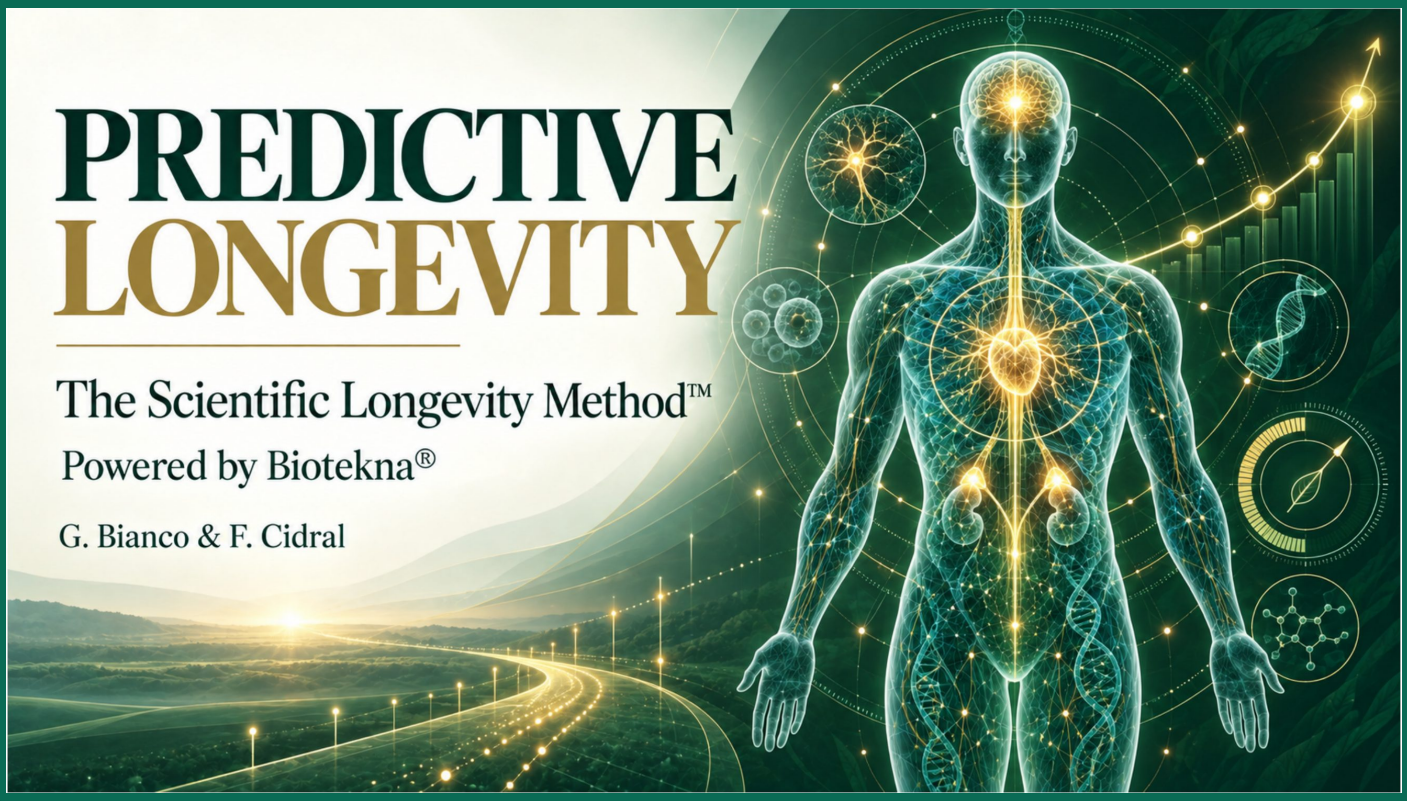
PREDICTIVE LONGEVITY

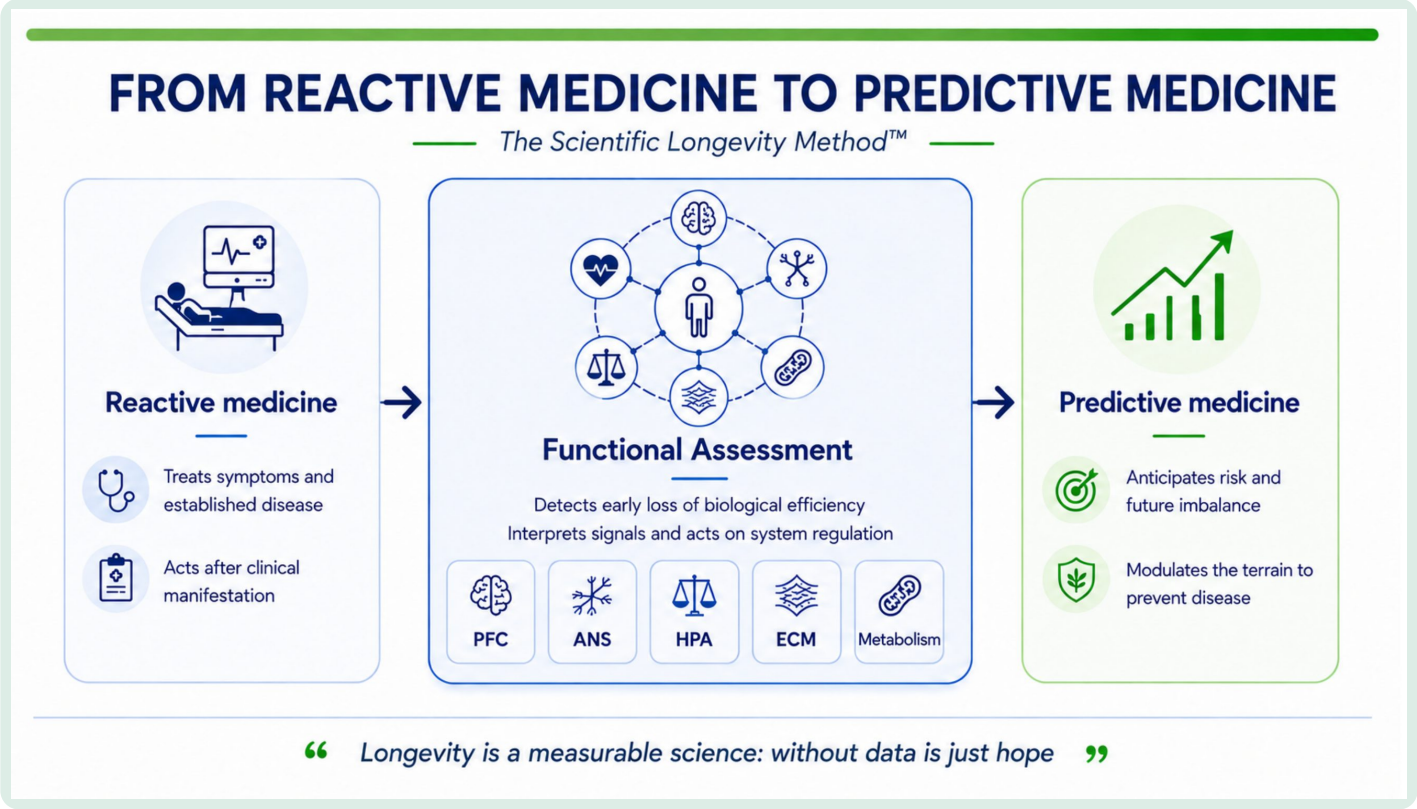


Predictive Longevity is the second clinical step of the Scientific Longevity Method. It extends Longevity Mapping from autonomic expression to an integrated assessment of central regulation, endocrine and metabolic function, body composition, and future relative-risk trajectories. HEG explores prefrontal cortical metabolism and blood flow. PPG describes autonomic regulation and adaptability. BIA-ACC adds the HPA axis, cortisol rhythm, hydration, extracellular conditions, muscle, bone, and intramuscular fat. The OSO Test organizes the current physiological profile, while the Predictive Health Index uses artificial intelligence to model five-year relative risk. The result is a personalized and repeatable pathway that connects assessment, intervention, monitoring, and objective reassessment.

ASSESS - RESTORE - MONITOR - REASSESS

Integrated physiology translated into personalized and measurable clinical action.

From Reactive Medicine to Predictive Medicine



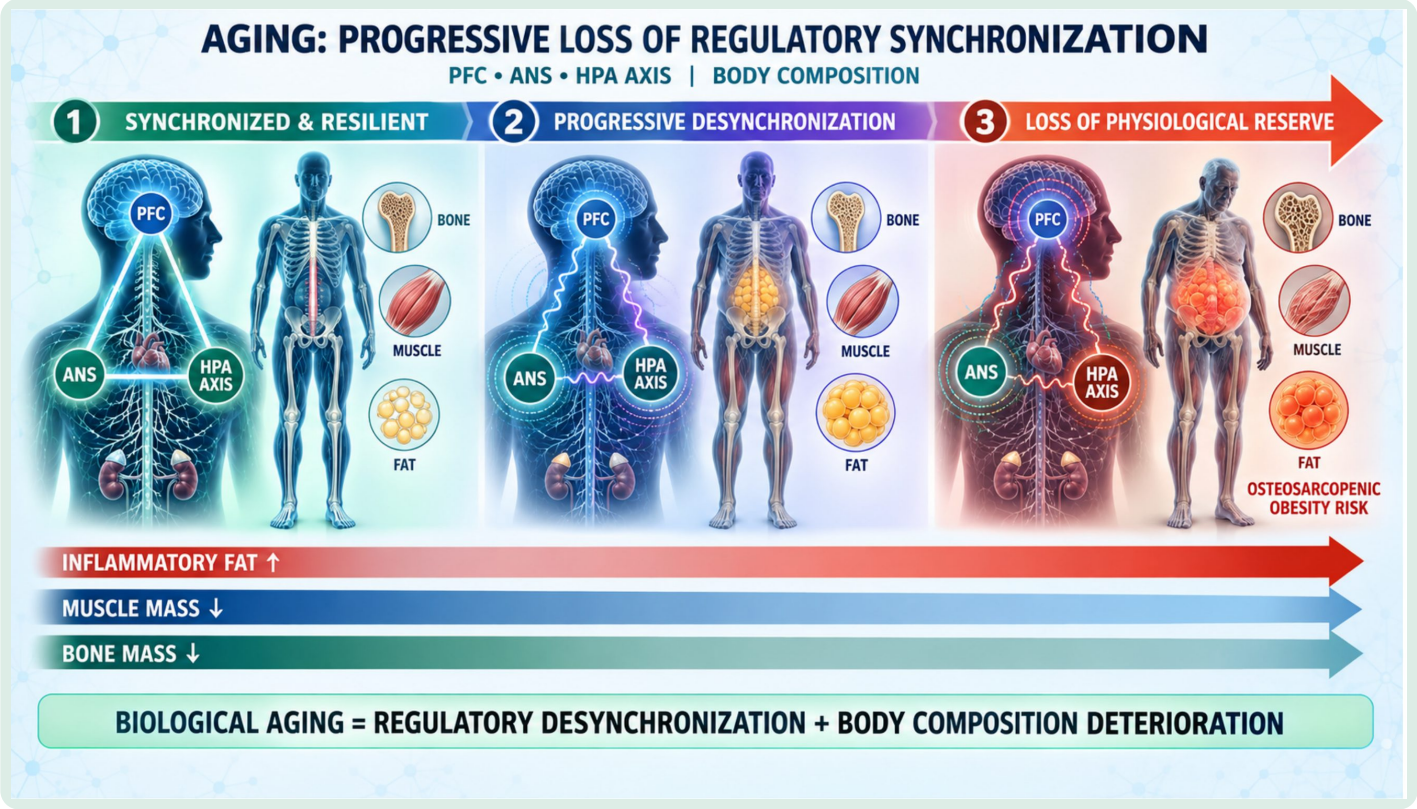
OVERVIEW

Reactive medicine remains essential for diagnosing and treating symptoms and established disease, but it usually acts after a clinical manifestation has appeared. Predictive Longevity adds an earlier functional layer. It evaluates the systems that regulate adaptation before loss of efficiency becomes fixed or clinically obvious. The assessment integrates the prefrontal cortex, autonomic nervous system, HPA axis, extracellular environment, metabolism, and body composition. These measurements do not replace conventional diagnosis. They help the clinician recognize vulnerability, identify modifiable physiological patterns, and personalize prevention. Reassessment then shows whether the patient is moving toward greater resilience or toward a higher-risk profile. In this framework, longevity becomes a measurable clinical process rather than an abstract promise.

