

Longevity & Healthy Aging

Real World Studies, The New Research Model for Healthspan

*When it comes to longevity,
there's no short-term fix.*

Daniel Buettner, “The Blue Zones” (2005)

Longevity is personal...



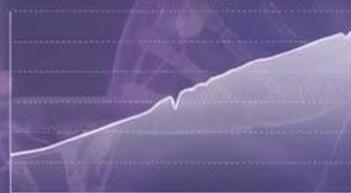
Longevity is personal...The Science of You!

- **As you age, what will you care about?** ... physical strength, mobility, memory, cognition, community, metabolic health, cardiac health, loneliness, biomarkers and epigenetics?
- **Real-World Research is Essential:**
Blue Zones teach us that longevity happens in communities and daily life, that's where we must study it - does community lead to longevity or is it an indirect association?
- **Long-Term Thinking Wins:**
True longevity research requires both longitudinal and cross-sectional approaches that track outcomes over time

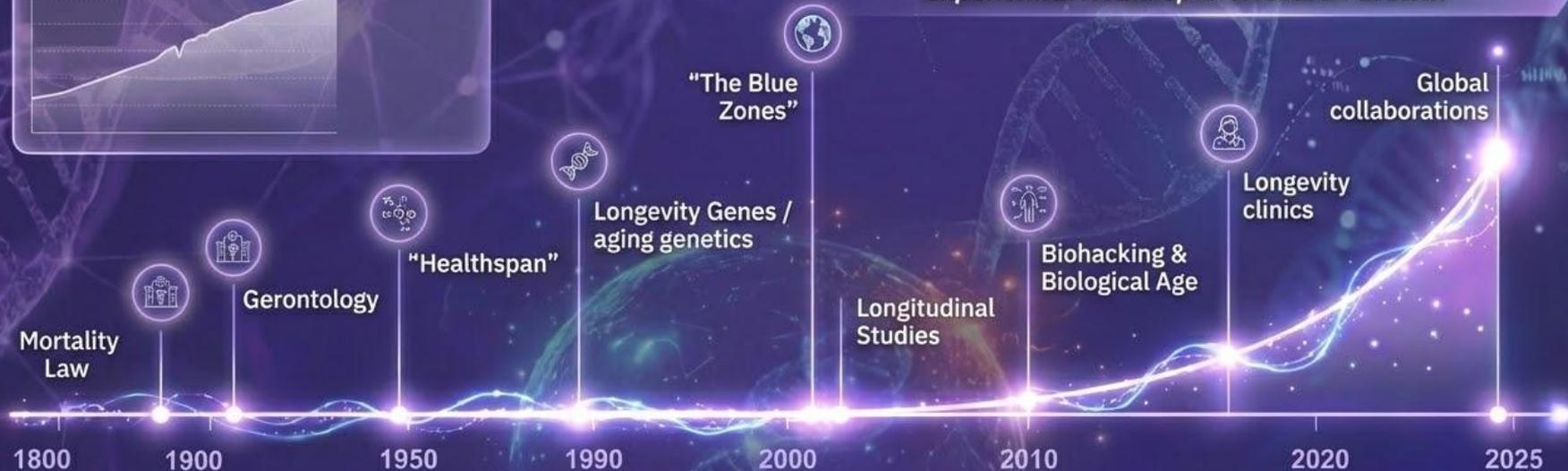
The Evolution of Research in Healthy Aging & Longevity

Modern Healthy Aging Research has Intensified in Recent Decades

Global average life expectancy has more than doubled since 1900



Government Adoption + Public Adoption = Exponential Healthspan Research Growth



The Blue Zone Principle

What We Know from the World's Longest-Living Communities

“The Blue Zones” book stands as a cultural milestone, bridging public interest and research in healthy aging.

**Strong Social
Connections &
Community Engagement**



Movement



Purpose



Stress Reduction



Plant-Based Diets

The Research Implication:

- Healthspan is multidimensional - community, purpose, movement, cognition, diet, metabolism
- Healthspan isn't happening in labs, it's happening in real lives.

