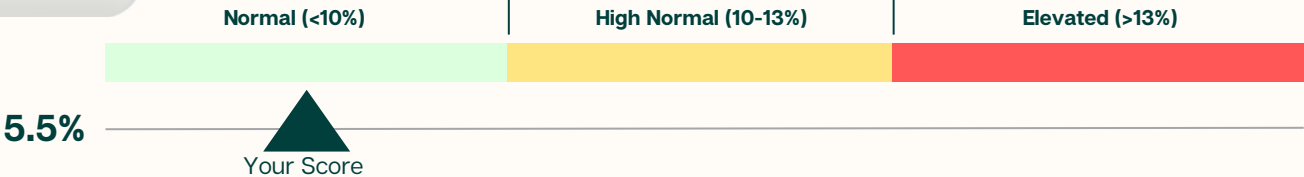
How It Works

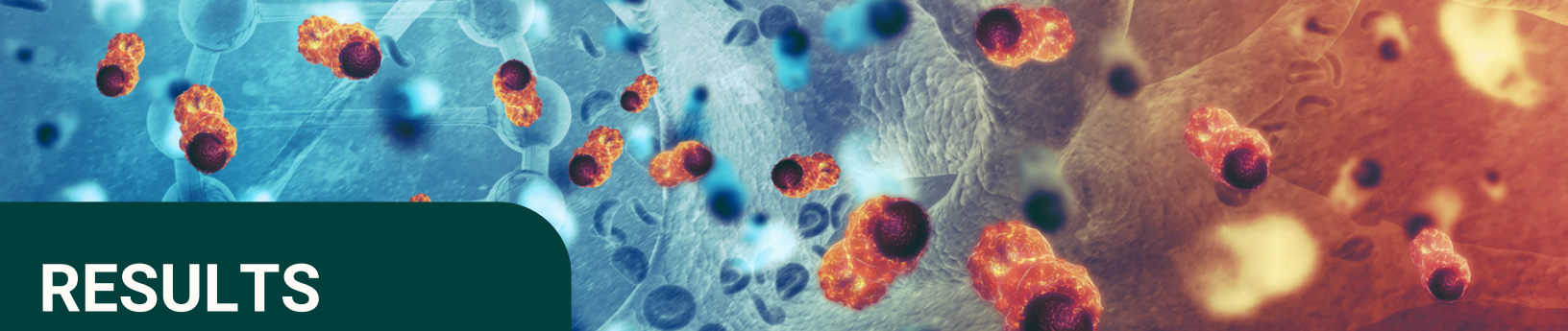
When β -cells die; they release tiny fragments of DNA called cell-free DNA (cfDNA) into the bloodstream. Each tissue has a unique DNA pattern, allowing us to identify cfDNA that originates specifically from pancreatic β -cells. Kihealth's advanced digital droplet PCR (ddPCR) technology detects and measures these beta cell specific cfDNA fragments with exceptional precision. This enables early detection of β -cell loss often before glucose or HbA1c levels change providing valuable insight into pancreatic health and diabetes risk.

TEST RESULTS

Marker	Result	Normal Range	Status
BetaDx	5.5%	< 13%	Normal

THE SCALE





RESULTS

Understand your results

Part 1: BetaDx - Understanding β -cell Health

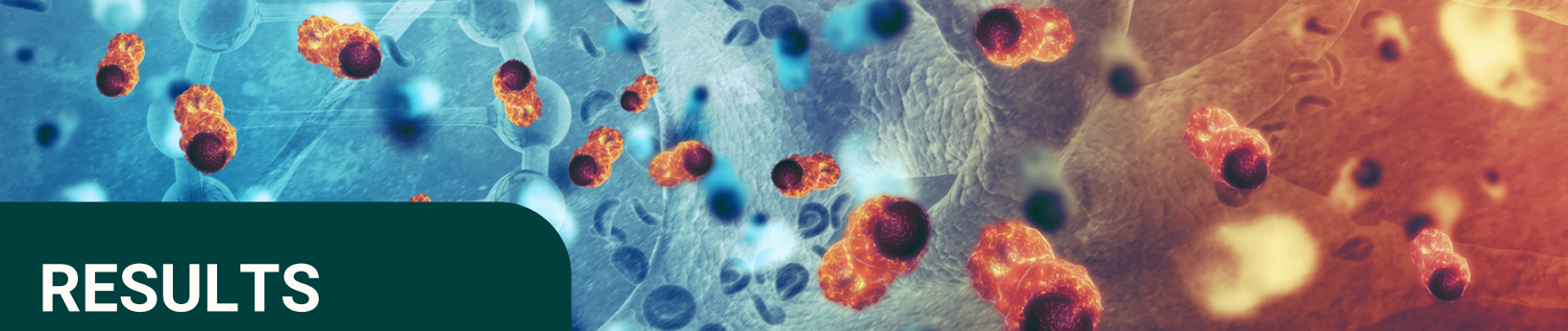
Your Results

- **BetaDx Score:** Normal
- **Comparative Analysis:** Your result falls within the expected and healthy range, indicating normal beta cell function and minimal beta cell death compared to reference values. This reflects strong pancreatic health and metabolic stability, suggesting that your current lifestyle and physiological balance are effectively supporting glucose control and preventing excess beta cell loss. This is a screening test and the normal result does not automatically rule out the possibility of β -cell death. Clinical correlation is indicated, and repeated test might be recommended.

What This Result Means

- Your test shows strong β -cell health, meaning your pancreas is effectively producing and regulating insulin. Optimal β -cell activity supports stable blood glucose levels and reflects healthy pancreatic function.
- Maintaining a strong β -cell profile helps prevent early metabolic dysfunction and significantly lowers the long-term risk of developing type 1 or type 2 diabetes.





RESULTS

Understand your results

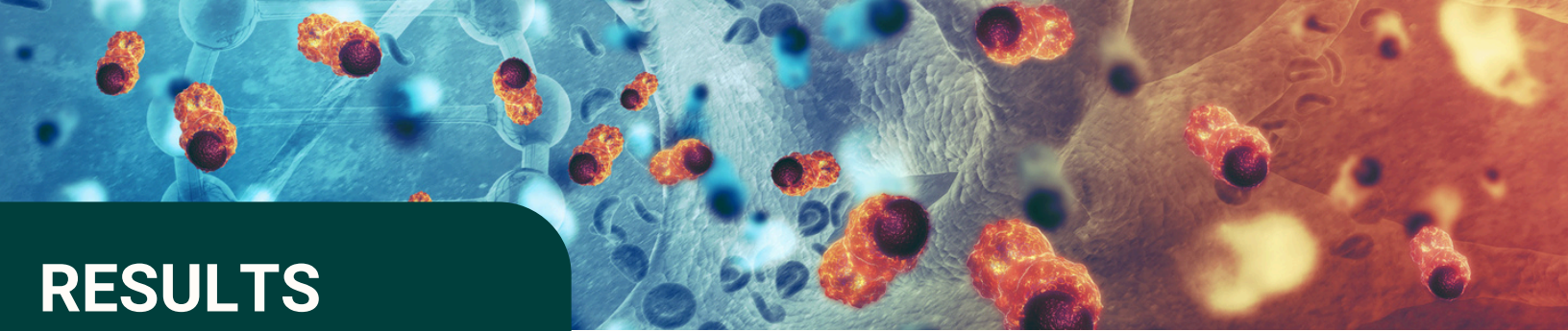
Part 1: BetaDx - Understanding β -cell Health