KEY MESSAGE

Predictive medicine identifies early loss of biological efficiency and acts on modifiable physiology.

Aging and Regulatory Desynchronization



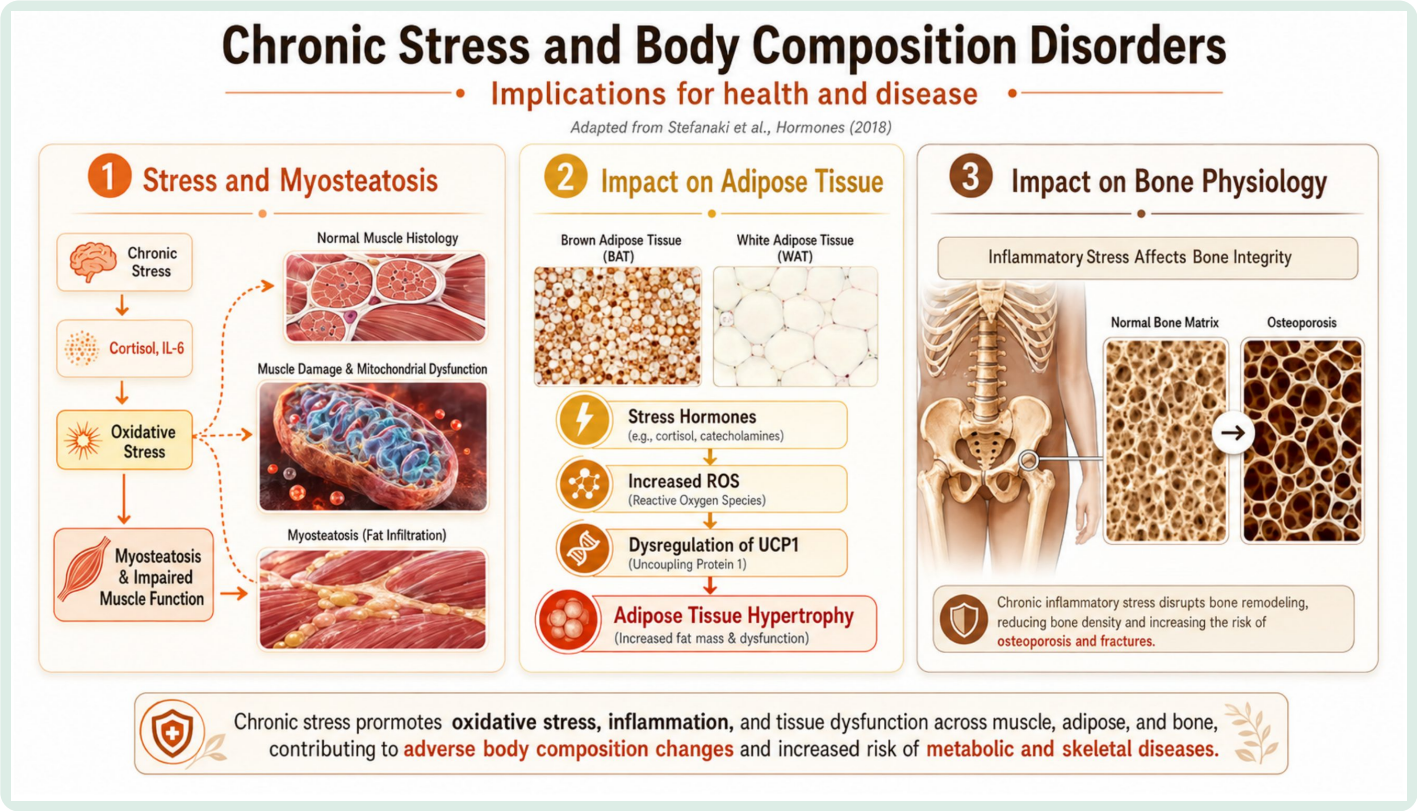
OVERVIEW

Healthy aging depends on synchronization. The prefrontal cortex, autonomic nervous system, HPA axis, metabolism, and body tissues must continuously exchange information and adapt to changing demands. In a resilient organism, these systems remain coordinated and physiological reserve is preserved. With progressive desynchronization, stress responses become less flexible, low-grade inflammation increases, and recovery becomes slower. At the same time, visceral and intramuscular fat tend to rise while muscle mass, muscle quality, and bone integrity decline. Biological aging can therefore be viewed as the interaction of two processes: loss of regulatory synchronization and deterioration of body composition. Predictive Longevity is designed to make both processes visible, relate them to one another, and identify the points at which personalized intervention may still change their direction.

KEY MESSAGE

Biological aging combines regulatory desynchronization with progressive body-composition deterioration.

Chronic Stress and Body Composition Disorders



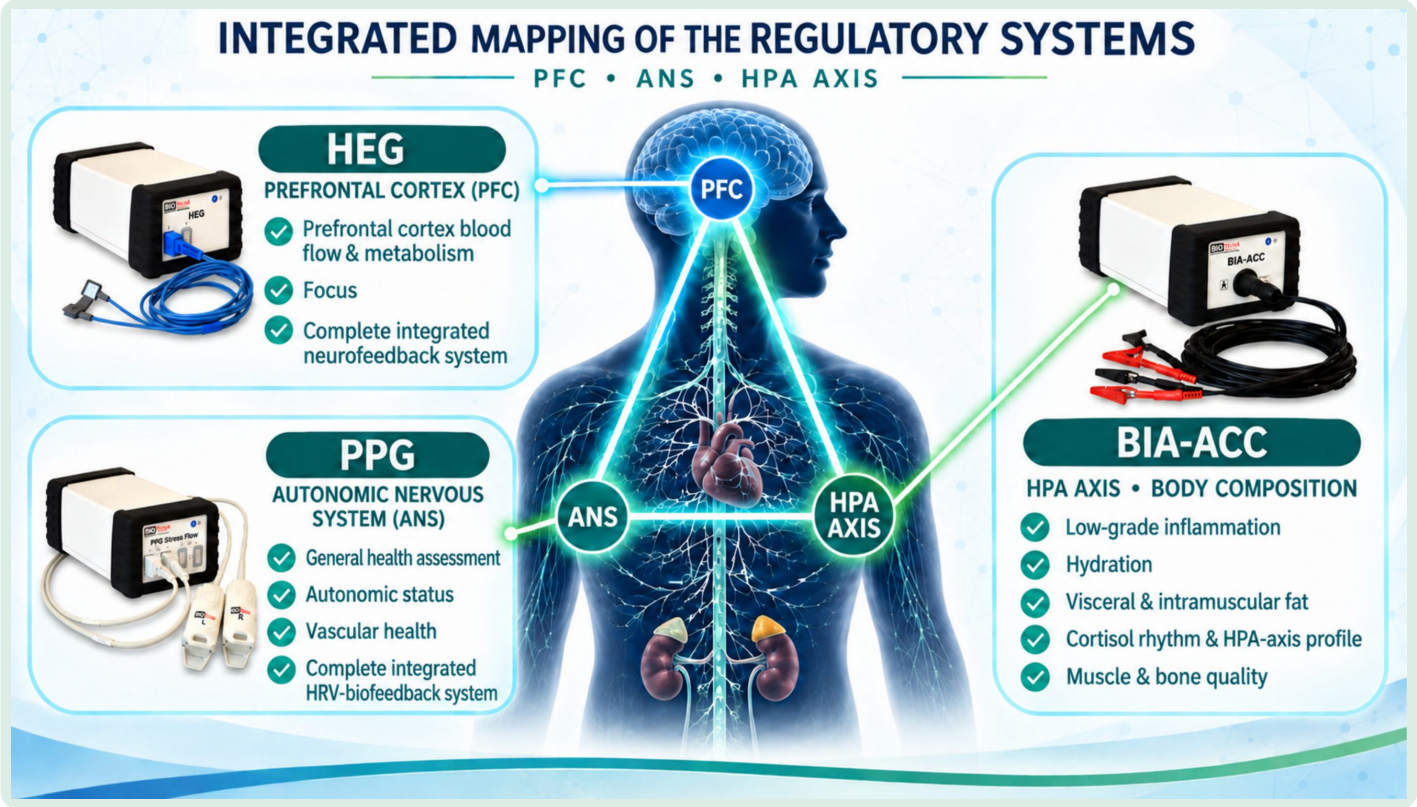
OVERVIEW

Chronic stress affects the tissues that determine body composition. Sustained cortisol and catecholamine signaling, together with oxidative stress, may promote mitochondrial dysfunction and fat infiltration within skeletal muscle. This contributes to myosteatosis, reduced muscle quality, and impaired physical function. In adipose tissue, stress-related signaling can alter thermogenic regulation, increase reactive oxygen species, and favor hypertrophy and dysfunction of white adipose tissue. Persistent inflammatory signaling can also disturb bone remodeling, reduce mineral integrity, and increase skeletal vulnerability. These processes interact through endocrine, metabolic, and inflammatory pathways. Adverse body composition is therefore not explained only by energy intake and physical activity. It can also represent the structural expression of prolonged dysregulation across the stress system, metabolism, muscle, adipose tissue, and bone.

KEY MESSAGE

Chronic stress can translate regulatory dysfunction into measurable changes in muscle, fat, and bone.

