



Healthy Aging @ Home

APRIL 2024

Irreversible, Accelerating Global Trends

BioMEMS

US/North America

108+ million over age 50
32% of US population
80% of personal wealth

European Union

95 million over age 65
Oldest population in the world

Middle East/North Africa

26+ million over age 60
Diabetes at epidemic levels

Southeast Asia/Pacific

168+ million over age 60
13% of regional population
Fastest growing pop. segment

Market Intelligence

\$63.01B Global anti-aging market
\$30.0B US-only dietary supplements
\$17.0B US-only medical spa market

Global population is aging rapidly and has the means to defy it

1.6 billion people over age 60 by 2030

Take an active role in defying the aging process

BioMEMS



Can't fix what you can't measure

Fact #1: Everyone is different and ages differently

Genes play a role, but other mechanisms can prevail
Lifestyle choices have the greatest impact

Fact #2: Healthy Aging is an Optimized Metabolism

Optimal health is the best deterrent to disease and decline
Monitoring key aging biomarkers forms the critical path

Fact #3: There's more to measure than you think

Conventional diagnostics don't always tell the whole story
BioMEMS can measure what's "right", not just what's "wrong"

Fact #4: Supplements don't work for everyone (or fad diets)

BioMEMS can detect an individual's reaction to supplements & diet
What you ingest impacts the appearance of aging, vitality and mood

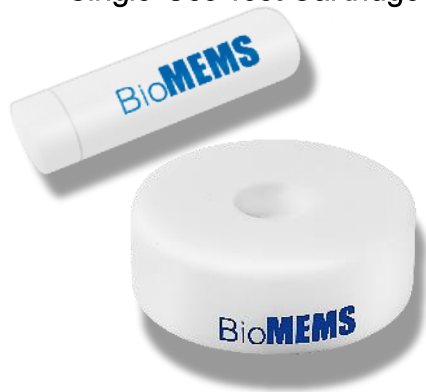
First-in-Market, Sample-to-Smart App Platform

BioMEMS



Self-administered urinalysis and smart device app

Single-Use Test Cartridge



Smart Device App

Handheld Analyzer

At home. At the gym. What you need to know.

Comprehensive 10-biomarker test cartridge

These important biomarkers, singly and in combination, offer broad coverage of key aging factors BEFORE they become a health issue:

- Systemic inflammation
- Oxidative & nitrosative stress
- Tissue damage & healing properties
- Healthy immune response
- Digestive health & energy conversion
- Insulin metabolism
- Cardiovascular efficiency
- Advanced glycation products (AGE's)
- Skin health - elastin/collagen preservation
- DNA methylation byproducts
- Cellular senescence

Regular testing is encouraged as our select biomarkers improve with healthy life choices

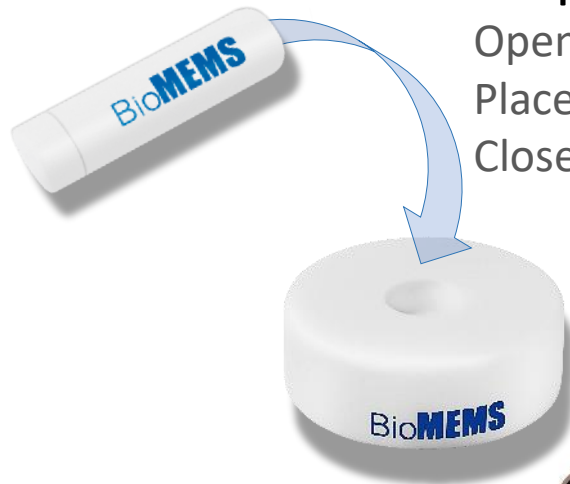
How does this work?