Potential Contributing Factors

Beta cell health and insulin production can be influenced by a combination of lifestyle, metabolic, and environmental factors. The following are the most common contributors that may impact your Beta Score over time:

- **Diet & Nutrition:** Diets high in refined carbohydrates, added sugars, and processed foods increase insulin demand and metabolic stress, accelerating beta cell fatigue.
- **Physical Inactivity:** Limited exercise reduces glucose uptake by muscles and forces beta cells to produce more insulin to maintain normal blood sugar.
- **Weight & Insulin Resistance:** Excess body fat—especially around the abdomen—reduces insulin sensitivity, causing beta cells to work harder and eventually decline in function.
- **Chronic Stress & Poor Sleep:** Elevated cortisol and disrupted circadian rhythms impair insulin regulation, inflammation control, and cellular recovery.
- **Inflammation & Autoimmunity:** Immune activation or chronic inflammation can directly damage pancreatic beta cells or trigger premature cell death.
- **Nutrient Deficiencies:** Low levels of vitamin D, magnesium, omega-3 fatty acids, and antioxidants can weaken cellular defenses and impair insulin signaling.
- **Environmental & Chemical Exposure:** Toxins, pollutants, or endocrine-disrupting chemicals may increase oxidative stress and inflammation, negatively affecting pancreatic health.
- **Hormonal Imbalances:** Dysregulated thyroid, cortisol, or sex hormones can alter glucose metabolism and increase beta cell workload.





RESULTS

Understand your results

Part 1: Beta Score - Understanding β -cell Health

Recommendations

Lifestyle Optimization

To preserve your excellent β -cell function and overall metabolic health, continue reinforcing the foundational habits that support insulin sensitivity and pancreatic performance:

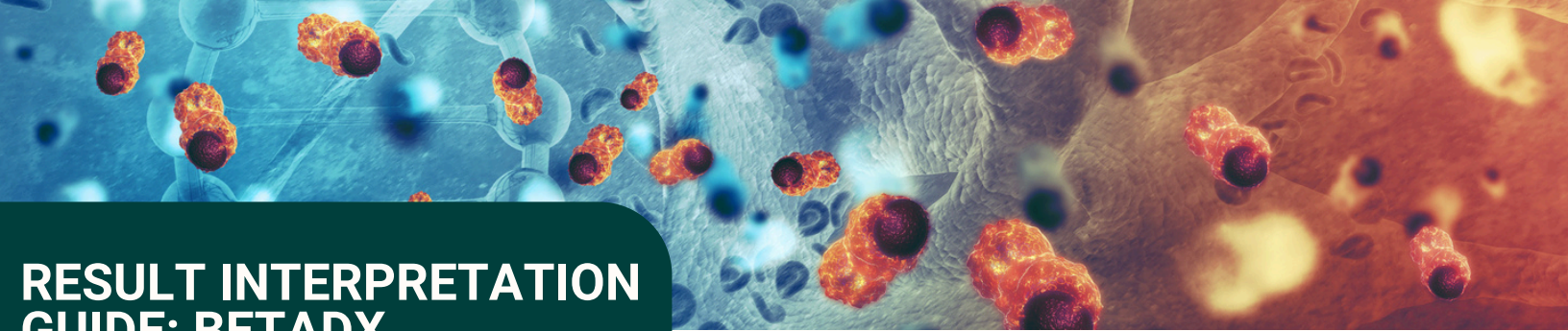
- **Nutrition:** Follow a whole-food, low-glycemic diet rich in fiber, lean proteins, and healthy fats (such as olive oil, avocados, and nuts). Limit processed foods, added sugars, and refined carbohydrates.
- **Physical Activity:** Maintain at least 150 minutes per week of moderate exercise, combining aerobic activity for cardiovascular health and resistance training for improved glucose utilization.
- **Sleep & Recovery:** Prioritize 7–9 hours of high-quality sleep per night to support hormonal balance and metabolic recovery.
- **Body Composition:** Aim for a healthy body fat percentage to reduce insulin resistance and minimize strain on pancreatic beta cells.

Ongoing Monitoring / Next Steps

Even with optimal results, routine testing ensures continued β -cell health and early detection of any metabolic shifts:

- Reassess BetaDx, HbA1c, and fasting glucose every 6–12 months.
- This is a screening test and a normal result does not automatically rule out the possibility of β -cell death. Therefore, when clinically indicated, the test should be repeated every 6–12 months depending on the severity of related clinical signs and symptoms (see disclaimer).
- Track fasting insulin and calculate HOMA-IR to monitor insulin sensitivity over time.
- If optimizing for performance or longevity, consider using continuous glucose monitoring (CGM) for real time insights into daily glucose dynamics.





RESULT INTERPRETATION GUIDE: BETADX

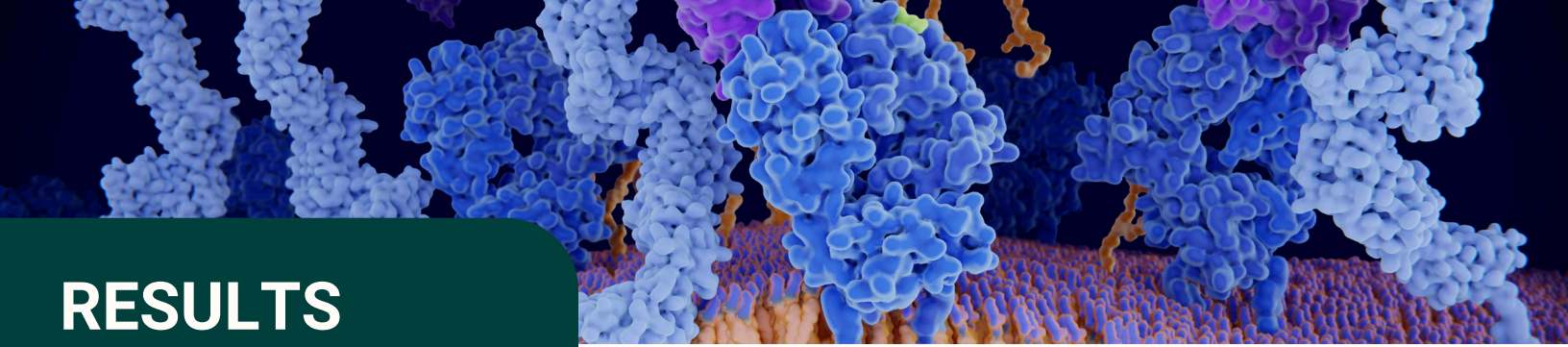
Why It Matters

Your Beta Score offers an advanced measure of pancreatic function and resilience revealing how well your β -cells are maintaining insulin production and glucose balance. Healthy, stable β -cell activity is essential for sustaining long-term metabolic health, preventing insulin resistance, and reducing the risk of type 1 and type 2 diabetes. Even small increases in β -cell death can precede measurable changes in blood sugar, making this an invaluable early warning indicator. By tracking and optimizing your Beta Score over time, you gain a deeper understanding of how your nutrition, activity, stress, and recovery habits impact your body’s ability to regulate energy empowering you to stay proactive in preventing metabolic disease and supporting long-term vitality.