Integrated Mapping of the Regulatory Systems



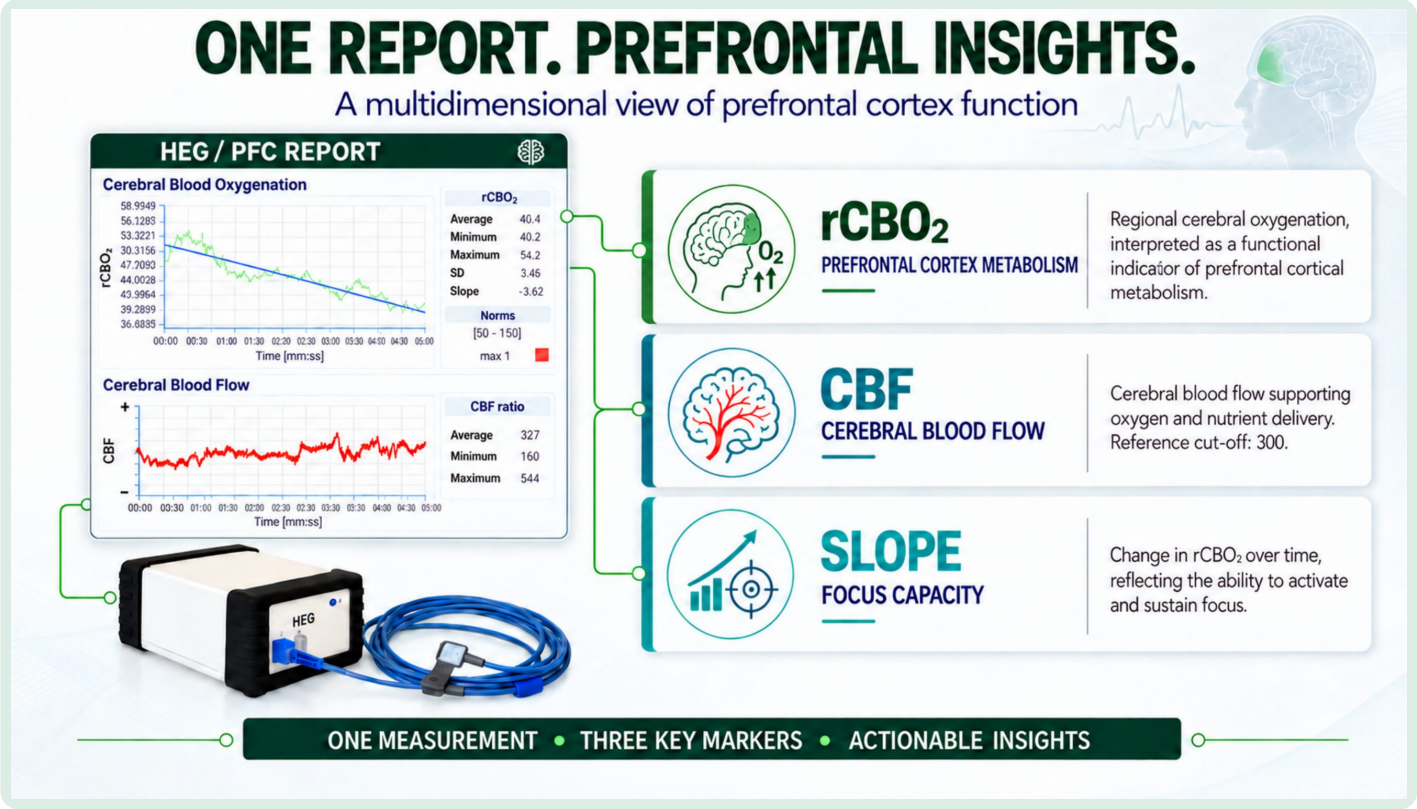
OVERVIEW

Longevity Mapping begins with autonomic analysis because the autonomic nervous system is the interface between the brain and the body. Its activity expresses the balance among multiple regulatory systems and coordinates cardiovascular, inflammatory, metabolic, and adaptive responses. Predictive Longevity extends the observation upstream with HEG. HEG evaluates prefrontal cortical blood flow and metabolism and helps describe the functional relationship among the prefrontal cortex, limbic system, and autonomic output. BIA-ACC completes the map by adding the endocrine and humoral dimension, particularly HPA-axis regulation and cortisol rhythm, together with metabolism and body composition. The three assessments are complementary: PPG shows autonomic expression, HEG examines central regulation, and BIA-ACC describes the endocrine, metabolic, and structural terrain in which regulation occurs.

KEY MESSAGE

PPG, HEG, and BIA-ACC connect autonomic expression, central control, and endocrine-metabolic regulation.

One Report Three Prefrontal Markers



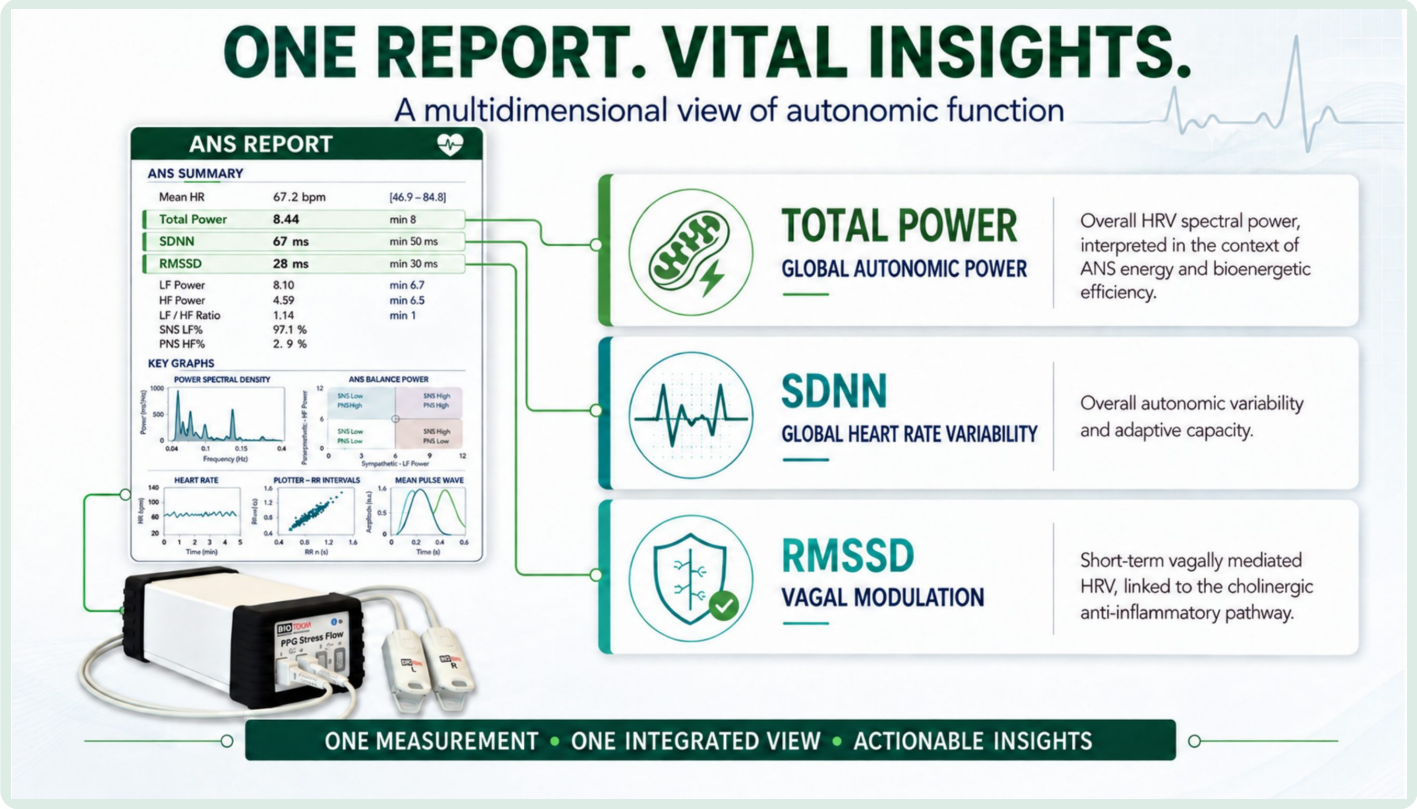
OVERVIEW

The HEG report provides a multidimensional view of prefrontal cortex function through three related markers. Relative cerebral blood oxygenation, or rCBO2, is interpreted as a functional indicator of prefrontal cortical metabolism. Cerebral blood flow, or CBF, describes the delivery of oxygen and nutrients to the tissue; within this framework, 300 is used as the reference cut-off. The slope represents the change in rCBO2 during the measurement and reflects the capacity to activate the prefrontal cortex and sustain focus over time. No single value should be interpreted alone. The level, dynamic response, clinical context, and relationship among the three markers are considered together. This integrated interpretation supports neurofeedback planning and allows the central response to be monitored through repeat assessment.

KEY MESSAGE

rCBO2, CBF, and slope describe prefrontal metabolism, perfusion, and sustained activation.

One Report Vital Autonomic Insights



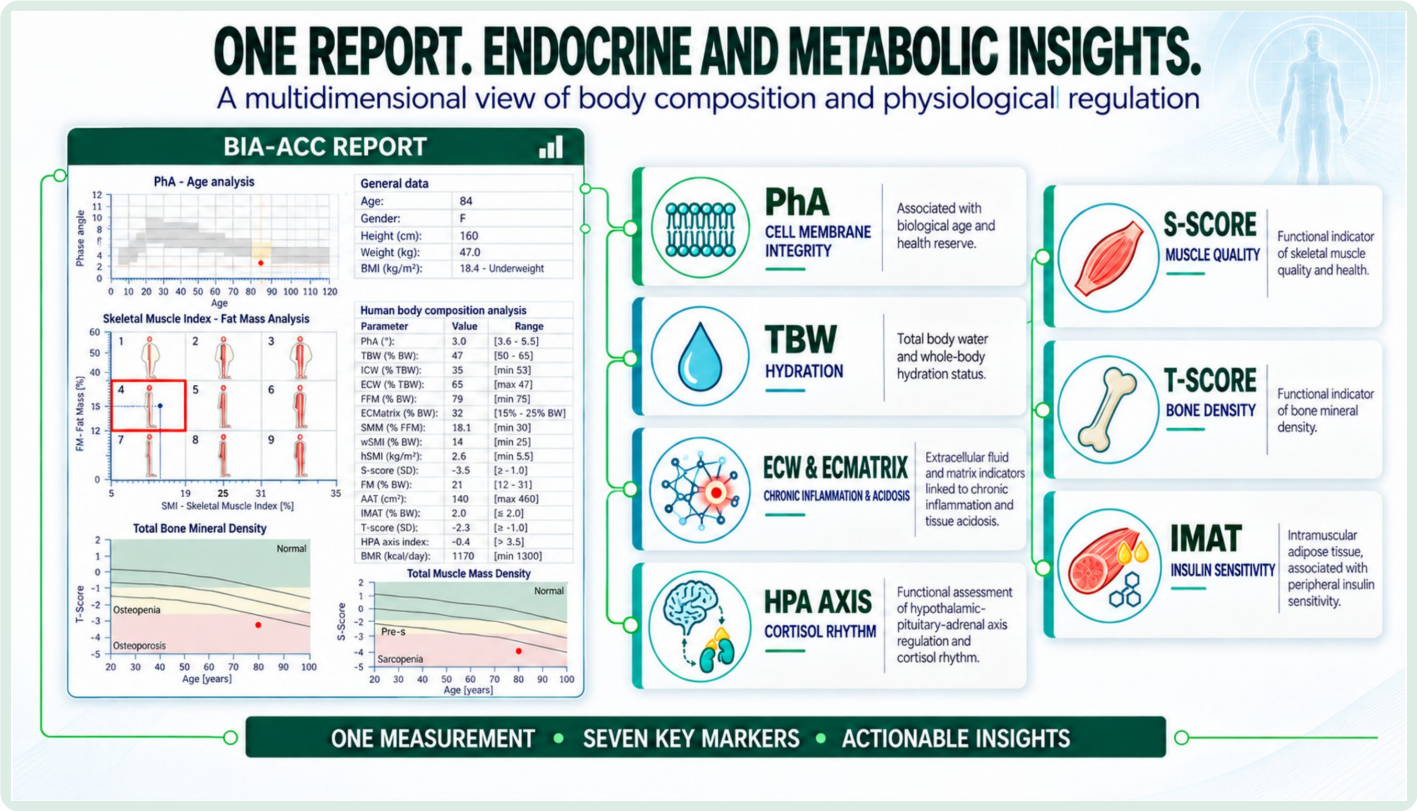
OVERVIEW

The PPG and HRV report summarizes autonomic function through complementary markers. Total Power represents overall spectral power and provides a broad view of autonomic activity and regulatory energy. SDNN describes overall heart-rate variability and the organism's general adaptive capacity. RMSSD focuses on short-term, vagally mediated variability and is linked to parasympathetic modulation and the cholinergic anti-inflammatory pathway. These markers are interpreted together with heart rate, frequency-domain distribution, tachogram morphology, breathing, symptoms, medication, and measurement quality. The objective is not to classify one number as normal or abnormal in isolation. It is to recognize the patient's regulatory pattern, determine whether sympathetic and parasympathetic responses remain flexible, and identify a biofeedback strategy that can be tested and monitored longitudinally.

KEY MESSAGE

Autonomic markers become clinically useful when they are integrated as a regulatory pattern.

