Chapter I

What are biomarkers?

Discover the data-driven approach to health

Definitions

Blood biomarkers: Biological indicators of your body's internal condition, like cortisol, ferritin, vitamin D, and cholesterol. Analyzing certain biomarkers provides measurable insights into how your body is aging and can reveal the health status of your heart, metabolism, gut, and cognition.

Normal zone: A biomarker reference range based on population-based studies, otherwise known as "clinically normal." This is typically what your physician will reference if you receive blood work at your annual checkup. Measures that fall inside the normal zone would be assumed to be healthy or harmless.

Optimal zone: A personalized biomarker reference range, generated by InsideTracker's A.I.-driven algorithm, using demographics like your age, ethnicity, activity level, and biological sex, supported by thousands of peer-reviewed scientific publications and hundreds of thousands of health-related data points from the American population. Research has shown that improving your biomarkers by bringing them into your optimal zone can improve your health and longevity beyond what you would achieve in the normal range.

Biomarker spotlight: Ferritin

Ferritin is the storage form of iron and is especially important when it comes to women's health.

The **normal range** for a woman's ferritin level is generally between 10 and 150 nanograms per deciliter.

Optimal zones differ by life stage, among other factors. When a premenopausal woman menstruates, ferritin stores are used to compensate for lost iron. But a postmenopausal woman isn't menstruating, and therefore does not lose blood (and subsequent iron) every month.

Course notes

Blood biomarkers are impacted by:

- What you eat
- Nutritional supplements you take
- How you move + exercise
- The intensity at duration of that exercise
- How well and how long you sleep
- Your resilience and management of stress

Every person is different. Their health needs are different. And the optimal zone of each individual biomarker should reflect that.

Biomarkers are dynamic—and routine blood analysis allows you to capture fluctuations in blood biomarkers over time.

Routine blood analysis is an important part of your annual health regimen, making it possible to piece together multiple "moments-in-time" and begin to identify long-term biomarker trends.

Blood biomarker tracking provides data-driven guidance on where your health is optimized—and where it's not. Based on these trends, you can quickly identify what to work on next.

Age 20-39	Age 59+
Pre-menopause normal Range 10-154ng/mL	**Post-menopause normal Range** 20-288ng/mL
Pre-menopause optimal: Range OPTIMIZED 40-154ng/mL	**Post menopause optimal Range** OPTIMIZED 40-288ng/mL]

Key takeaway

- Analyzing your biomarkers is scientifically valid, repeatable, reliable—and importantly—actionable.