Revolutionizing Chronic Disease Prevention Through Gut Health

Discover the missing link between gut health and chronic disease—and the breakthrough solution targeting precursor prevention at its source

Explore Our Solutions | Investment Opportunity

$1.7T TOTAL ADDRESSABLE MARKET

14× HEALTH SPAN INCREASE

67% ADULTS WITH IAPD

6 CHRONIC DISEASES LINKED

COMPANY OVERVIEW

Pioneering the Future of Preventive Medicine

At Stapgen, we are the first to unlock a revolutionary biomarker, Intestinal Alkaline Phosphatase Deficiency (IAPD) and multiple chronic diseases affecting billions worldwide.

Our Vision

To redefine the treatment of chronic disease by uncovering medicine solutions that address chronic diseases at their root, enabling people worldwide to live healthier lives free from the burden of preventable chronic illness.

Our Mission

Target a fundamental biomarker of chronic disease prevention through groundbreaking discoveries in gut health that uncover innovative diagnostic and therapeutic solutions, enabling early detection and prevention of interconnected conditions including metabolic disorders, IBD, IBS, and colorectal cancer. Reference diseases and advancements.

Our Values

Research • **Innovation** • **Excellence** • **Integrity** • **Collaboration** • **Impact**

OUR JOURNEY

A Decade of Discovery

2014

The Discovery
Dr. Hubin Li, Stap-stapes a groundbreaking discovery in IAP and Intestinal Medical School, identifying that Intestinal Alkaline Phosphatase Deficiency (IAPD) serves as the critical common link between multiple major chronic diseases.

2014–2020

Research & Development
Extensive research phase creating comprehensive literature review, clinical studies with animals and humans, development of proprietary IAP formulations and design of the retail Stapel IAPD Test diagnostic.

2020–2022

Formation & Growth
Stapgen formed to commercialize the research efforts, bringing crucial insights from dental practice about the oral bacteria-inflammation systems health connection. In 2022, he became the one of CEO, formalizing Stapgen as a company.

2022

Clinical Validation
Dr. Martha Nash publishes landmark 2-year prospective cohort study (n=247) demonstrating that IAPD increases diabetes risk 3x (hazard ratio 3.2, p<0.001), revolutionizing our understanding of diabetes pathology.

2026

Commercialization Phase
Patent applications filed, commercial strategy developed, seeking $25M Series A funding to bring breakthrough diagnostics and therapeutics to market. Positioned to transform chronic disease prevention globally.

LEADERSHIP TEAM

World-Class Scientific & Business Leadership

Dr. Madhu S. Male
CHIEF SCIENTIST
MBBS, PhD, Sanmati Medical School
Dr. Male has been practicing for over 40 years of IAP research. Published landmark discovery that IAPD increases diabetes risk 3x (hazard ratio 3.2). Author of British Medical Journal and recognized by American Diabetes Association. Former President, Indian Association of BRONN Chess, Bangalore.

Dr. Hiphih K. Male
FOUNDER & CEO
DMD, Dean University of Stomatology
Dr. Male's research in oral medicine has earned a Bangalore academy award. Graduate from Peru Dental Clinic (St. Louis). Brings 40 years of practitioner-to-patient insights into the oral-systemic health connection. Leading Stapgen's commercialization strategy and product development.

Suresh Subbiah
TECHNOLOGY ADVISOR
20+ years of technology leadership. Former Senior Director at Cisco. Founder & Global Technology Services Director, Cloud, Automation, and Blockchain. Stanford Graduate School of Business. Provides strategic guidance on technology infrastructure and digital health platform development.

Greg Bauer
CHIEF SALES STRATEGIST
MS in Health Care Delivery, Leadership from Illinois State's College of Medicine. 10 years in digital health and commercialization. Former director at HCI-MCO. Established a network of 1,000+ physicians. Leads sales strategy, commercialization strategy, and market positioning.

Dr. Dan Halpern Ruder
MEDICAL ADVISOR
Biography and credentials coming soon.

THE SCIENCE

Understanding IAPD & The Inflammation Connection

Discover how Intestinal Alkaline Phosphatase Deficiency drives chronic disease through bacterial endotoxin translocation and systemic inflammation

What is IAP?