The Scale	Reference Range	Notes
Normal	< 10%	Indicates optimal beta cell health with strong insulin regulation and metabolic balance. This result reflects low current risk and supports long-term protection against insulin resistance and metabolic disease.
High Normal	10 - 13%	Indicates mild beta cell stress with early compensatory activity. While not currently critical, this pattern suggests increased metabolic demand and may represent an early warning sign for future dysfunction.
Elevated	> 13%	Indicates significant beta cell stress and accelerated cell loss, which may compromise insulin production and glucose control. This result is associated with increased risk of metabolic or autoimmune dysfunction and warrants medical evaluation.

Disclaimer: This screening test measures the percentage of unmethylated insulin cell-free DNA (cfDNA) in the blood to help identify patients at risk of pancreatic beta cell death. An elevated result (above 13%) suggests a high likelihood of ongoing beta cell death and should prompt further clinical assessment. However, because of natural differences in how cfDNA is collected from a single blood sample, as well as normal person-to-person and day-to-day biological variations in insulin cfDNA levels, a result at or below 13% does not completely rule out risk. This test is intended to reliably identify patients who are likely at higher risk, but it may miss some individuals who are still affected. For this reason, results should always be interpreted together with other clinical findings, and continued monitoring may be appropriate.





RESULTS

Understand your results

Part 2: C-Peptide - Understanding Insulin & β -cell function

Description

C-Peptide is useful in the evaluation of pancreatic beta cell function and measuring it can show whether you have diabetes or if you are metabolically healthy. C-peptide is a substance, a short chain of amino acids, released into the blood as an inactive byproduct of the formation of insulin by the pancreas. When insulin is released from the beta cells into the blood in response to increased levels of glucose, equal amounts of C-peptide are also released. Since C-peptide is produced at the same rate as insulin, it is useful as a marker of insulin production.

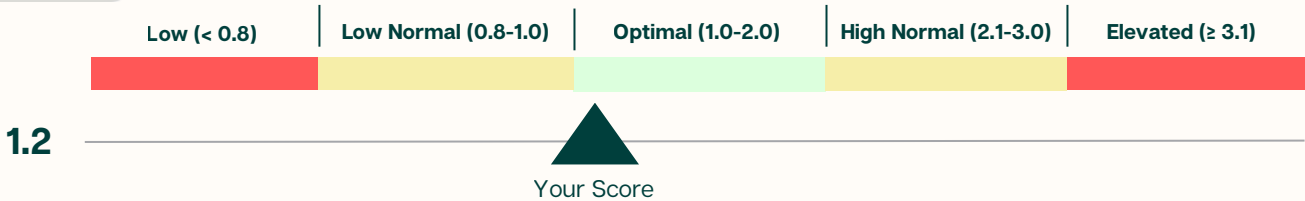
How It Works

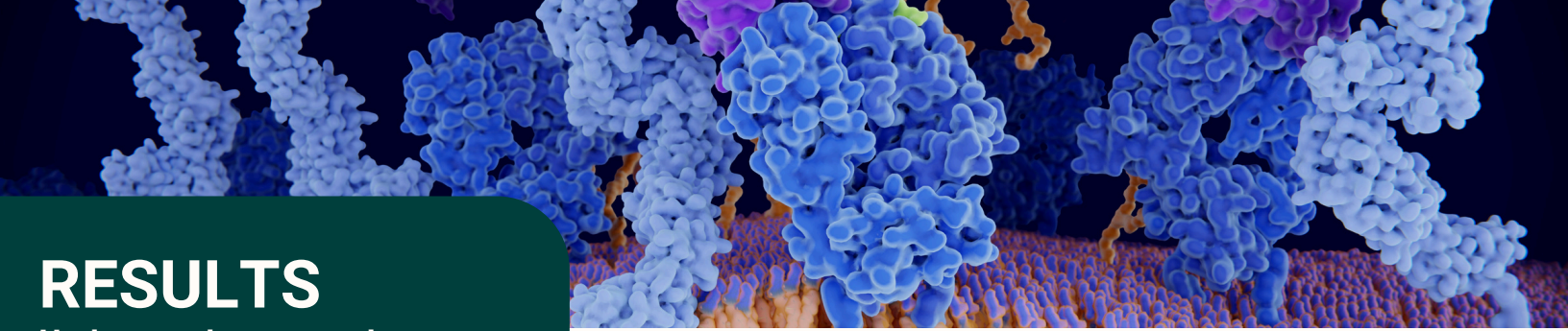
When β -cells release insulin into the bloodstream, an inactive precursor called proinsulin is split into two parts: insulin and C-peptide. Both are secreted in equal amounts, but while insulin acts quickly to regulate blood sugar, C-peptide circulates longer and is not affected by external insulin therapy. Kihealth's analysis measures C-peptide concentration to determine how much insulin your pancreas is naturally producing.

TEST RESULTS

Marker	Result	Optimal Range	Status
C-Peptide	1.2 ng/ml	1.0 - 2.0 ng/ml	Optimal

THE SCALE





RESULTS

Understand your results

Part 2: C-Peptide - Understanding Insulin & Beta cell function

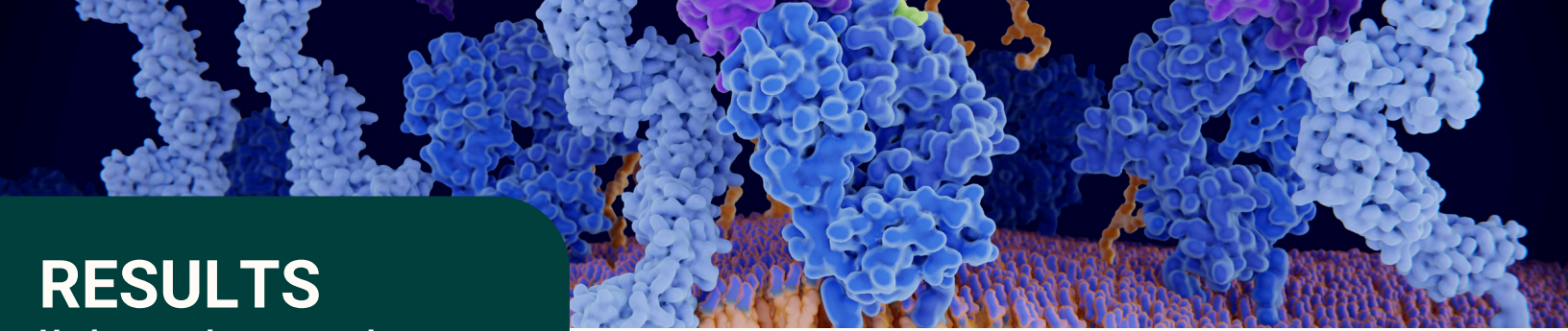
Your Results

- **C-Peptide Score:** Optimal
- **Comparative Analysis:** Your C-peptide result falls within the optimal range, indicating healthy insulin secretion and balanced pancreatic beta-cell activity. This reflects strong metabolic function, stable glucose regulation, and appropriate hormonal response to dietary glucose intake. Maintaining this range supports long-term protection against insulin resistance and metabolic disease.