One Report Seven Key Markers



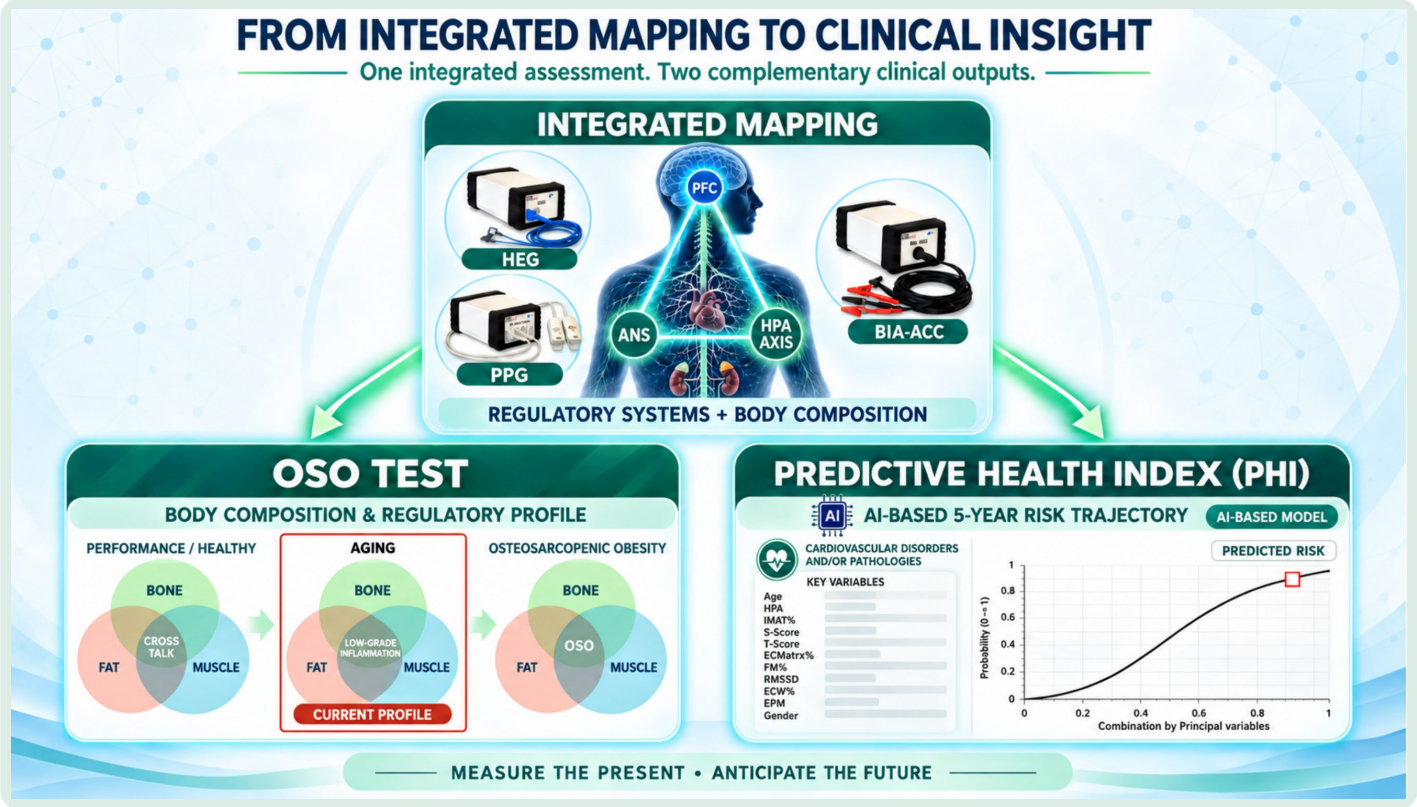
OVERVIEW

BIA-ACC adds seven clinically relevant markers. Phase angle reflects cell-membrane integrity and is associated with biological age and health reserve. Total body water describes hydration, while extracellular water and extracellular matrix values help characterize capillary permeability, chronic inflammation, and tissue acidosis. The HPA-axis index provides a functional view of cortisol rhythm and stress-system regulation. The S-score describes skeletal muscle quality, the T-score describes bone mineral density, and IMAT measures intramuscular adipose tissue, which is associated with peripheral insulin sensitivity. The strength of this assessment lies in integration. It connects endocrine regulation with hydration, tissue quality, muscle, bone, and fat distribution, providing the physiological context needed to interpret central and autonomic findings more accurately.

KEY MESSAGE

BIA-ACC completes regulatory mapping with endocrine, metabolic, hydration, muscle, bone, and fat markers.

From Integrated Mapping to Clinical Insight



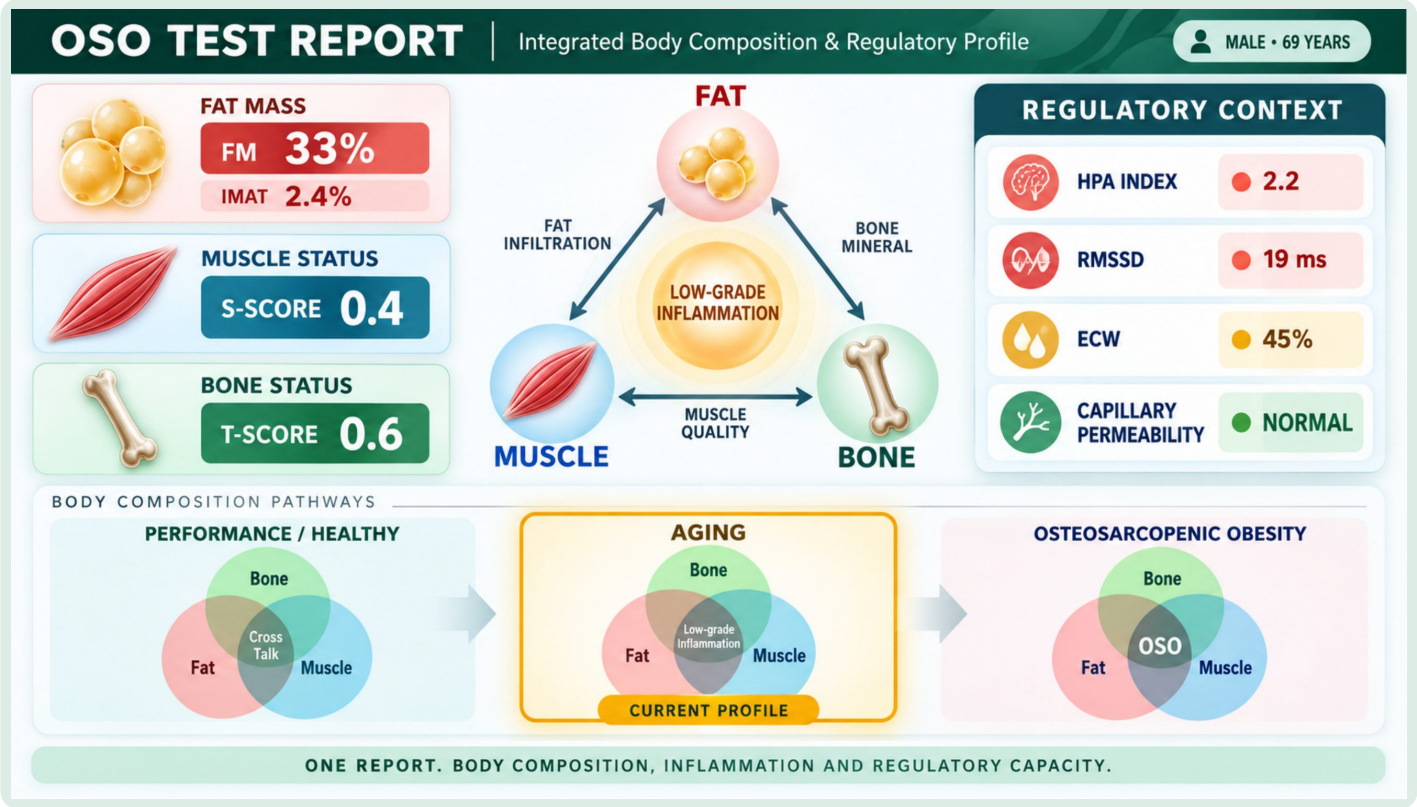
OVERVIEW

Integrated Mapping produces two complementary clinical outputs. The OSO Test describes the patient's current body-composition and regulatory profile. It shows the balance among bone, muscle, and fat together with HPA-axis activity, autonomic regulation, tissue hydration, and extracellular conditions. The Predictive Health Index, or PHI, uses the same multidimensional dataset to estimate five-year relative-risk trajectories. One output describes the present physiological profile; the other models how the current combination of variables relates to future risk. Together they allow the clinician to identify modifiable vulnerabilities, translate measurements into a personalized plan, and repeat the same assessment after intervention. The direction of change then becomes a clinical outcome in its own right.

KEY MESSAGE

The OSO Test measures the present profile while the PHI models the future trajectory.

OSO Test Integrated Profile



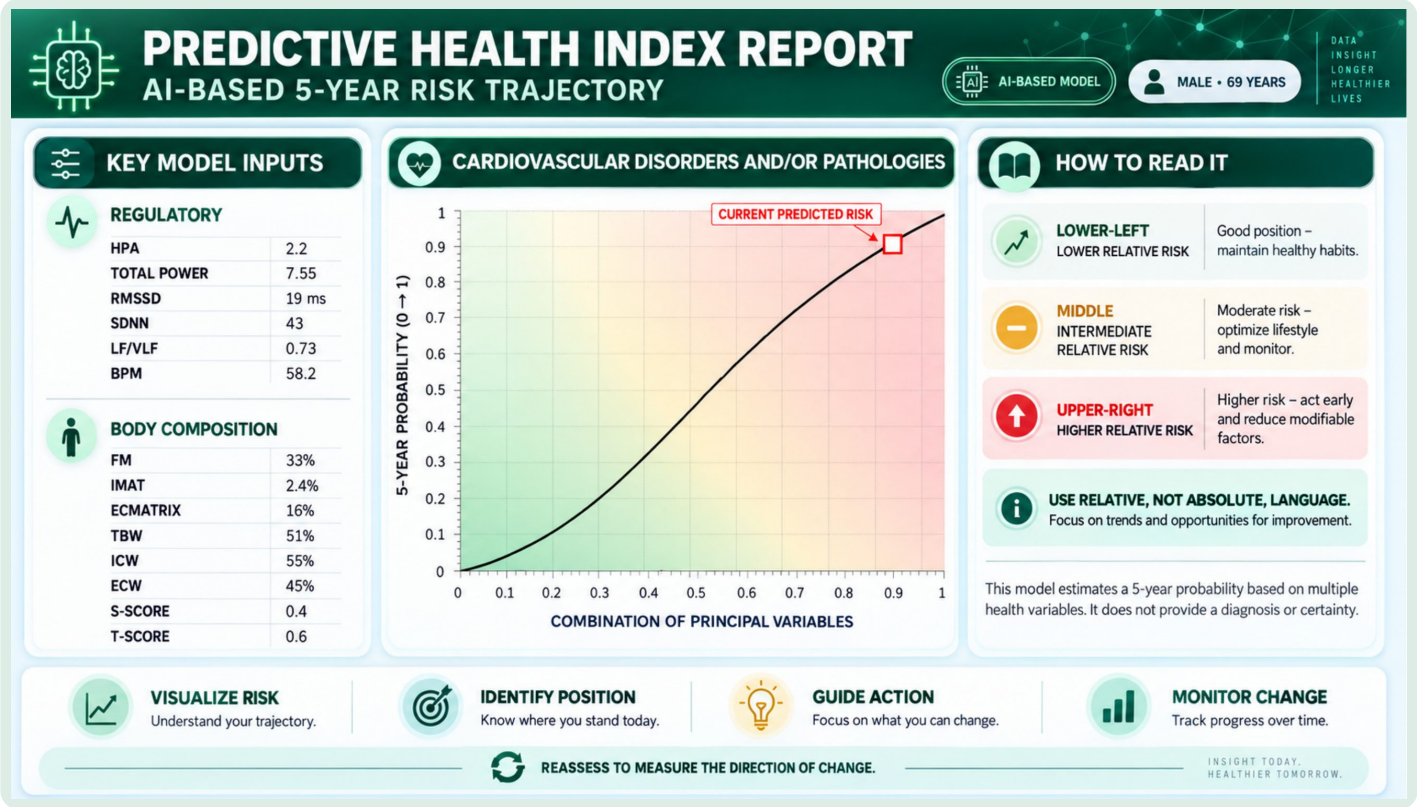
OVERVIEW

The OSO Test converts multiple measurements into an integrated body-composition and regulatory profile. It combines fat mass and intramuscular adipose tissue with muscle and bone scores, then places these findings within a regulatory context using the HPA index, RMSSD, extracellular water, and capillary permeability. The diagrams represent clinically meaningful body-composition pathways, including healthy aging and performance, altered adipose distribution, and osteosarcopenic obesity. This matters because body weight and BMI can conceal very different physiology. A patient may have an apparently acceptable weight but poor muscle quality, excess intramuscular fat, altered extracellular fluid, reduced bone density, or limited autonomic reserve. The report supports a more precise clinical decision by showing how structural and regulatory variables interact in the individual patient.