BioMEMS



Step #1: Smart App

Input age, gender, biometrics
Answer lifestyle questions
Set preferences

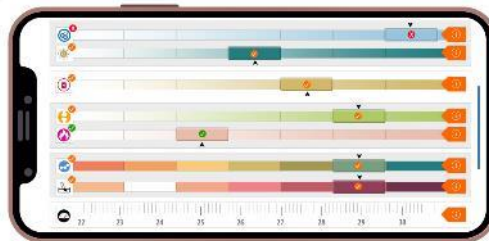


Step #2: Test Cartridge

Open foil wrap, remove cap
Place wick in urine stream
Close cap

Step #3: Analyzer

Pair with smart device
Insert test cartridge



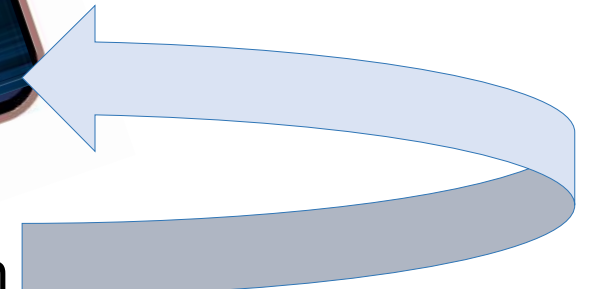
Step #4: Results < 5 Min

View and save in Smart App
Repeat testing forms trendlines

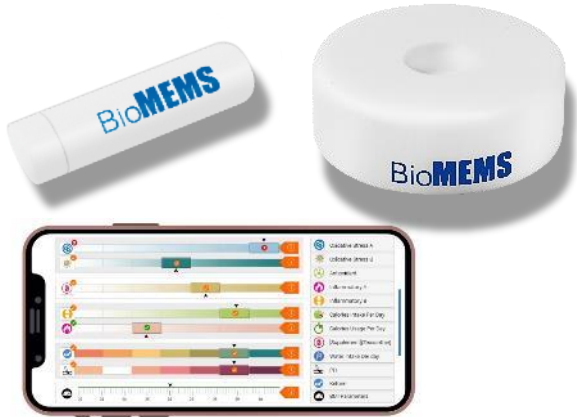


SmartApp Features

- Personalized dashboard
- Inputs for sleep, hydration, activity, diet, supplements, vitals
- Import data from FitBit, Apple
- Track all inputs against test results over time
- Create trendlines for metabolic and systemic aging factors
- Low Risk Consumer Health Information Device – FDA waived



Competitive Landscape



BioMEMS Healthy Aging

Measures 10 unique biomarkers in urine
Sample to Results in <5 Min at home
Lab-quality quantitation and metrics
Results ported to smart device app
User-defined personalization
\$40 - \$60 per test cartridge at retail

Nothing else like it.



At-Home Strips and LFA's

Sample to Results in <5 Min at home
Low sensitivity, very limited biomarkers
Urine strips typically Hi-Med-Lo results
LFA's – like pregnancy tests – are Y/N
No integration with mobile app or cloud
Pricing from 10 cents to \$20 per test



Mail-In/In-Person Tests

Saliva, urine or blood
Results in days or weeks from a lab
Email or downloaded report
No personalization or tracking app
Mostly conventional diagnostics
\$60+ for a single biomarker
Up to \$895 for multiple biomarkers

Market Intelligence

Generalists & Niche Players

Most labs offer dozens of test products

None offer smart device app, personalization or tracking

Quest (DXG)	\$9.0B 2023 Revs	Healthy Aging Test in-person lab visit \$579
LabCorp (LH)	\$12.1B 2023 Revs	Anti-Aging #2 Essential Blood/Urine \$419
Everlywell	\$105M 2023 Revs	Combine three \$99 blood tests to compare
Life Extension	\$145M 2023 Revs	TruAge Complete mail-in blood test \$411
Test Smartly	non-reporting	Anti-Aging Ultimate Female mail-in blood \$399
Ultra Lab Tests	\$21M 2023 Revs	Anti-Aging Baseline 1 mail-in/in-person blood \$183

Defining Characteristics

Competitor test panels are conventional diagnostics typically available during annual physical

Conventional diagnostics intended to measure what's "wrong" – disease, deficiency, injury or impairment

BioMEMS biomarkers measure what's "optimal" or can be acted upon to become "optimal"



After initial market launch: AI Enhancement

BioMEMS

Technical Collaboration

Partner with AI innovation leader

Blend machine learning/natural language models to expand interaction with personal health data

Use the precision of BioMEMS test data to:

- Personalize, contextualize results

- Create new insights into personal health

- Develop routines w/reinforcing touchpoints

- Online searches to create richer interaction

- Works like a dedicated life coach 24/7

Rapidly outdistance the competition because no other at-home test provides this level of test data, therefore can't provide this level of experience

A Healthy Aging Savant. It listens. It talks.