Multidimensional: Three Pillars of Healthspan Research

Is Everything Longevity Research?

We're rapidly expanding our understanding of what it means to age well, evolving from Lifespan to Healthspan.



1. Physical Health

Mobility, metabolic function, cellular health



2. Mental & Cognitive Health

Brain function, emotional wellbeing, spiritual vitality



3. Biogerontology (Biological Age)

Molecular and DNA markers that indicate true physiological age vs. chronological age

How to study healthy aging?

Each healthspan dimension requires different research approaches, but all share one critical requirement: they happen in real life, that's where we need to study it.

Real-World: Decentralized Clinical Trials for Healthspan

Hospital studies capture moments; real-world platforms capture lives.

Decentralized Clinical Trials

What: Remote/At-Home studies collecting real-world continuous data

How: using digital tools, wearables, and at-home consumer-grade biosampling kits

Outcome: build differentiated, personalized, and credible evidence

Traditional in-clinic Research		Decentralized Research
Controlled observation	←→	Real world observation
Moment in time observation	←→	Real time monitoring
Restricted participant pool size	←→	Broader, scalable population
Limited diversity	←→	More diverse
Higher dropout	←→	Higher retention
Expensive (staff, clinics,...)	←→	More affordable
Slower	←→	Faster (especially recruitment)
Less data, manual collection	←→	More data collected more often

Meet Chloe:

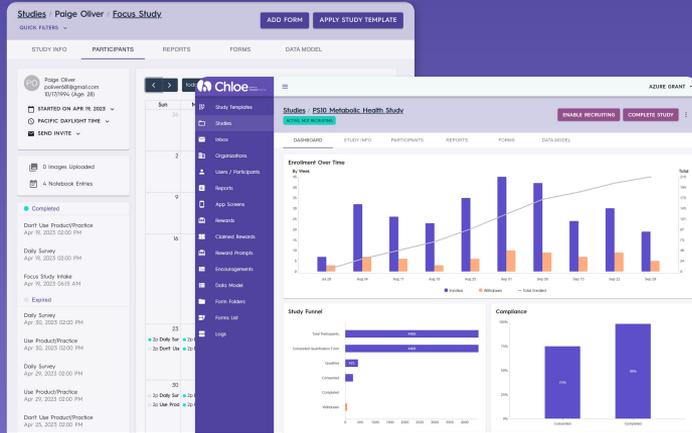
The Consumer Health Learning and Organizing Ecosystem

Real-World Research Platform for Multidimensional Studies

THE PLATFORM

For the Researcher:

Collect any regulatory grade health data with automated rigor



THE APP

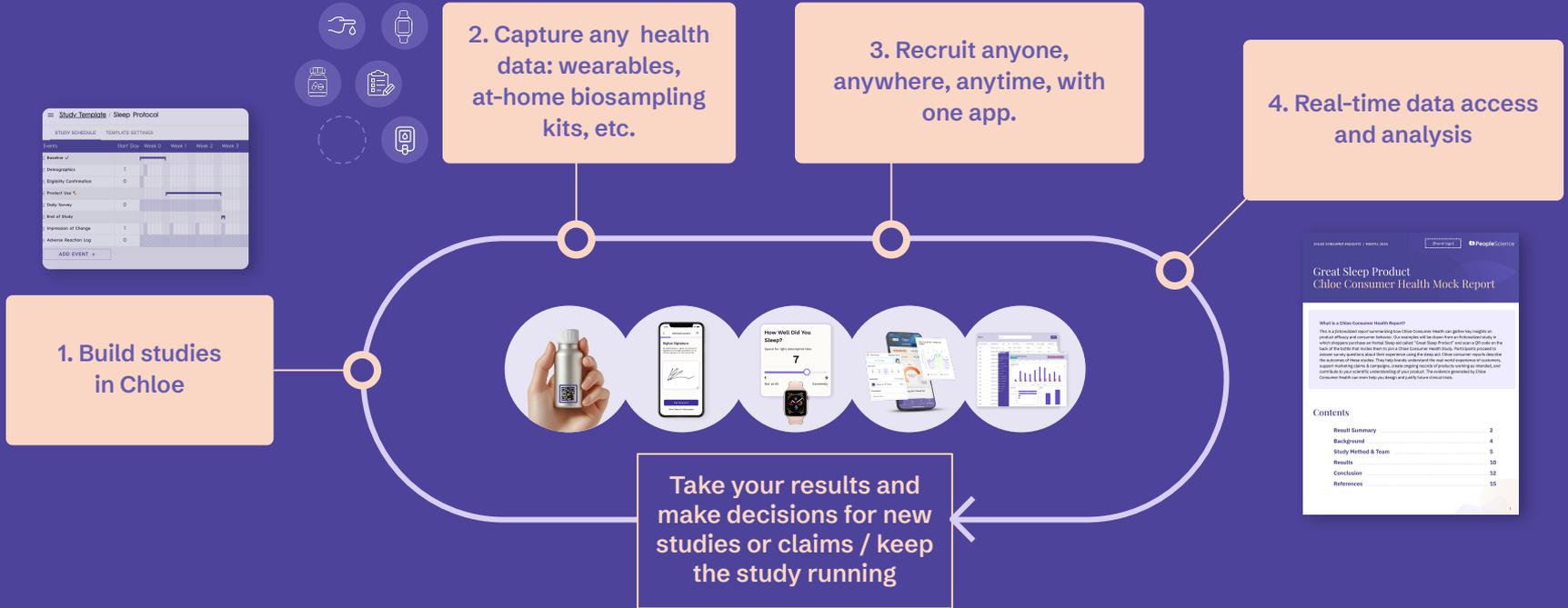
For the Participant:

Personalized research, for anyone, anywhere, anytime



One Platform, Endless Measurements

Real World Health Studies with Anyone, Anywhere, Anytime



The Longevity Research Ecosystem

Building evidence for collective impact across the ecosystem



CASE STUDIES - RCTs for Stress and Insomnia

Two Peer Reviewed RCTs: GABA Probiotic Lp815 for Symptoms of Both Stress and Insomnia



“

Our trials with People Science were a clear success and allowed us to make the key business decision to pursue both stress and now the sleep markets. They offered essential guidance. The experience and critical thinking of the scientists and staff were invaluable for these trials.

”

STUDY DETAILS

Goal: Clinically evaluate the impact of LP815 probiotic versus a placebo on symptoms of stress and insomnia to drive product development and claims. Two separate studies with OLE

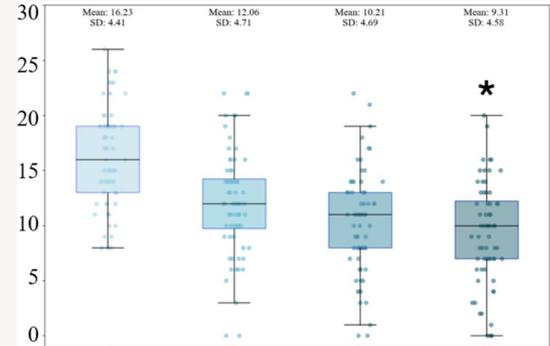
Participants: otherwise healthy people with mild to moderate stress/anxiety or insomnia

Setting: Double-blind, placebo-controlled, randomized, decentralized trials - IRB approved with integrated wearable devices and urine collection at home

Timeline: Participants collected 1 week of baseline data followed by 6-8 weeks of product or placebo use. Open Label Extension

OUTCOMES

- 2 Peer-reviewed publications in Beneficial Microbes and Nature Scientific Reports
- Statistically significant reduction in stress/anxiety
- Statistically significant improvement in insomnia, increased urinary GABA



CASE STUDY - Cognitive Health

Cognitive Health: real-world research reveals... M2 Lion's Mane 102™ improves cognition in people with “suboptimal cognition”



“

This People Science study demonstrates that M2 Lion's Mane 102™ - an organic full-spectrum, full-life-cycle functional mushroom product - can directly enhance cognition, mood, and sleep - some of the key elements of a long and vibrant healthspan.