What This Result Means

- Your test shows healthy, balanced insulin production, reflecting strong pancreatic beta cell function and effective blood sugar control.
- Optimal C-peptide levels indicate that your pancreas is producing the right amount of insulin in response to glucose, supporting metabolic balance and long-term protection against insulin resistance or diabetes.
- Maintaining this result through consistent nutrition, physical activity, and stress management helps preserve pancreatic health and energy stability.





RESULTS

Understand your results

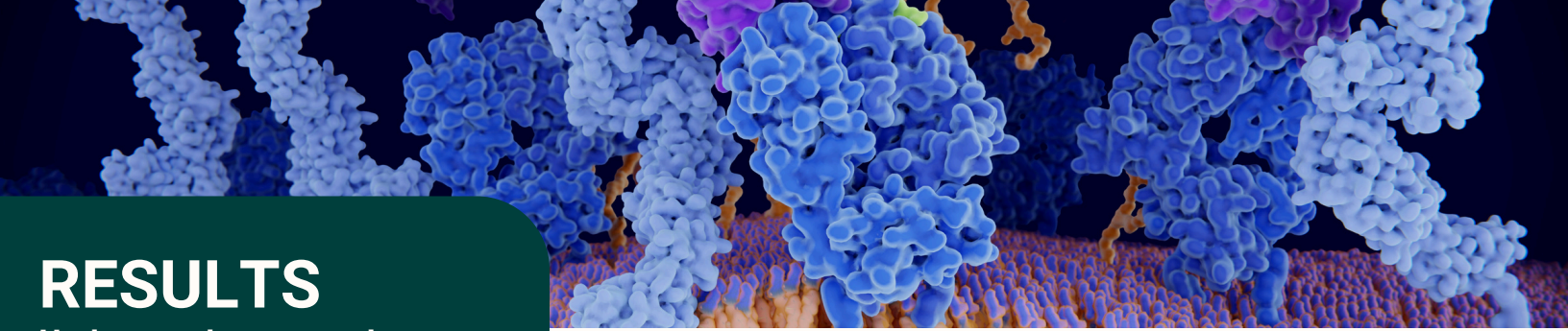
Part 2: C-Peptide - Understanding Insulin & Beta cell function

Potential Contributing Factors

C-peptide levels reflect how actively your pancreas is producing insulin. A variety of biological and lifestyle factors can influence these levels and overall beta cell performance:

- **Diet & Nutrition:** Diets high in refined carbohydrates, sugars, and processed foods increase insulin demand and may elevate C-peptide, while nutrient deficiencies or chronic caloric restriction can suppress insulin output.
- **Body Composition:** Excess body fat, particularly around the abdomen, drives insulin resistance and raises C-peptide. Maintaining a lean, muscular build supports healthy insulin signaling.
- **Physical Activity:** Regular movement enhances glucose uptake by muscles, lowering the pancreas's workload. Sedentary habits contribute to insulin resistance and higher C-peptide levels.
- **Stress & Cortisol:** Chronic stress and poor recovery elevate cortisol, disrupting glucose control and pancreatic function.
- **Sleep Quality:** Inadequate or fragmented sleep impairs hormonal regulation and insulin sensitivity, often leading to higher insulin and C-peptide production.
- **Inflammation & Immune Activity:** Systemic inflammation or autoimmune processes can damage β -cells, reducing insulin and C-peptide output over time.
- **Medications:** Corticosteroids, certain antipsychotics, beta-blockers, and hormonal therapies may alter glucose metabolism and affect insulin secretion.
- **Hormonal Imbalances:** Thyroid, adrenal, or sex-hormone dysregulation can impact glucose handling and pancreatic workload.





RESULTS

Understand your results

Part 2: C-Peptide - Understanding Insulin & β -cell function

Recommendations

Lifestyle Optimization

Your results reflect healthy β -cell activity and balanced insulin production. Continue reinforcing the habits that protect long-term metabolic health:

- **Nutrition:** Follow a whole-food, low-glycemic diet rich in fiber, lean proteins, and healthy fats such as olive oil, nuts, and avocados. Limit processed foods, sugars, and refined grains.
- **Physical Activity:** Keep a routine of at least 150 minutes of moderate exercise weekly, combining aerobic workouts and resistance training to enhance insulin sensitivity.
- **Sleep & Recovery:** Prioritize 7–9 hours of consistent, high-quality sleep to maintain hormonal balance.
- **Stress Management:** Use meditation, journaling, or nature time to keep stress low and preserve insulin responsiveness.
- **Body Composition:** Maintain a stable, healthy body weight and muscle mass to support efficient glucose metabolism.

Ongoing Monitoring / Next Steps

Even with optimal results, routine testing ensures continued beta cell health and early detection of any metabolic shifts:

- Reassess BetaDx, HbA1c, and fasting glucose every 6–12 months.
- Track fasting insulin and calculate HOMA-IR to monitor insulin sensitivity over time.
- If optimizing for performance or longevity, consider using continuous glucose monitoring (CGM) for real time insights into daily glucose dynamics.

Why It Matters

C-peptide is one of the most informative markers for understanding how well your pancreas is functioning and how efficiently your body is producing insulin. Because it is released in equal amounts to insulin but remains in circulation longer, C-peptide serves as a stable indicator of β -cell activity and overall metabolic health. Monitoring C-peptide helps identify early changes in insulin production and sensitivity, often before glucose or HbA1c levels begin to shift. Maintaining balanced C-peptide levels supports optimal energy metabolism, glucose control, and long-term protection against diabetes, cardiovascular disease, and other metabolic complications. By tracking this marker over time, you gain valuable insight into how nutrition, exercise, stress, and lifestyle choices directly affect your pancreatic performance and metabolic resilience.



RESULT INTERPRETATION GUIDE: C-PEPTIDE

The Scale	Reference Range	Notes
Low	< 0.8	Indicates markedly reduced insulin production and diminished beta cell function. This result is associated with impaired glucose regulation and may reflect autoimmune or advanced pancreatic dysfunction requiring medical evaluation.
Low Normal	0.8 - 1.0	Indicates insulin production at the lower end of the healthy range. While not impaired, this pattern suggests limited reserve capacity and potential sensitivity to metabolic stress.
Optimal	1.0 - 2.0	Indicates balanced, healthy insulin production with strong beta cell function and effective glucose regulation. This result reflects stable metabolic health and low current risk.
High Normal	2.1 - 3.0	Indicates increased insulin production consistent with early insulin resistance. This pattern reflects compensatory pancreatic activity and elevated metabolic demand.
Elevated	≥ 3.1	Indicates excessive insulin production and significant metabolic stress. This result is strongly associated with insulin resistance and increased risk of metabolic disease, warranting medical assessment.





