

Foundational Papers for Compass

Companion book: *The Age of Scientific Wellness* (Hood & Price, 2023).

Topic	What it made possible for Compass	Paper link
Scientific wellness data clouds	Original P100 model: longitudinal whole-genome, clinical labs, metabolomics, proteomics, microbiome, activity, and coaching data integrated into personal data clouds.	Price et al., 2017
Wellness-state geometry	Clinical labs form structured wellness states and individual trajectories; supports interpreting health as movement through multidimensional state space.	Zimmer et al., 2021
BioAge	Multi-omic biological age in 3,558 individuals; supports an interpretable aging/wellness metric that can move with health state and lifestyle context.	Earls et al., 2019
BioBMI	Multiomic BMI signatures capture metabolic heterogeneity that scale BMI misses; foundation for molecular BMI / BioBMI-style interpretation.	Watanabe et al., 2023
PRS x lifestyle coaching	Genetic predisposition modifies clinical response to a lifestyle coaching program; supports genome-informed personalization.	Zubair et al., 2019
PRS & presymptomatic disease	Polygenic risk is reflected in detectable blood alterations before symptoms; supports genetic-gap and early-risk interpretation.	Wainberg et al., 2020
Longitudinal outliers	Repeated proteomic measurements identified persistent outlier markers years before metastatic cancer diagnosis; supports longitudinal early-warning logic.	Magis et al., 2020
Blood <-> microbiome	About 40 blood metabolites predict gut microbiome alpha-diversity; connects microbiome status to host blood biochemistry.	Wilmanski et al., 2019
Microbiome & healthy aging	Gut microbiome uniqueness in older age reflects healthy aging and predicts survival; supports microbiome-aging interpretation.	Wilmanski et al., 2021
Microbiome & weight-loss response	Baseline gut metagenomic functional signatures predict variable weight-loss response after lifestyle intervention.	Diener et al., 2021