Intestinal alkaline phosphatase (IAP) is an enzyme produced by cells in the small intestinal lumen and plays a critical role in defense against bacterial endotoxins. IAP detoxifies harmful lipopolysaccharides (LPS) from gut bacteria, can enter the bloodstream and trigger systemic inflammation.

The Hidden Health Crisis

87% of seemingly healthy people have IAP deficiency, and as an result IAP serves as the 1st biomarker of chronic disease, with deficiency linked to 6 major chronic diseases:

- Metabolic syndrome
- Inflammatory bowel disease (IBD)
- Irritable bowel syndrome (IBS)
- Colorectal cancer
- Cardiovascular disease
- Chronic kidney disease

Clinical Evidence

- Healthy population average: 450 kDa IAP
- Diabetes patients: 180 kDa IAP (60% loss)
- Results were achieved with 10-30 kDa IAPD: Diabetes risk 3x
- Hazard ratio: 3.2 (p.adjusted < 0.001)
- Diabetes risk: 3.2x increase; 20% increased diabetes risk

How IAP Protects Against Disease

1. **LPS Detoxification**
   Dephosphorylation of toxic lipids from LPS, reducing toxicity by 100-fold
2. **Barrier Strengthening**
   Upregulates tight junction proteins, preventing "leaky gut"
3. **Mucosal Inflammation**
   Potentially TLR antagonist and NF-κB inflammatory cascade
4. **Microbiome Regulation**
   Selectively inhibits pathogenic bacteria, promotes beneficial species
5. **LPS Dephosphorylation**
   Converts pro-inflammatory LPS in gastrocuts for anti-inflammatory effects

The Bacterial Endotoxin Connection

Lipopolysaccharide (LPS)
Major component of gram-negative bacteria's outer membrane. Potent LPS enters the bloodstream through a compromised gut barrier. It triggers inflammatory responses through TLR activation, leading to chronic disease.

Lipoteichoic Acid (LTA)
Cell wall component of gram-positive bacteria, including Staphylococcus. Triggers inflammatory cascades through TLR2 activation. Contributes to sepsis and chronic inflammation.

The Inflammatory Cascade
Without adequate IAP, bacterial endotoxins translocate through compromised barriers, activate TLR4 and production of cytokines (IL-6, TNF-α, IL-1β), and trigger systemic inflammation, insulin resistance, and neurodegeneration.

OUR SOLUTIONS

IAP BioDefense Therapeutic Platform

Comprehensive solutions addressing chronic disease prevention at the root

STAP-Test
Revolutionary Predictive Diagnostic

The first biomarker capable of predicting type 2 diabetes years before clinical symptoms emerge. Non-invasive stool sample testing identifies IAP deficiency, enabling early intervention and prevention.

- 3x risk diabetes risk prediction (HR 3.2, p<0.001)
- 5-10 year advance warning before symptoms
- 87% of "healthy" adults have IAPD
- Independent of obesity, age, family history
- Non-invasive stool sample collection
- Potential threshold of 90 U/g identifies risk
- Surgical monitoring tracks metabolic health

Clinical Evidence
Prospective cohort study (n=247) demonstrated that IAPD levels predicted T2D with 3x risk diabetes development over a 10% for non-risk IAPD vs 20% for increased risk.

SGI2d
Therapeutic IAP Supplementation

First-in-class oral therapeutic grade bovine intestinal alkaline phosphatase (IAP) supplement to prevent and treat chronic disease. Restores IAP function to address root cause by reducing inflamed gut barrier function.

- Multi-route delivery (liquid, oral, injectable)
- Dephosphorylates LPS, reducing toxicity 100-fold
- Strengthens gut barrier integrity
- Blocks inflammatory signaling pathways
- Modulates gut microbiome composition
- Dual regulatory mech (supplement + pharma)
- Proven safety in 20+ human clinical trials

Clinical Evidence
Phase 1 clinical trial (n=20) established safety profiles with no significant adverse events. Demonstrated significant reduction in inflammatory cytokines with IAP supplementation.

Competitive Advantages

- **Root Cause Approach**
  Only company with diagnostic and therapeutic IQ, years of research establishing market leadership.
- **Robust IP Portfolio**
  8 patents filed, with 1 granted. Covering diagnostic methods, feces testing, and therapeutic applications across multiple diseases.
- **Scientific Foundation**
  Published peer-reviewed research, 40 years of IAP research, strong clinical relationships & empirical deployment, and two clinical aggregation.
- **Multi-Disease Platform**
  Single mechanism addressing multiple chronic diseases: diabetes, Alzheimer's, cardiovascular, Parkinson's, cancer.