- Julie Daoust, PhD
Chief Science Officer

”

STUDY DETAILS

Goal: To determine if regular use of Lion's Mane 102™ can improve cognition in people with self reported concerns with memory, focus, and cognition and who had mild-moderate deficits using the CFQ

Participants: 40-75 years old otherwise healthy people screened with CFQ

Setting: At home, real world, placebo controlled

Timeline: Baseline period and then 8 weeks of product use

Methods: Randomized, double blind, placebo controlled study with Lion's Mane 102™ vs placebo

OUTCOMES

→ Improved memory, attention, and processing speed - 61% improvement on juggle factor test



- Trend towards Memory Grid Improvement
- Improved mood
- Improved restedness
- Improved sleep quality

CASE STUDY - Metabolic Health - Intermittent fasting mimetic

Metabolic Health, The Silent Driver of Longevity



“

What is the point of living longer if you have to live less?

- Chris Rhodes PhD
 Founder and CEO of Mimio

”

STUDY DETAILS

Background: Mimio™ is a fasting mimetic supplement. Designed to mimic an intermittent fasting diet. The 4 ingredients have been shown to extend the lifespan of *C. elegans* by as much as 96%. It contains spermidine, nicotinamide, palmitoylethanolamide (PEA) and oleoethanolamide (OEA)

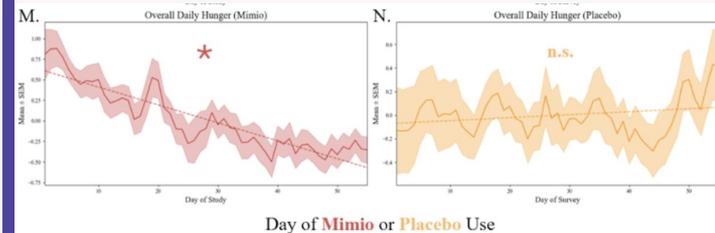
Goal: Determine if Mimio™ supplementation suppresses appetite and improves metabolic markers of health

Participants: Overweight adults with elevated HbA1C levels - at home, real world

Methods: Randomized double blind, placebo controlled trial in overweight people with “pre-diabetic HbA1C levels” - 2 weeks baseline, 8 weeks product.

OUTCOMES

→ Mimio™ improved unhealthy cravings, eating only when hungry, mealtime appetite, maximum daily hunger, and overall daily hunger.



→ Mimio™ also improved lipids in the blood and fasting glucose compared to placebo

CASE STUDY - Physical Healthspan

Joint Health Research: studying real-world mobility through wearables



“

Pain free movement and mobility with better joint health is one of the key pillars of health found throughout the Blue Zones

”

STUDY DETAILS

Goal: Determine if Mycondro™ supports “joint health”

Participants: Otherwise Healthy older individuals with self-described joint mobility concerns

Setting: Real world, multiple dose comparative arm trial

Timeline: 3 months of product use

Methods: Validated instruments for joint health plus integrated wearables to measure mobility

OUTCOMES

→ Study launching in Q1, 2026

Psychedelics and longevity

Recent study on psilocybin and longevity in mice and human cells - Published in Nature Aging

-  Psilocin increased cellular longevity by 57% - mechanisms potentially include both decreased oxidative stress and telomere preservation
-  Oral psilocybin significantly enhanced survival in aged mice with obvious improvements in fur quality



- Currently using Chloe and the People Science consumer-first engagement model to study the impact of psilocybin-containing mushrooms and group administration on alcoholism.

-  People Science is seeking funding to support a pilot n=36 longitudinal study using a similar model to study the impact of monthly psilocybin on creativity and longevity in humans

The Research Implication:

-  Plasticity may be critical for long term adaptation and protection at both the cellular and organismal levels - neuroplasticity, etc.
-  Discrete vs continuous metamorphosis - biological, physiological, neurological, spiritual....