KEY MESSAGE

Body composition is interpreted together with inflammation and regulatory capacity, not by weight alone.

Five Year Relative Risk Trajectory



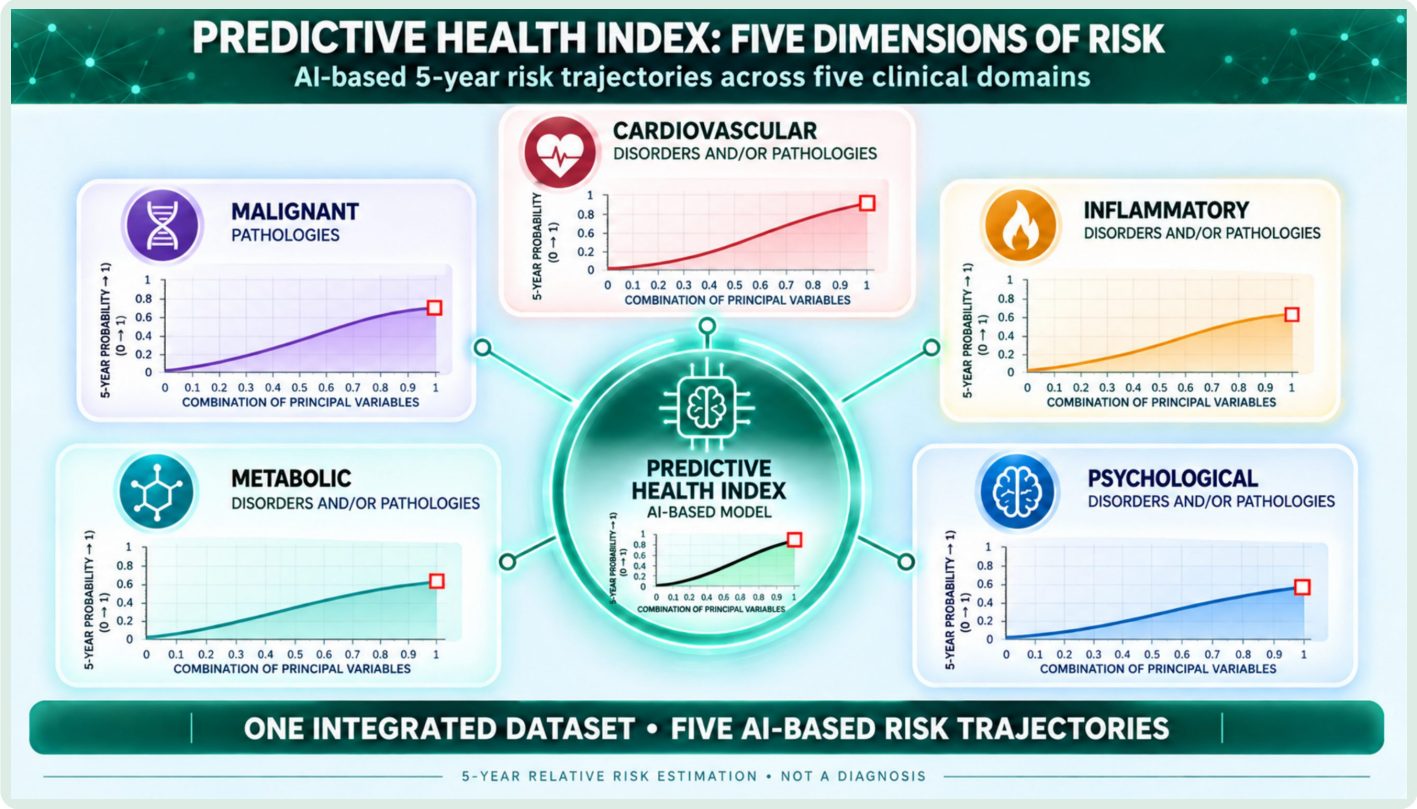
OVERVIEW

The Predictive Health Index combines regulation-system and body-composition variables in an AI-based model that estimates a five-year probability. The graph shows the patient's position along a relative-risk trajectory. A lower-left position indicates a more favorable profile. The middle suggests intermediate relative risk and an opportunity to optimize lifestyle and monitoring. The upper-right indicates higher relative risk and a stronger need to act on modifiable factors. The language must remain precise: this is relative, not absolute, risk. The PHI does not provide a diagnosis or certainty about a future event. Its clinical value is to visualize trajectory, identify the current position, guide personalized action, and monitor change. Reassessment is essential because movement over time may be more informative than a single baseline value.

KEY MESSAGE

The PHI visualizes relative risk and makes the direction of change measurable over time.

Five Dimensions of Risk



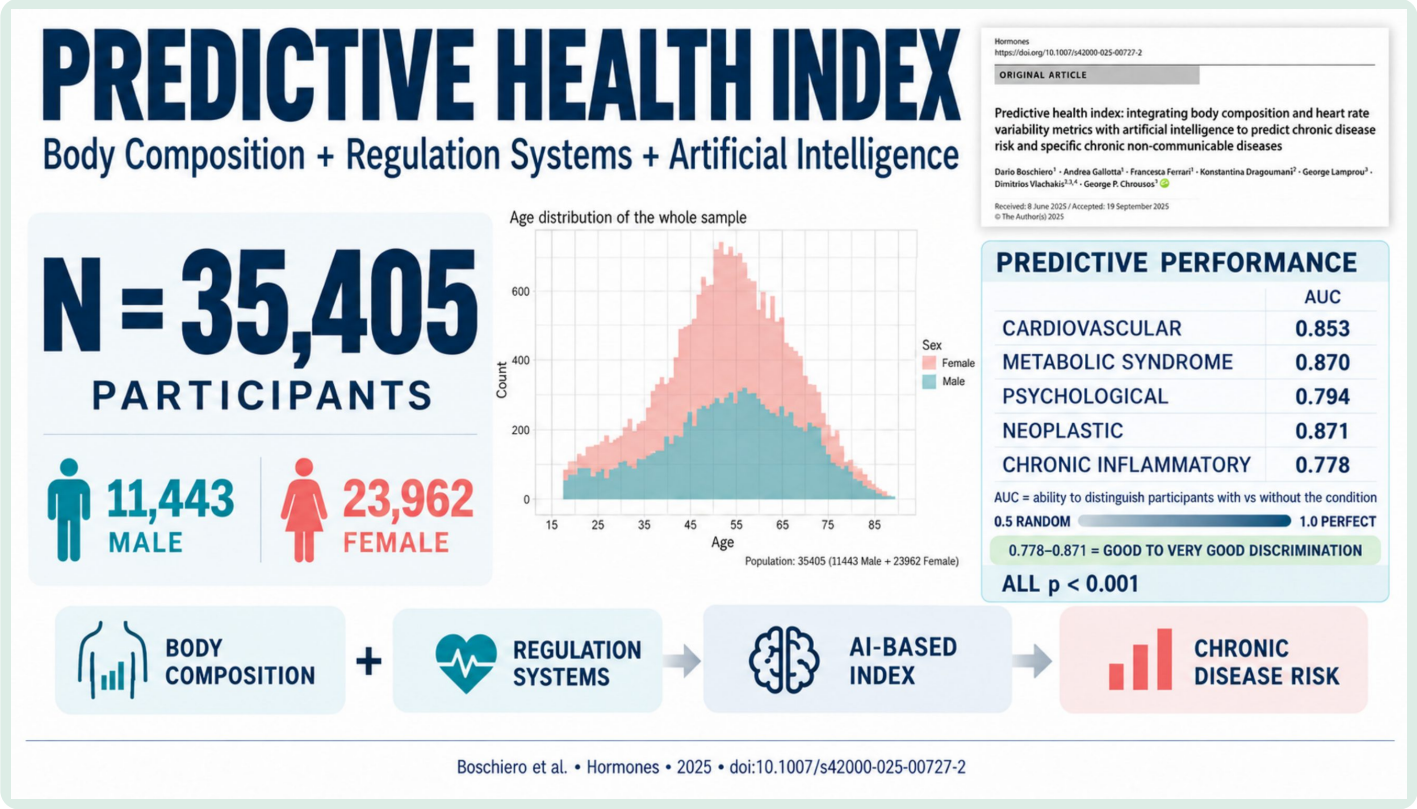
OVERVIEW

The PHI applies one integrated dataset across five clinical domains: cardiovascular, inflammatory, psychological, metabolic, and neoplastic disorders or pathologies. Each curve represents an AI-derived five-year relative-risk trajectory based on the combination of principal variables. The purpose is not to diagnose a disease within any of these domains. It is to show where the patient's current physiological profile lies within each model and to reveal which dimension may deserve closer clinical attention. This multidimensional approach prevents longevity from being reduced to a single organ or biomarker. The same regulatory imbalance may be expressed differently across systems. Reassessment of the five domains allows the clinician to determine whether the overall pattern is moving toward a more favorable physiological position.

KEY MESSAGE

One integrated dataset generates five complementary views of future relative risk.