RESULTS

Understand your results

Part 3: Hemoglobin A1C - Understanding Your Average Blood Sugar Levels

Description

HbA1c (Hemoglobin A1c) is a blood marker that reflects your average blood glucose levels over the past 2–3 months. It measures the percentage of red blood cells that have glucose attached to them – a process known as glycation. When blood sugar levels remain elevated for extended periods, more glucose binds to hemoglobin, leading to a higher HbA1c percentage. Because red blood cells live for about 90–120 days, HbA1c provides a long-term picture of glucose control, unlike a fasting glucose test, which only shows a single point in time. Measuring HbA1c helps identify whether your body is maintaining healthy glucose regulation, showing early signs of insulin resistance, or meeting the diagnostic criteria for prediabetes or diabetes.

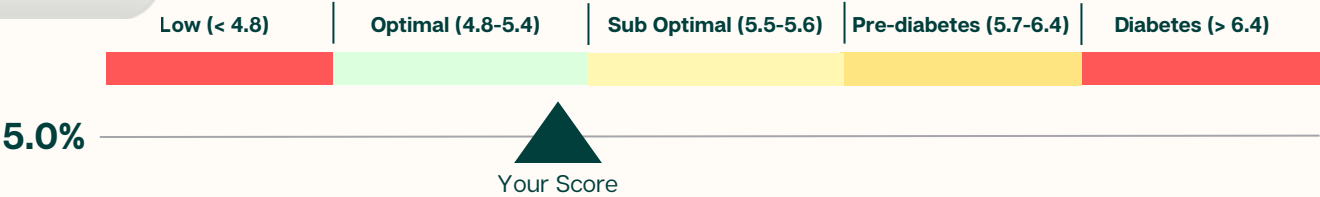
How It Works

When glucose enters your bloodstream, a portion of it attaches to hemoglobin molecules inside red blood cells. This forms glycated hemoglobin (HbA1c). The higher your average blood glucose levels, the greater the percentage of glycated hemoglobin detected in your blood. Because red blood cells have a predictable lifespan of approximately three months, HbA1c serves as a time averaged indicator of blood sugar control during that period. Our analysis measures the percentage of glycated hemoglobin in your sample to evaluate how effectively your body maintains glucose within a healthy range.

TEST RESULTS

Marker	Result	Optimal Range	Status
HbA1c	5.0%	4.8% - 5.4%	Optimal

THE SCALE





RESULTS

Understand your results

Part 3: Hemoglobin A1C - Understanding Your Average Blood Sugar Levels

Your Results

- **HbA1C Result:** Optimal
- **Comparative Analysis:** Your HbA1c result falls within the normal clinical range, indicating healthy average blood glucose levels and strong insulin sensitivity. This reflects effective glucose metabolism and a low risk for diabetes or insulin resistance. Maintaining your current habits around nutrition, exercise, sleep, and stress management will help preserve long-term metabolic stability and overall health.

What This Result Means

Your test shows healthy, stable glucose control, indicating that your body is effectively managing blood sugar through balanced insulin production and utilization. This reflects strong metabolic flexibility, insulin sensitivity, and pancreatic efficiency, all of which protect against insulin resistance, prediabetes, and metabolic disease. Maintaining this result through consistent nutrition, physical activity, quality sleep, and stress management will help preserve long-term energy, cognitive performance, and metabolic resilience.





RESULTS

Understand your results

Part 3: Hemoglobin A1C - Understanding Your Average Blood Sugar Levels

Potential Contributing Factors

HbA1c reflects your average blood glucose control over the past 2–3 months, and several biological, lifestyle, and environmental factors can influence these levels:

- **Diet & Nutrition:** Diets high in refined carbohydrates, added sugars, and processed foods can elevate average glucose levels, while a balanced diet rich in fiber, lean proteins, and healthy fats supports stable blood sugar.
- **Body Composition:** Excess abdominal or visceral fat contributes to insulin resistance, increasing glucose retention and HbA1c levels. Maintaining a healthy weight and muscle mass enhances insulin sensitivity.
- **Physical Activity:** Regular aerobic and resistance exercise improves glucose uptake by muscle tissue and reduces circulating glucose. Sedentary habits allow blood sugar to remain elevated longer after meals.
- **Stress & Cortisol:** Chronic stress raises cortisol and adrenaline, both of which increase glucose production and reduce insulin efficiency, leading to higher HbA1c over time.
- **Sleep Quality:** Poor or inconsistent sleep disrupts hormonal regulation and reduces insulin sensitivity, often resulting in higher average blood sugar levels.
- **Inflammation & Immune Activity:** Chronic inflammation or autoimmune processes can alter insulin production and glucose utilization, influencing HbA1c outcomes.
- **Medications:** Certain medications—such as corticosteroids, beta-blockers, and hormonal therapies—can raise blood sugar or impair glucose control.





RESULTS

Understand your results

Part 3: Hemoglobin A1C - Understanding Your Average Blood Sugar Levels

Recommendations

Lifestyle Optimization: Resilience Maintenance: Reinforce What's Working

You're in a strong metabolic zone your body is efficiently regulating glucose, showing excellent insulin sensitivity. To future-proof this state:

- **Nourish for longevity:** Maintain a nutrient-dense, whole-food diet focused on glycemic control, gut health, and mitochondrial function. Prioritize omega-3s, magnesium, and polyphenols.
- **Train for metabolic flexibility:** Alternate aerobic endurance, resistance training, and short bursts of high-intensity work to maximize glucose uptake and mitochondrial resilience.
- **Optimize circadian biology:** Align meals, sleep, and activity with natural rhythms (daylight exposure, early dinners, and consistent bedtime).
- **Track trends:** Consider annual HbA1c and fasting insulin to monitor for early drift.
- **Cultivate recovery:** Prioritize rest, breathwork, and emotional balance. Chronic stress is a silent disruptor of metabolic health, even when numbers look great.