CASE STUDY - The Frontier

The Bahamas: 2024 Longevity and Regenerative Therapies Act – LARTA

LARTA

LARTA DETAILS

The Government of the Bahamas established the LARTA Act in 2024 to encourage innovative longevity and regenerative therapies research and administration. Efficient, technology-enhanced research within a rigorous, transparent scientific environment and a patient-empowered care model will drive ethically-regulated innovation. Chloe is at the center – connecting patients, doctors, scientists, and regulators.



Digital Application Process: Ensuring companies set up in The Bahamas and meet rigorous entry standards.



Practitioner and Clinic Certification: Guaranteeing licensed clinics and practitioners meet global standards.



Treatment Protocols and IIT Support: Aligning their work in The Bahamas with global best practices and ICH*.



Capture Real World Evidence: Leverage data from clinical trials in real-world settings to validate efficacy, optimize trial design, and accelerate regulatory approvals.



Patient Recruitment: Recruiting and onboarding longevity and regenerative therapy patients.



Global Services to Manufacturers

“

Chloe and The Larta Agency together will create the world's first fully unified, jurisdiction-wide framework for operationalizing longevity research in The Bahamas.

”

*Josh Mann
COO and Managing Partner at
the LARTA Agency*

CASE STUDY - LONGEVITY AS PUBLIC HEALTH

The Government Angle: Longevity is Also Public Health

“

Loneliness... poses a profound public health threat akin to smoking and obesity.

”

*Vivek H. Murthy
U.S. Surgeon General*

STUDY DETAILS



The Surgeon General's Warning: Loneliness is a significant health crisis affecting longevity.

What Local Governments Can Study:



Community programs (Tai Chi in the park)



Intergenerational initiatives (teens teaching seniors digital skills, seniors teaching cooking)

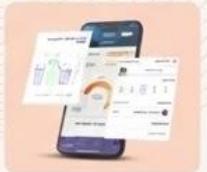


Social connectivity interventions

OUTCOMES



- **Q:** How do you quantify happiness, loneliness, and community engagement at scale?
- **A:** Digital platforms with validated instruments, wearable data showing movement/engagement, and long-term tracking of wellbeing outcomes.
- **ROI:** Happier, more connected communities = longer, healthier lives = reduced healthcare burden.



The Future of Longevity: Longitudinal Research

Why Longevity Research Demands Long-Term Thinking

True longevity research
requires patience,
persistence, and platforms
that can maintain engagement
over time.

Today: Snapshot Studies

- Biological age today vs. six months from now
- Glucose levels post-meal
- Cognitive score at one moment

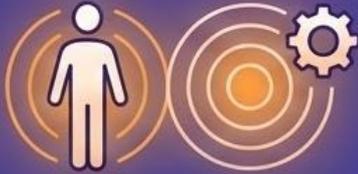
Next-gen: Cross-Sectional Studies

- Comparing different age groups simultaneously
- Identifying patterns across life stages
- Faster insights into long-term effects

Frontier: Longitudinal Studies

- Tracking the same individuals over years or decades
- Observing how interventions compound over time
- Understanding real-world adherence and outcomes

Key Takeaways On Longevity Research



Longevity is Multi-Dimensional and it is personal:

And should be studied across physical, mental, and biological health dimensions, with an emphasis on personalization



Real-World Longitudinal Research is Essential:

Blue Zones teach us that longevity happens in communities and daily life, that's where we must study it. True longevity research requires longitudinal and cross-sectional approaches that track outcomes over time within individuals.



Regulatory Friction:

The medical and pharmaceutical industries, along with the FDA have defined the world according to diseases and drugs to treat those diseases. For longevity research designed to promote health and wellness, we need to improve the regulatory framework to allow for more innovative and impactful research.

Longevity is long term. We are here, now.

How can you design the best studies to measure
your impact today.



Building Better Health Research.
Rigorous. Scalable. *For All.*

Thank you!