Predictive Health Index and AUC



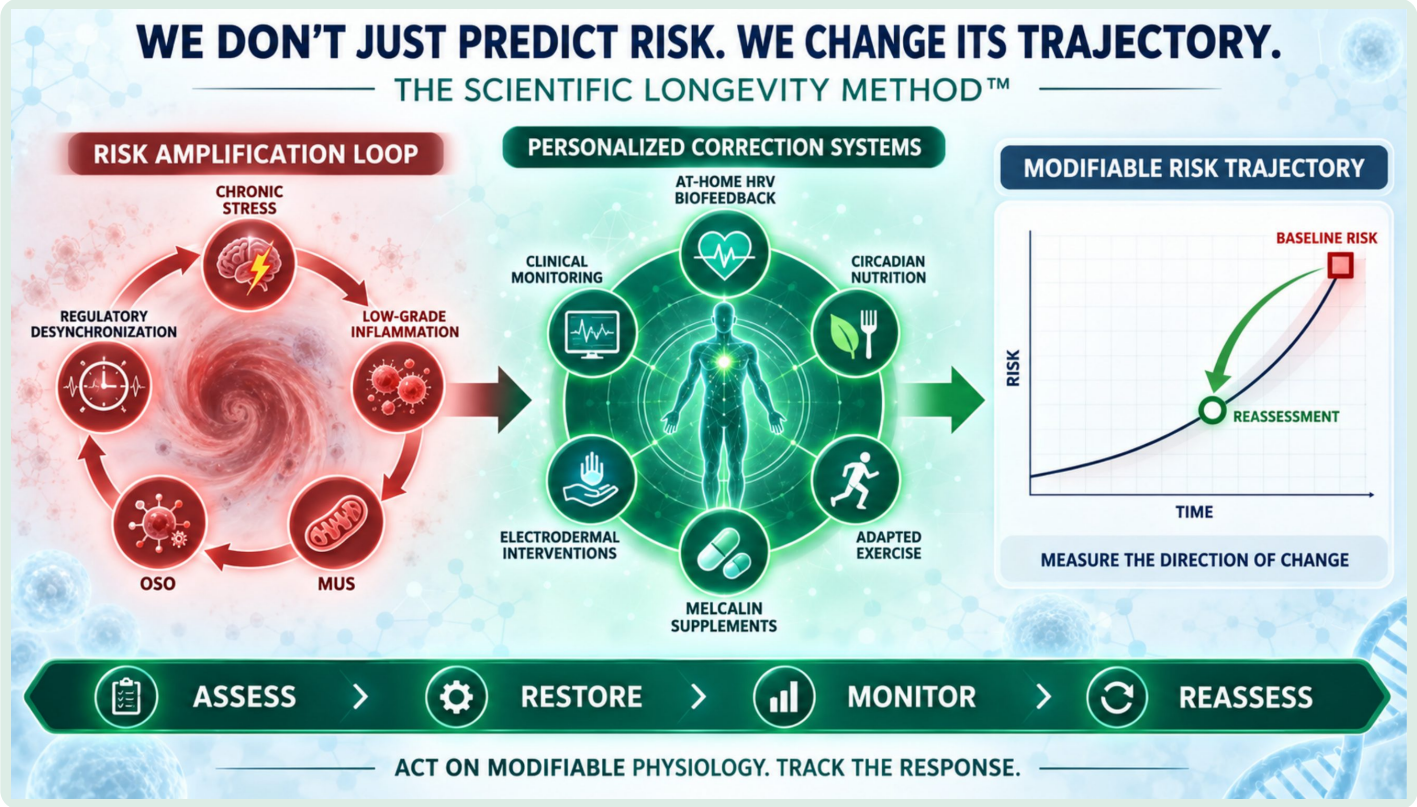
OVERVIEW

The Predictive Health Index was evaluated in 35,405 participants: 11,443 men and 23,962 women. Its discriminative performance is summarized by the AUC, the area under the receiver operating characteristic curve. The ROC curve plots sensitivity against one minus specificity across every possible threshold. The AUC therefore measures how well the model separates participants with and without a condition without selecting one cut-off. An AUC of 0.50 is equivalent to random classification, while 1.00 represents perfect separation. An AUC of 0.85 also means that the model assigns the higher score to the participant with the condition in about 85 percent of randomly selected positive-negative pairs. Reported AUCs range from 0.778 to 0.871, indicating good to very good discrimination. AUC does not measure calibration, prove causality, or establish a diagnosis.

KEY MESSAGE

AUC measures discrimination across thresholds; it does not establish diagnosis or individual certainty.

Changing the Risk Trajectory



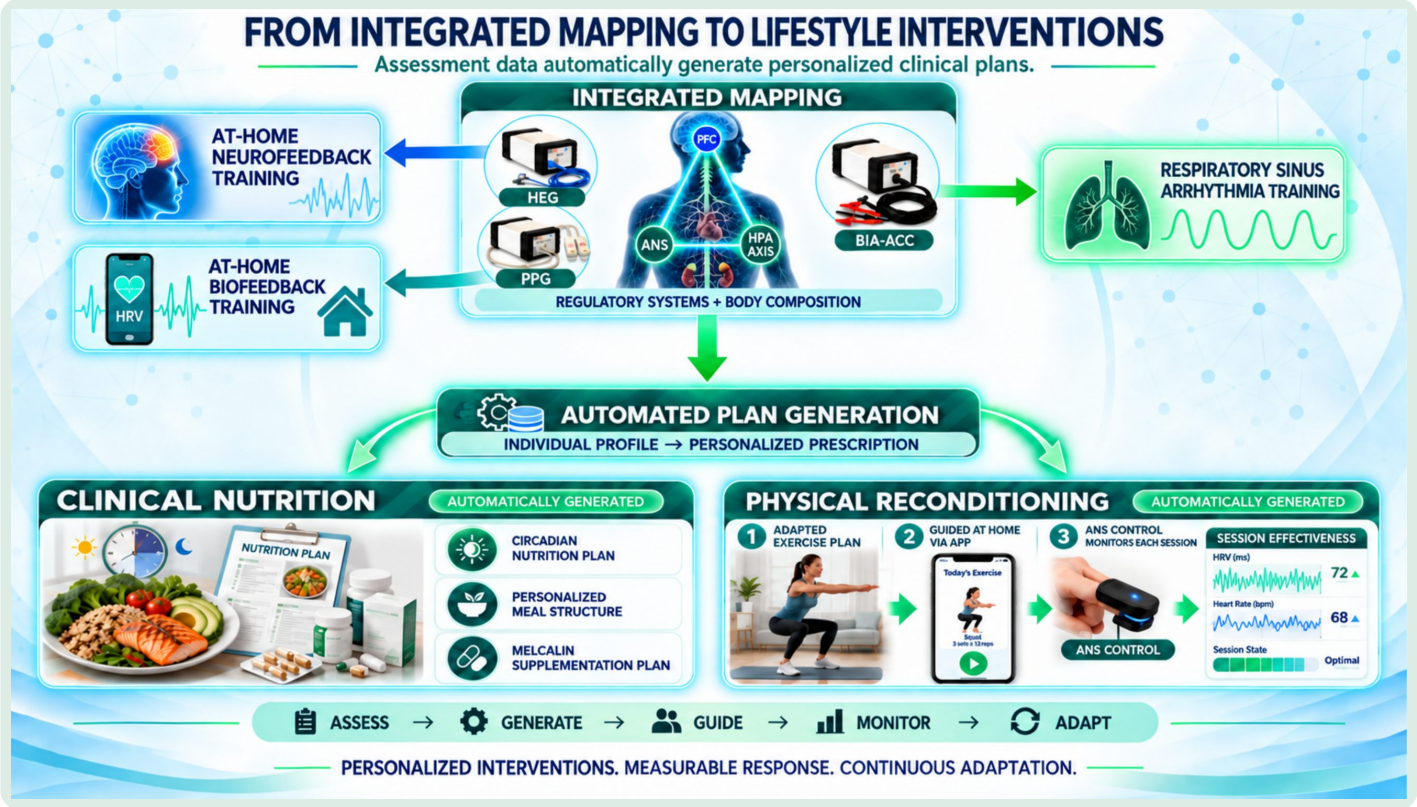
OVERVIEW

Risk may be amplified by a self-reinforcing loop that includes chronic stress, regulatory desynchronization, low-grade inflammation, impaired body composition, and metabolic dysfunction. The Scientific Longevity Method targets the modifiable components of this loop. The correction system may include at-home biofeedback, clinical nutrition, circadian optimization, adapted exercise, Melcalin supplementation, and electrodermal interventions when indicated. Clinical monitoring connects each intervention to objective measurements. The sequence is assess, restore, monitor, and reassess. The clinician does not assume that an intervention is effective because it is plausible or because the patient reports a temporary benefit. The response is measured, the trajectory is reviewed, and the plan is adapted. The aim is to move the patient toward lower relative risk and greater regulatory efficiency.

KEY MESSAGE

Act on modifiable physiology, measure the response, and adapt the plan to the observed trajectory.

From Mapping to Lifestyle Interventions



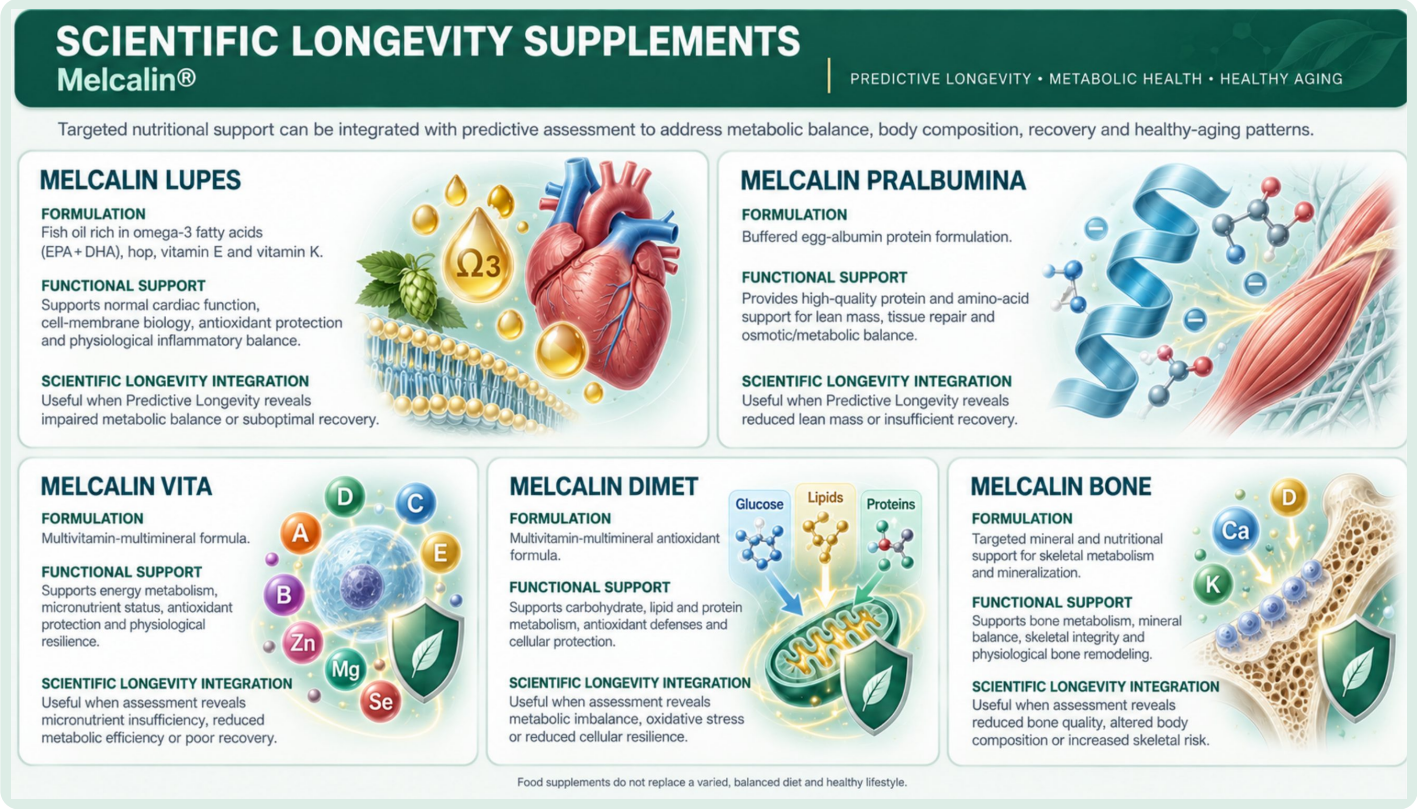
OVERVIEW

Assessment data generate an individualized clinical plan rather than a generic wellness recommendation. HEG and PPG findings guide at-home neurofeedback and autonomic biofeedback with ANS Control. BIA-ACC and the integrated regulatory profile inform circadian nutrition, meal structure, hydration, and supplementation. Physical reconditioning is adapted to the patient's recovery capacity and may combine aerobic conditioning, strength work, and respiratory sinus arrhythmia training. ANS Control allows selected sessions to be monitored at home, creating continuity between the prescription and the physiological response. The workflow is continuous: assess the profile, generate the plan, guide the patient, monitor adherence and physiology, and adapt the intervention at reassessment. Personalization therefore remains connected to repeatable measurements.

KEY MESSAGE

Integrated assessment translates directly into personalized nutrition, training, and home regulation strategies.