Ongoing Monitoring / Next Steps

With excellent glucose control, periodic testing supports early detection of shifts and long-term health optimization:

- Recheck HbA1c and fasting glucose every 6-12 months
- Track fasting insulin and HOMA-IR annually to stay ahead of subtle metabolic changes
- Maintain consistent lifestyle habits and log trends over time
- Repeat the Kihealth Health Test every 6-12 months to monitor for balance and stability

Why It Matters

HbA1c is one of the most powerful and reliable markers of long-term metabolic health. It measures the percentage of red blood cells that have glucose attached to them, reflecting your average blood sugar levels over the past 2–3 months. Unlike fasting glucose, which only captures a single point in time, HbA1c provides a comprehensive picture of how consistently your body regulates blood sugar day to day. Even small elevations in HbA1c—within what is still considered the “normal” range—can signal early changes in insulin sensitivity and metabolic balance. Maintaining a healthy HbA1c level helps:

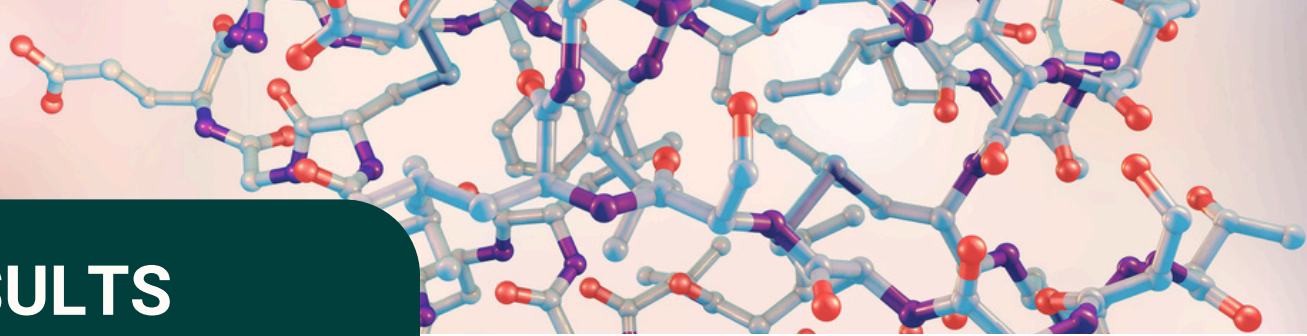
- **Reduce risk of chronic disease:** Lower HbA1c is linked to significantly decreased risk of type 2 diabetes, cardiovascular disease, and neuropathy.
- **Protect long-term organ health:** Stable glucose control prevents oxidative stress and protects the brain, kidneys, eyes, and vascular system.
- **Support energy and cognitive function:** Balanced glucose allows for steady physical and mental performance throughout the day.



RESULT INTERPRETATION GUIDE: A1C

The Scale	Reference Range	Notes
Low	< 4.8%	Indicates lower-than-average blood glucose levels over the past 2–3 months. While this may reflect excellent glucose control, excessively low levels can suggest hypoglycemia, excess insulin activity, or nutritional imbalance.
Optimal	4.8 - 5.4%	Indicates stable, well-regulated blood glucose levels with strong insulin sensitivity and metabolic balance. This result reflects low current risk and effective long-term glucose control.
Sub Optimal	5.5 - 5.6%	Indicates mildly elevated average blood glucose levels consistent with early reductions in insulin sensitivity. This pattern represents a reversible metabolic inflection point and increased future risk if unaddressed.
Pre-diabetes	5.7 - 6.4%	Indicates persistently elevated blood glucose levels consistent with early insulin resistance. This result reflects increased metabolic risk but remains highly responsive to lifestyle intervention.
Diabetes	> 6.4%	Indicates chronically elevated blood glucose levels consistent with diabetes and impaired insulin function. This result is associated with significant metabolic risk and requires medical management to prevent complications.





RESULTS

Understand your results

Part 4: Insulin - Understanding Your Insulin Score

Description

Insulin is a hormone produced by the β -cells of the pancreas that plays a central role in regulating blood sugar and metabolism. When you eat, your blood glucose levels rise, prompting your pancreas to release insulin. This hormone signals cells especially in the muscle, liver, and fat tissue to absorb glucose from the bloodstream and use it for energy or store it for later use. Measuring fasting insulin levels helps evaluate how efficiently your body is using insulin to control blood sugar. Elevated insulin may indicate insulin resistance, a state where cells become less responsive to insulin's signal, forcing the pancreas to produce more to maintain normal glucose levels. Conversely, low insulin levels can signal impaired beta cell function or early type 1 diabetes. Tracking insulin alongside glucose, HbA1c, and C-peptide provides a more complete picture of your metabolic health, insulin sensitivity, and diabetes risk.

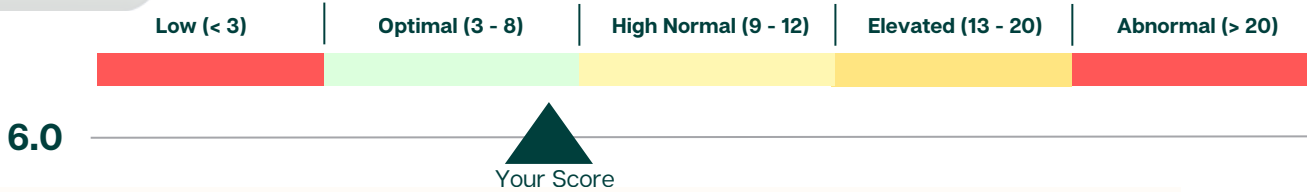
How It Works

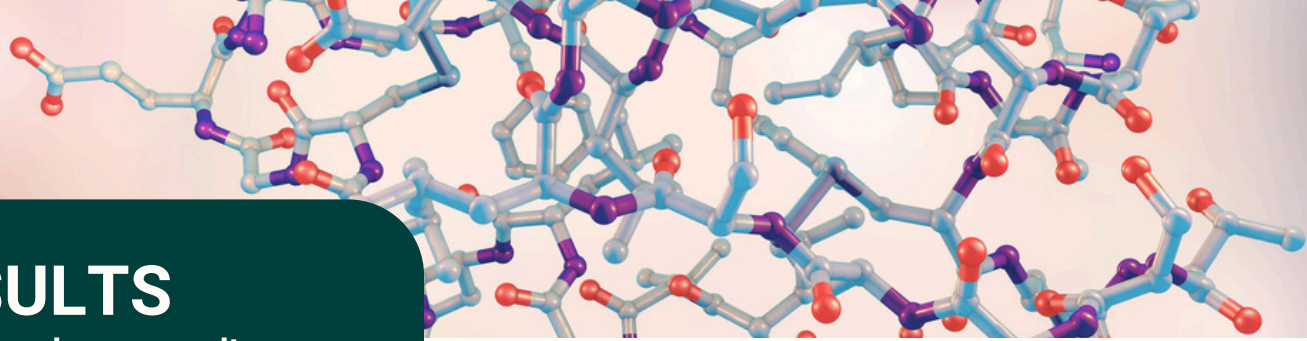
When you eat and blood sugar rises, your pancreas releases insulin, which signals your cells to absorb glucose for energy or storage. In a healthy state, insulin and glucose remain in balance. When cells become insulin resistant, the pancreas must produce more insulin to achieve the same effect, leading to elevated insulin levels over time. Measuring fasting insulin helps reveal how efficiently your body regulates glucose and whether your pancreas is under increased strain.