Rapid Follow-On

AI function follows test kit to market

Rapidly outdistance the competition

First-mover advantage means ever-increasing lead on competitors

Business Model & Outlook

BioMEMS develops test internally

Investors/co-venturers fund \$3.8M development

BioMEMS owns/controls manufacturing

BioMEMS owns 100% of Intellectual Property

Partner with Global Brand Name

Private label or exclusive market vertical/region

Contracted volume = predictable cashflow

Minimize market entry risk with global reach

Projective Pro Forma

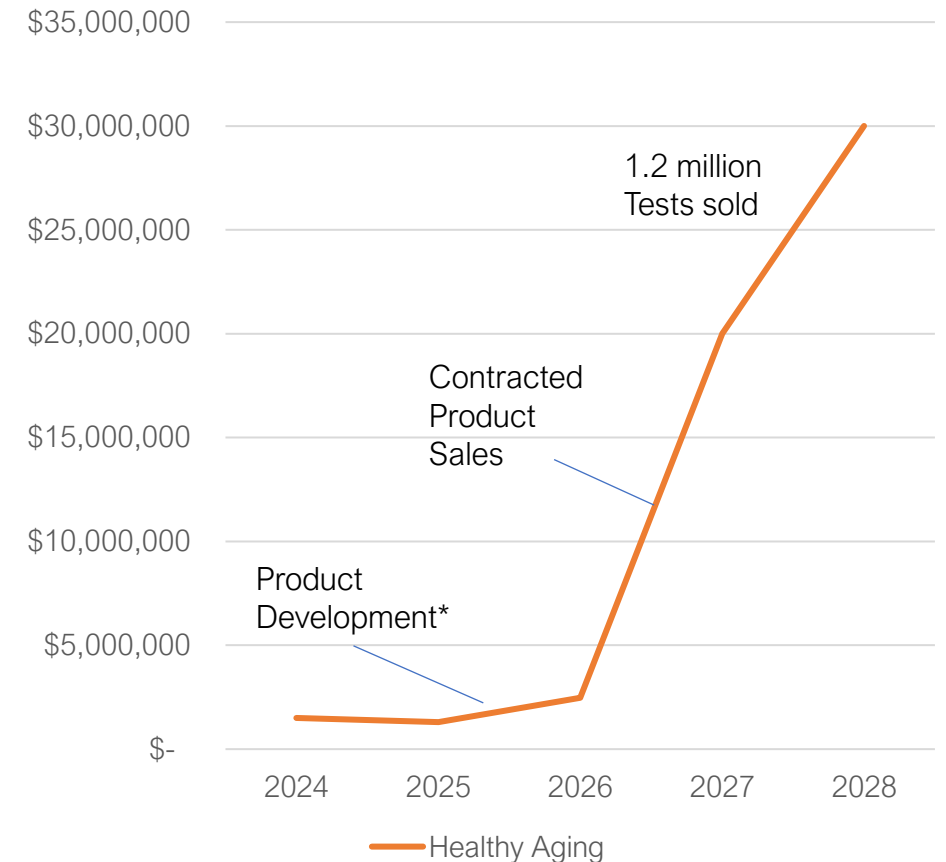
Cost of Goods Sold = \$8 per cartridge

Sell Price to Partner = \$20 - \$25 per cartridge

~75% Gross Margin

Partner MSRP = \$30 - \$60 per cartridge

Revenue Stream Projections (Low Estimate)



*2024 – 2026 cashflow primarily risk capital, non-recourse loans (NRLs), grants, non-recurring engineering studies (NRE's), SBIRs. Contracted product sales commence mid-late 2025.

Use of Proceeds

\$4.0M Late Seed Round 16 to 18-month runway

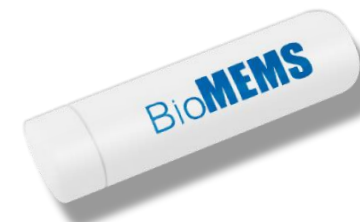
Product Development	\$	1,819
Research and Development	\$	822
IP Development	\$	186
Business Development	\$	468
Corporate and Administration	\$	705
Total	\$	4,000

Investor capital augmented by non-dilutive funding

- Government grants, loans and SBIRs
- Foundation/NGO grants
- Technical collaborations with strategics
- Non-recourse loans (NRLs)
- Non-recurring engineering studies (NREs)

\$3.0M in pre/early seed invested to date by founders

Deliverables targets at close of this Phase



~5,000 Single-Use Test Cartridges to Strategic Partners for Demo and Contract Negotiations



~50 Handheld Analyzers to Strategic Partners for Demo and Contract Negotiations



Smart Device Analytics & Tracking Application for Demo and Contract Negotiations

The Team



Michael J. Pugia, Chief Science/Technology Officer – Ph.D. Biochemistry, 450+ US/Int'l patents, 100+ published papers/posters, former Siemens IVD senior scientist, co-founder Indiana Biosciences Research Institute, former Bayer IVD lead R&D scientist



Zane R. Baird, VP - R&D – Ph.D. Analytical Chemistry, 40+ patents and papers, formerly Siemens, Indiana Biosciences Research Institute (IBRI), Baxter BioPharma Solutions R&D scientist



Matthew J. Hymes, VP Business Development – MS, MBA, 20 years in biotech and medtech, previously segment lead for infectious disease/microbiology at Illumina, formerly VP Strategic Partnerships RapidBio.



Andrew A. Dahl – Founder & Executive Chairman, Interim CEO – As CEO led ZIVO Bioscience to re-IPO and Nasdaq listing summer 2021. Various consulting and executive management roles in medtech/biotech startups since 2003. Prior experience in Fortune 50 business consulting and marketing planning as CEO, Dawber & Company, Inc.



Nick D. Romcevich, VP Product Development and Operations – ME, MBA, 20+ years of developing and releasing medical devices and diagnostics in the US and Europe. Previously the Project Leader and interim Principal Investigator for the Freeze Dried (blood) Plasma project at Terumo BCT.

Next Steps

Technical papers, patent summary and supporting materials are available upon request.
A data room for due diligence is also fully updated, with access provided upon request

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