Scientific Longevity Supplements

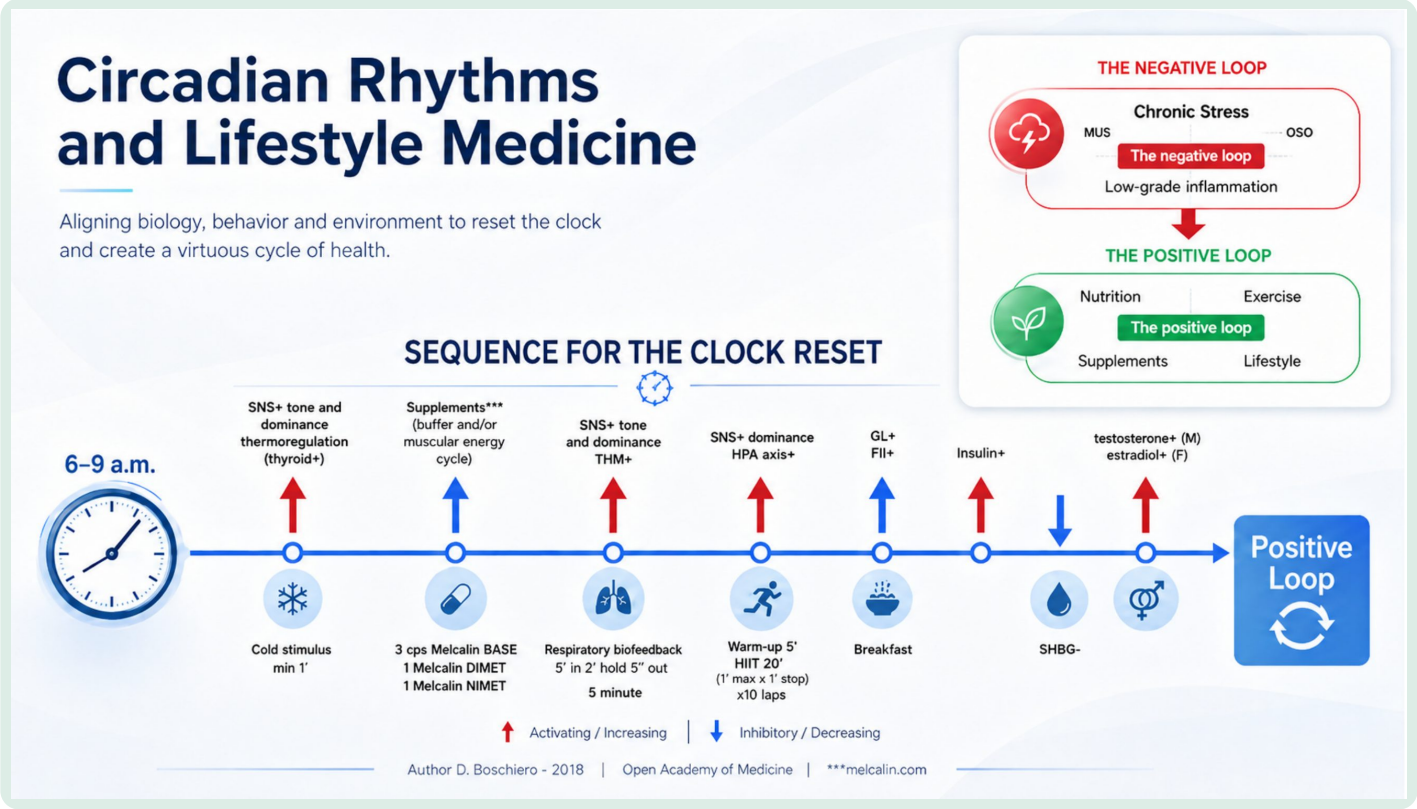


OVERVIEW

Melcalin supplementation is integrated as targeted nutritional support and does not replace a varied diet, healthy lifestyle, or medical care. Lupes provides omega-3 fatty acids and supports cardiac function, cell-membrane biology, antioxidant protection, and physiological inflammatory balance. Vita supports micronutrient status, energy metabolism, and resilience. Dimet supports carbohydrate, lipid, and protein metabolism together with antioxidant defenses. Pralbumina provides protein and amino-acid support when lean mass or recovery is insufficient. Bone supports skeletal metabolism, mineral balance, and physiological bone remodeling. Selection depends on the individual pattern identified by Predictive Longevity, together with clinical history, contraindications, and the broader intervention plan. The response is then monitored during follow-up.

KEY MESSAGE

Supplement selection follows the measured pattern, clinical history, and individual physiological target.



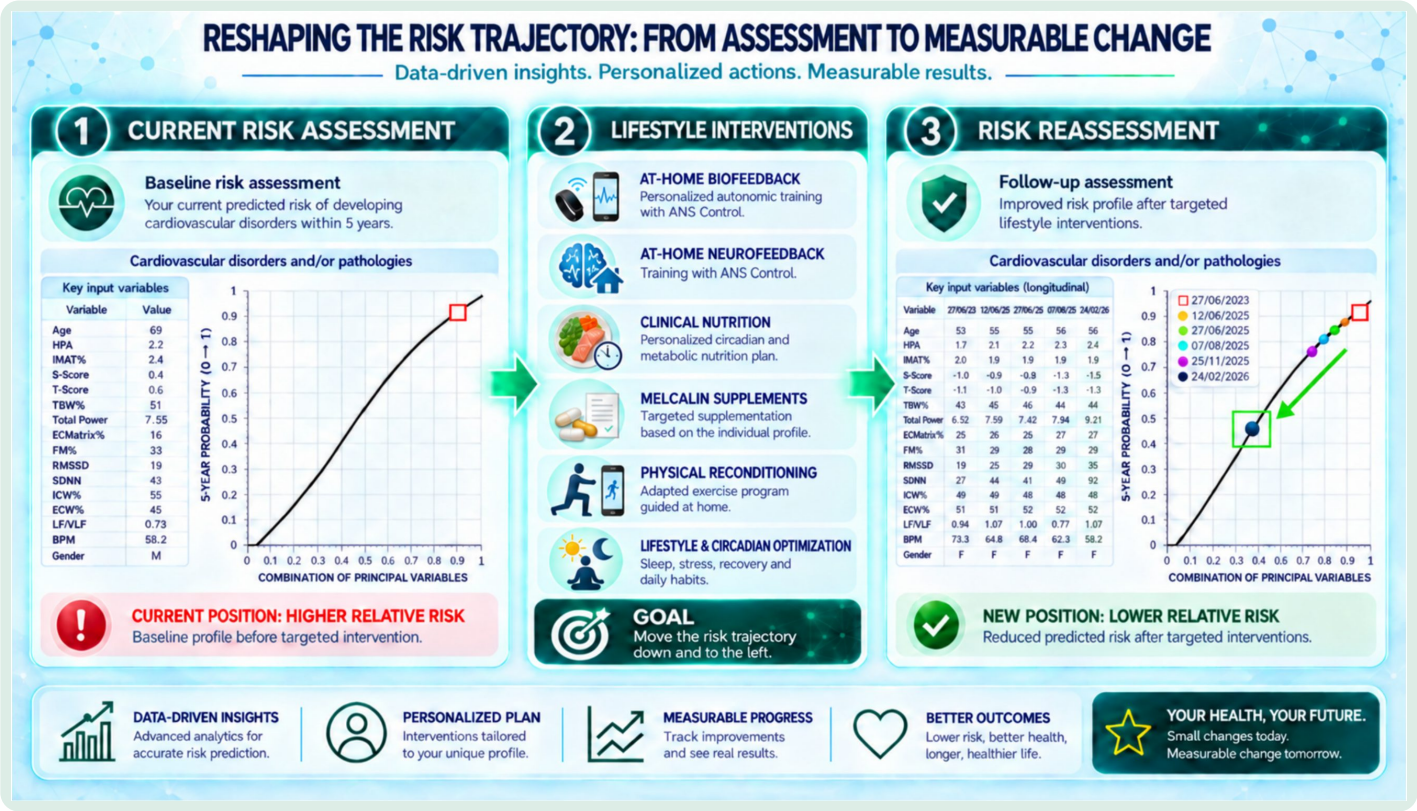
OVERVIEW

Circadian medicine aligns biology, behavior, and environment. The negative loop combines chronic stress, low-grade inflammation, altered body composition, and metabolic dysfunction. The positive loop uses nutrition, exercise, supplements, daylight, temperature, breathing, and sleep timing to restore a more physiological sequence. The example begins in the morning with a consistent wake period, environmental signals, selected supplementation, respiratory biofeedback, movement, hydration, and breakfast timing. The precise protocol must be adapted to the individual, but the underlying principle remains consistent: the order and timing of signals influence autonomic tone, HPA-axis activity, thermoregulation, insulin sensitivity, energy availability, and recovery. The clinical plan therefore rebuilds a coherent daily rhythm rather than prescribing isolated behaviors.

KEY MESSAGE

The timing and sequence of daily signals help restore circadian and metabolic coherence.

Reshaping Risk Through Measurable Change

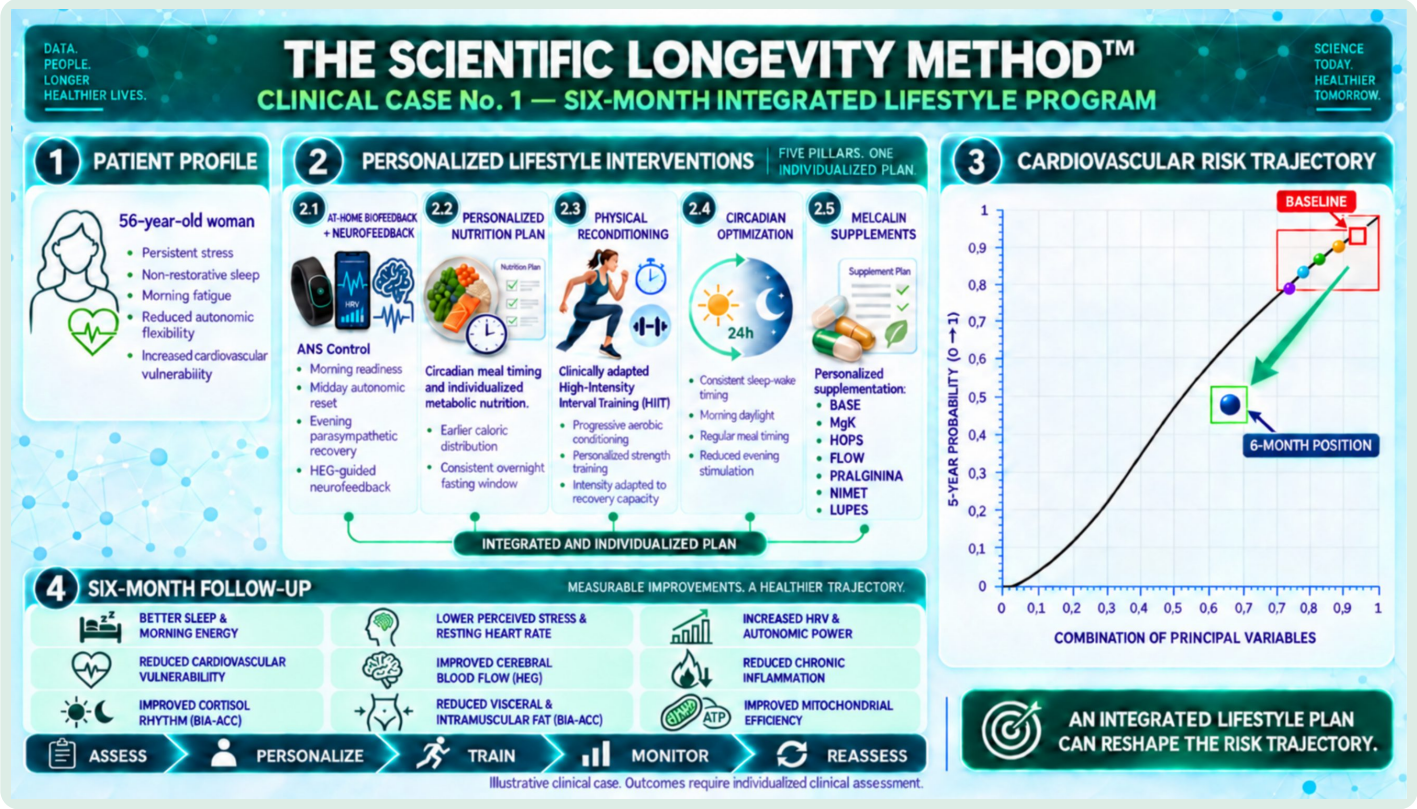


OVERVIEW

The full pathway begins with a baseline PHI assessment and identification of the patient's current relative-risk position. A personalized intervention may then combine autonomic biofeedback, neurofeedback, clinical nutrition, Melcalin supplements, physical reconditioning, and circadian optimization. At follow-up, the same variables are measured again. This allows the patient's position to be compared with the baseline through a consistent model and shows whether the trajectory has moved down and to the left, toward lower relative risk. Progress is not inferred from symptoms alone. Subjective improvement remains clinically important, but it is interpreted together with repeatable physiological measurements. Daily changes become meaningful when they produce a measurable improvement in regulation, body composition, and predicted direction over time.