TEST RESULTS

Marker	Result	Optimal Range	Status
Insulin	6.0 uIU/mL	3 -8 uIU/mL	Optimal

THE SCALE





RESULTS

Understand your results

Part 4: Insulin - Understanding Your Insulin Score

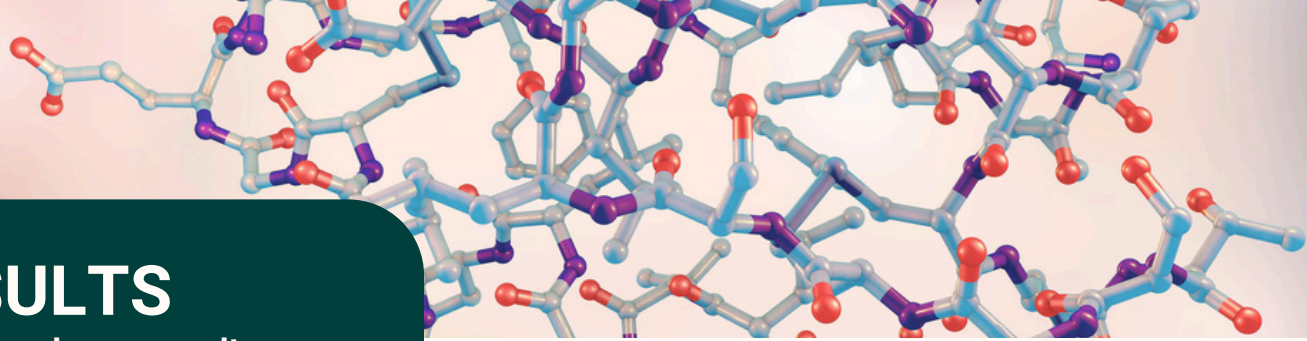
Your Results

- **Insulin Result:** Optimal
- **Comparative Analysis:** Your fasting insulin result falls within the optimal range, reflecting healthy insulin sensitivity and balanced pancreatic activity. This means your body efficiently regulates blood glucose without requiring excess insulin production. Maintaining current habits, balanced nutrition, consistent physical activity, and stress management, will help preserve this strong metabolic function and long-term protection against insulin resistance and diabetes.

What This Result Means

Your test shows balanced fasting insulin levels, indicating that your body is producing just the right amount of insulin to maintain stable glucose levels. This reflects healthy pancreatic function and strong insulin sensitivity—your cells are efficiently absorbing glucose without overworking the pancreas. Maintaining this range is key to long-term metabolic health and protection against insulin resistance, type 2 diabetes, and cardiovascular disease.





RESULTS

Understand your results

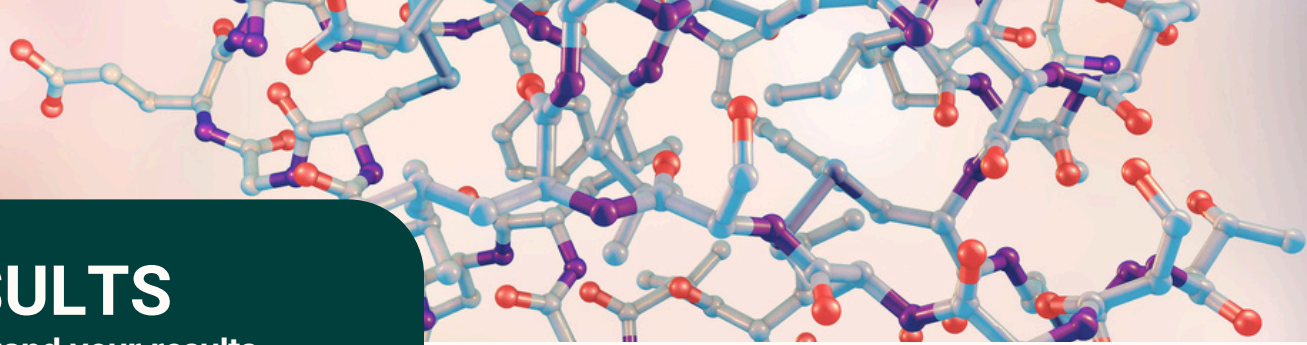
Part 4: Insulin - Understanding Your Insulin Score

Potential Contributing Factors

Insulin levels reflect how efficiently your body regulates glucose and how hard your pancreas must work to maintain balance. A variety of biological, lifestyle, and environmental factors can influence insulin production and sensitivity:

- **Diet & Nutrition:** Diets high in refined carbohydrates, added sugars, and processed foods increase insulin demand and can lead to insulin resistance. A balanced diet rich in fiber, lean protein, and healthy fats helps stabilize insulin response and blood sugar levels.
- **Body Composition:** Excess abdominal or visceral fat decreases insulin sensitivity, forcing the pancreas to produce more insulin. Maintaining healthy body composition through fat reduction and muscle building supports optimal insulin efficiency.
- **Physical Activity:** Regular exercise improves glucose uptake by muscles and lowers circulating insulin. Inactivity allows insulin levels to rise as the body compensates for reduced glucose utilization.
- **Stress & Cortisol:** Chronic stress elevates cortisol and adrenaline, which can increase glucose production and blunt insulin's effectiveness, leading to higher baseline insulin levels.
- **Medications:** Corticosteroids, certain antipsychotics, hormonal therapies, and beta-blockers may raise insulin levels or reduce insulin sensitivity.
- **Hormonal Imbalances:** Thyroid, adrenal, and sex-hormone imbalances can influence insulin production, glucose utilization, and fat storage patterns.





RESULTS

Understand your results

Part 4: Insulin - Understanding Your Insulin Score

Recommendations

Your results reflect strong insulin sensitivity and efficient glucose control. Continue reinforcing the habits that sustain metabolic balance and protect long-term pancreatic health:

- **Nutrition:** Follow a whole-food, low-glycemic diet rich in vegetables, fiber, lean proteins, and healthy fats (olive oil, avocados, nuts). Limit added sugars and processed foods.
- **Physical Activity:** Maintain at least 150 minutes per week of moderate exercise, combining aerobic and resistance training to support insulin efficiency.
- **Sleep & Recovery:** Prioritize consistent, restorative sleep to maintain hormonal regulation.
- **Stress Management:** Engage in regular relaxation or grounding activities to minimize cortisol spikes that can impact insulin.
- **Body Composition:** Preserve muscle tone and healthy body fat percentage to keep insulin sensitivity high.

Ongoing Monitoring / Next Steps

With healthy insulin sensitivity and balanced glucose control, periodic testing ensures continued stability and early detection of change:

- Recheck fasting insulin, glucose, and HbA1c every 6–12 months to confirm ongoing balance.
- Track HOMA-IR annually to stay ahead of subtle metabolic shifts.
- Maintain steady lifestyle habits, balanced diet, regular exercise, consistent sleep and record your trends over time.
- Repeat the Kihealth Health Test every 6–12 months to monitor metabolic health and confirm continued insulin efficiency.

Why It Matters

Insulin is a key hormone that regulates how your body uses and stores glucose for energy. When insulin function becomes imbalanced, either too low or too high, it can silently drive metabolic changes that lead to insulin resistance, prediabetes, or type 2 diabetes. Tracking fasting insulin provides an early view of your metabolic efficiency and insulin sensitivity, often revealing hidden risks years before glucose or HbA1c levels rise. Balanced insulin levels support:

- Steady energy and stable blood sugar
- Healthy body composition and reduced fat storage
- Protection against inflammation and cardiovascular risk

By monitoring insulin regularly and maintaining healthy habits, you can protect pancreatic function, improve metabolic performance, and strengthen long-term vitality.



RESULT INTERPRETATION GUIDE: INSULIN

The Scale	Reference Range	Notes
Low	< 3	Indicates reduced fasting insulin production. This may reflect strong insulin sensitivity and efficient glucose regulation, or—if glucose is elevated—possible diminished beta cell function requiring further evaluation.
Optimal	3 - 8	Indicates balanced fasting insulin production. This reflects strong insulin sensitivity and effective glucose regulation, with healthy pancreatic function and low current metabolic risk.
High Normal	9 - 12	Indicates fasting insulin at the upper end of the healthy range, reflecting early compensatory insulin production. Cells are becoming slightly less responsive to insulin, but blood glucose typically remains normal. Lifestyle adjustments can restore optimal insulin efficiency.
Elevated	13 - 20	Indicates above-normal fasting insulin, consistent with established insulin resistance. The pancreas is working harder to maintain glucose control, and sustained elevation increases risk of progression toward prediabetes or metabolic syndrome.
Abnormal	> 20	Indicates significantly elevated fasting insulin and advanced insulin resistance. This pattern reflects substantial metabolic strain and increased cardiometabolic risk. Early intervention is recommended to reduce insulin burden, improve sensitivity, and protect long-term metabolic health.





RESOURCES

The How

6 Key Categories for Optimized Health

1. Nutrition and Diet

- **Balanced Diet:** Emphasize whole foods like fruits, vegetables, lean proteins, and healthy fats. Avoid processed foods, refined sugars, and high-glycemic-index foods to maintain stable blood sugar levels.
- **Anti-Inflammatory Foods:** Incorporate foods that reduce inflammation, such as fatty fish, nuts, seeds, olive oil, and a variety of colorful fruits and vegetables.
- **Hydration:** Drink plenty of water rich in minerals to stay hydrated and support metabolic processes.

2. Physical Activity

- **Regular Exercise:** Engage in at least 150 minutes of moderate aerobic activity or 75 minutes of vigorous activity each week. Include strength training exercises at least twice a week to improve muscle mass and insulin sensitivity.
- **Daily Movement:** Avoid prolonged sitting by incorporating activities like walking, stretching, or using a standing desk throughout the day.

3. Sleep

- **Quality Sleep:** Aim for 7-9 hours of quality sleep per night. Poor sleep can negatively affect blood sugar regulation and increase inflammation.
- **Consistent Schedule:** Maintain a regular sleep schedule to support your circadian rhythm and overall health.

4. Stress Management

- **Mindfulness and Relaxation:** Practice stress-reducing techniques such as mindfulness, meditation, yoga, or deep breathing exercises to lower stress levels and reduce inflammation.
- **Hobbies and Leisure Activities:** Engage in activities that bring you joy and relaxation to manage stress effectively.





RESOURCES

The How

6 Key Categories for Optimized Health

5. Supplementation

- **Essential Nutrients:** Ensure adequate intake of vitamins and minerals, such as Vitamin D, Magnesium, and Omega-3 fatty acids, which support metabolic health and reduce inflammation.
- **Consultation:** Always consult with a healthcare provider before starting any new supplements.

6. Lifestyle and Behavioral Changes

- **Avoid Smoking:** Smoking can increase inflammation and the risk of metabolic diseases. Quitting smoking is essential for improving overall health.
- **Limit Alcohol:** Moderate alcohol consumption, as excessive intake can adversely affect metabolic health and liver function.

By focusing on these key categories, you can take comprehensive steps towards optimizing your overall health and metabolic health. For personalized advice, it's always best to consult with healthcare professionals who can tailor recommendations to your specific needs and conditions.

Why is metabolic health considered so central to optimal health and being able to prevent disease?

- **Energy Regulation:** At its core, metabolism refers to the myriad chemical reactions that produce and use energy within our cells. This energy powers nearly every cellular function. Any disruption in energy production, regulation, or utilization can lead to cellular dysfunction.
- **Inflammation:** Metabolic imbalances can induce chronic low-level inflammation. This state, often termed "meta-inflammation," is now linked to a host of conditions from cardiovascular disease to cancer, neurodegenerative disorders, and more.





RESOURCES

The How

- **Insulin Resistance:** Insulin is a critical hormone for regulating glucose uptake and energy storage. Insulin resistance, a hallmark of poor metabolic health, increases the risk of type 2 diabetes, cardiovascular diseases, and some cancers.
- **Hormonal Disruptions:** Metabolic health influences the balance of many hormones beyond insulin, including leptin (related to hunger and energy storage), ghrelin (hunger hormone), and hormones related to stress, like cortisol. Imbalances can contribute to a range of disorders, from obesity to depression.
- **Lipid Dysregulation:** Poor metabolic health often comes with abnormal lipid profiles, including high levels of low-density lipoprotein (LDL) cholesterol or triglycerides, which are risk factors for atherosclerosis and subsequent heart diseases.
- **Endothelial Dysfunction:** The endothelium, a thin layer of cells lining our blood vessels, plays a vital role in vascular health. Metabolic disorders can impair its function, leading to a higher risk of hypertension, heart diseases, and stroke.
- **Obesity:** One of the visible signs of metabolic dysfunction is obesity, particularly central or abdominal obesity. Adipose tissue, especially when in excess, is not just a passive storage depot. It releases inflammatory cytokines and can profoundly impact overall health, increasing the risk of numerous diseases.
- **Cellular Senescence:** Poor metabolic health can accelerate cellular aging or senescence. Senescent cells can contribute to tissue dysfunction and inflammation, playing roles in age-related diseases.



HEALTH JOURNEY

The When

Retesting

Your metabolic health status can fluctuate due to age, lifestyle changes, and various health interventions. Therefore, it is critical to take the Metabolic Health Test at regular intervals to monitor these changes accurately.

- **Optimal Range:** If your results are within the optimal range and there have been no significant changes in lifestyle, nutrition, or health status, consider retesting every 6-12 months.
- **Non-Optimal Range:** If your Beta Cell test results indicate values outside the healthy range, retesting every 3-6 months is advisable after implementing steps to improve your metabolic health.

Remember, finding the right strategies to improve your health may require some trial and error. Regular testing is essential to track your progress and assess the effectiveness of your interventions.

Thank You

We are committed to supporting you on your journey to optimal health. Regular monitoring and proactive health management are key components of preventing and managing diabetes. By following the recommendations provided in this report, you can make informed decisions about your health and take steps towards maintaining a healthy metabolism and blood sugar levels.

Thank you for choosing Kihealth as your partner in health. Stay proactive, stay informed, and take charge of your well-being. For updated recommendations and resources to facilitate your health journey, visit our website and follow us on social media.



Questions?

If you have any questions or concerns, don't hesitate to contact us at:

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We want to thank you for letting us be a part of your journey for optimized health.

Disclaimer

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The Dawn of a New Era in Health is Here

Questions? Contact us at help@kihealth.com