KEY MESSAGE

Reassessment connects personalized intervention to objective change in the patient's risk trajectory.

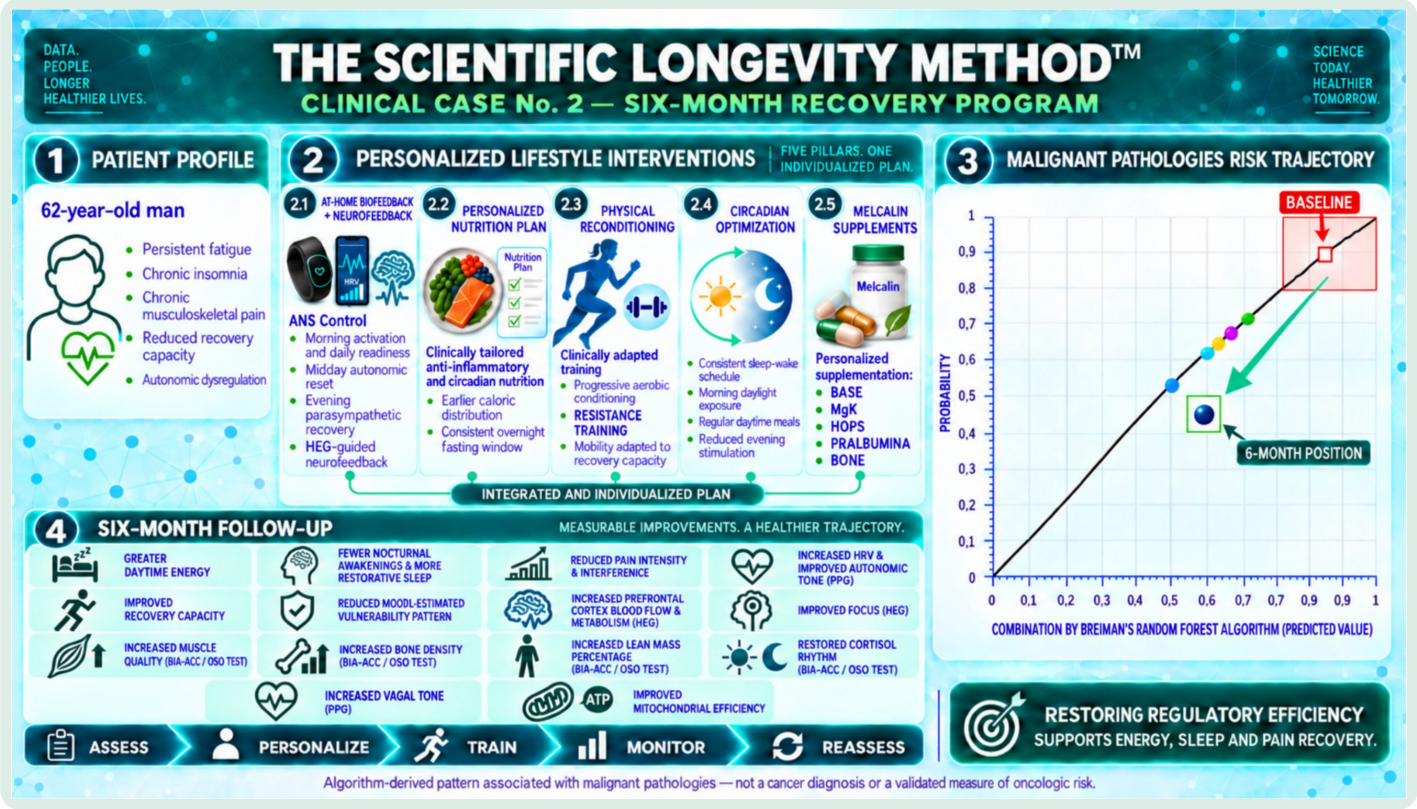


OVERVIEW

This illustrative case describes a 56-year-old woman with persistent stress, non-restorative sleep, morning fatigue, reduced autonomic flexibility, and increased cardiovascular vulnerability. Her individualized plan combines ANS Control training, personalized circadian nutrition, adapted high-intensity interval training, circadian optimization, and targeted Melcalin supplementation. At six months, follow-up findings include better sleep and morning energy, lower perceived stress and resting heart rate, increased HRV and autonomic power, improved cerebral blood flow, a more physiological cortisol rhythm, reduced visceral and intramuscular fat, and lower chronic inflammation. The cardiovascular PHI position moves toward lower relative risk. The case illustrates how an integrated lifestyle plan can reshape a measurable trajectory when the intervention is individualized, monitored, and reassessed.

KEY MESSAGE

An integrated and individualized plan can improve regulatory markers and cardiovascular risk position.

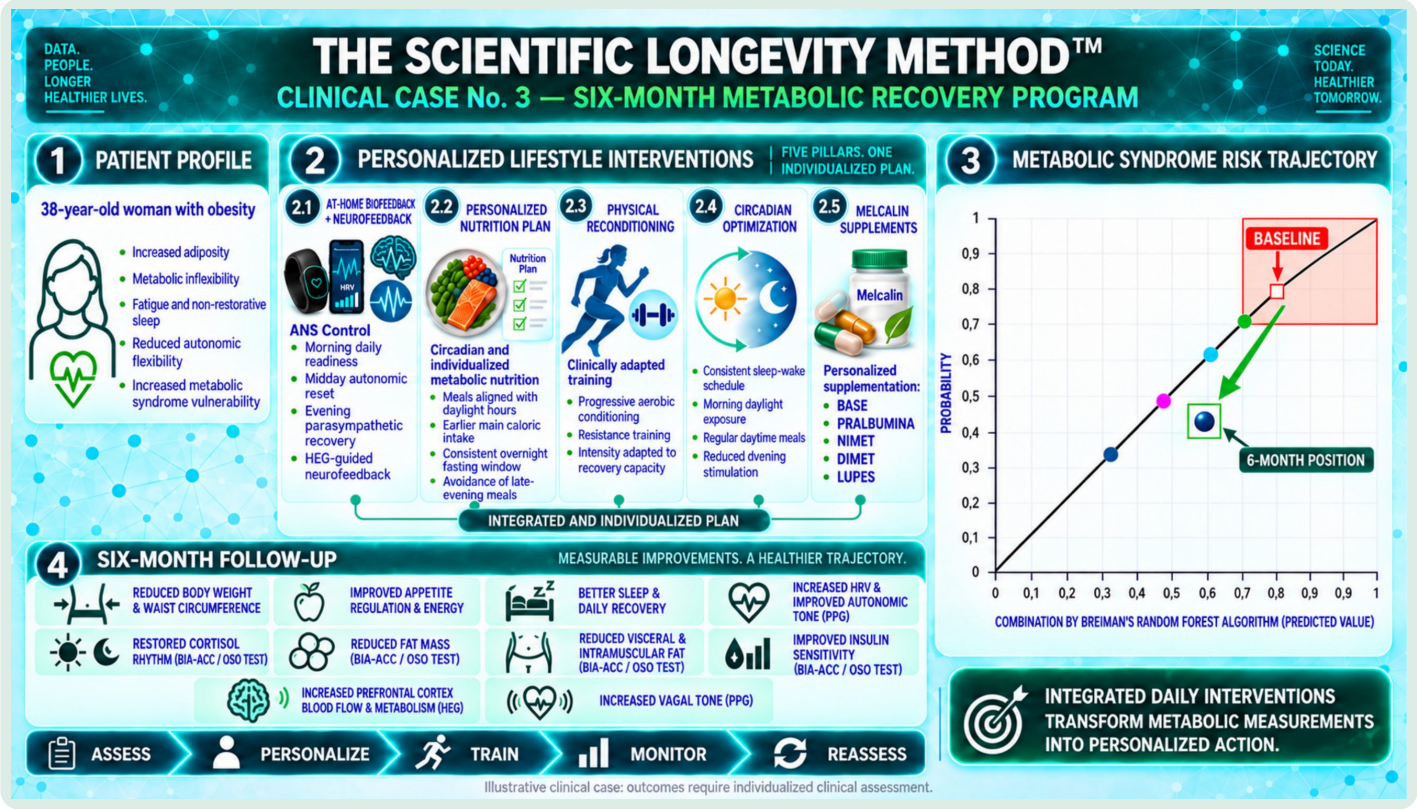


OVERVIEW

This illustrative case describes a 62-year-old man with persistent fatigue, chronic insomnia, chronic musculoskeletal pain, reduced recovery capacity, and autonomic dysregulation. The plan combines timed autonomic biofeedback, HEG-guided neurofeedback, anti-inflammatory circadian nutrition, progressive aerobic and resistance training, sleep-wake optimization, and personalized supplementation. At six months, the reported changes include greater daytime energy, more restorative sleep, reduced pain and interference, improved recovery, increased HRV and vagal tone, improved prefrontal blood flow and focus, better muscle and bone quality, greater lean mass, and restoration of cortisol rhythm. The malignant-pathologies graph requires specific caution: it is an algorithm-derived pattern, not a cancer diagnosis and not a validated measure of oncologic risk.

KEY MESSAGE

Restoring regulatory efficiency can support energy, sleep, pain recovery, and measurable physiological change.



OVERVIEW

This illustrative case describes a 38-year-old woman with obesity, metabolic inflexibility, fatigue, non-restorative sleep, reduced autonomic flexibility, and increased metabolic-syndrome vulnerability. Her individualized plan integrates daily autonomic training, HEG-guided neurofeedback, circadian and metabolic nutrition, progressive aerobic and resistance exercise, sleep-wake optimization, and targeted supplements. At six months, the profile shows reduced body weight and waist circumference, better appetite regulation and energy, improved sleep and recovery, increased HRV and vagal tone, restoration of cortisol rhythm, reduced fat mass, lower visceral and intramuscular fat, and improved insulin sensitivity. The metabolic PHI moves toward a lower relative-risk position. The case shows how integrated measurements can be converted into personalized daily action and verified through reassessment.

KEY MESSAGE

Integrated daily interventions transform metabolic measurements into personalized and verifiable action.

Assess Restore Monitor Reassess



OVERVIEW

The Scientific Longevity Method can be summarized in four actions: assess, restore, monitor, and reassess. Assessment establishes a multidimensional physiological baseline. Restoration applies an individualized intervention. Monitoring shows whether the patient is engaging and whether regulation is changing in the intended direction. Reassessment verifies the result and guides the next clinical decision. Predictive Longevity extends this cycle by integrating central, autonomic, endocrine, metabolic, and body-composition data with relative-risk modeling. The method remains a repeatable physiological process built around measurement, regulation, and follow-up. Its purpose is to identify declining adaptability early, strengthen recovery, and document whether the patient is moving toward a healthier trajectory.

For informational and professional education purposes. Functional measurements and AI-derived risk trajectories support clinical reasoning but do not replace medical diagnosis, appropriate investigation, or individualized care. PHI outputs represent relative model estimates and must be interpreted within the clinical context.

KEY MESSAGE

Assess it. Restore it. Monitor it. Reassess it. That's physiology.