HEALTH CONDITIONS

Six Major Diseases Linked to IAPD

Understanding how intestinal alkaline phosphatase deficiency drives chronic disease development across multiple systems

Type 2 Diabetes
$327B
Affecting 37 million Americans, diabetes development begins years before clinical symptoms. Intestinal alkaline phosphatase deficiency is now the 1st biomarker, targeting chronic inflammation that drives insulin resistance and beta cell dysfunction.

IAPD Connection
In 3x60 increased diabetes risk (HR 3.2, p<0.001). Hazard ratio 3.2 (p.adjusted < 0.001). Intestinal alkaline phosphatase deficiency drives insulin resistance, diabetes, priming IAP protection even with other risk factors.

Alzheimer's Disease
$322B
Affecting 6.7 million Americans, progressively leads 60 million by 2060. Gut-brain axis dysfunction and neuroinflammation are emerging as key factors in brain disease of Alzheimer's, dementia, Alzheimer's, and amyloid beta aggregation.

IAPD Connection
Without adequate IAP to detoxify LPS and maintain gut barrier integrity, bacterial toxins translocate to the brain, triggering neuroinflammation, β-amyloid deposition, and tau protein aggregation.

Parkinson's Disease
$61.5B
Affecting 1.2 million Americans, projected to 1.2 million by 2030. Type 2 diabetes increases risk 1.5-2x. Gut-brain axis dysfunction is increasingly confirming causality. The gut-brain axis, enteric nervous system, and neuroinflammation.

IAPD Connection
LPS + TLR4 → increased IFN-γ, risk pathway, LPS crossing compromised gut barrier directly triggers neuroinflammation, microglial activation and α-synuclein aggregation in the enteric nervous system.

Cardiovascular Disease
$400B+
Leading cause of death in the United States, affecting 1 in 4 deaths. Chronic kidney disease (CKD) has been found directly in atherosclerotic plaques. LPS activates inflammasomes and promotes foam cell formation and plaque development.

IAPD Connection
Bacterial endotoxin translocation is beneficial in patients having bacteria.

- Immune Dysregulation
  Promotes inflammatory pathways
- Atherosclerosis
  Contributes to plaque formation
- Endothelial Function Disruption
  Leaky gut" allows bacterial translocation
- Inflammasome Activation
  IAPD deficient 1 mechanism proliferation and cytokine release, inflammasome activation, and pyroptosis. Gut-brain axis causes DNA damage and impairs immune surveillance, allowing tumor development.

Colorectal Cancer
$14–20B
100,270 new CC cases annually with early-onset CRC (under 50) projected to increase 90% by 2030.
Fusobacterium nucleatum is closely related to CRC occurrence, with LPS and TLR4 activation promoting proliferation and inflammatory pathways.

IAPD Connection
IAPD deficient 1 mechanism proliferation and cytokine release, inflammasome activation, and pyroptosis. Gut-brain axis causes DNA damage and impairs immune surveillance, allowing tumor development.

- Inflammasome Activation
  LPS/LTA crossing into systemic circulation
- Endotoxin Translocation
  LPS/LTA crossing into systemic circulation

Metabolic Syndrome
40%
Affecting 115 million Americans (40% of adults), metabolic syndrome encompasses abdominal obesity, insulin resistance, hyperglycemia, dyslipidemia, hypertension, and fatty liver disease. Gut-brain axis dysfunction is increasingly confirmed.

IAPD Connection
IAP deficiency appears to be a root cause of metabolic syndrome through shared inflammatory pathways and gut-brain axis simultaneously via the gut metabolic axis.

Common Pathogenesis: The Gut-Metabolic-Brain Axis

All six conditions share a common pathogenesis foundation:

- Intestinal Barrier Dysfunction
  "Leaky gut" allows bacterial translocation
- Chronic Inflammation
  Activated immune cells and cytokine release
- Immune Dysregulation
  Compromised immunosurveillance
- IAP Deficiency
  Loss of LPS dephosphorylation enzyme function

MARKET OPPORTUNITY

Massive Addressable Market

Addressing the $1.7+ trillion chronic disease burden with integrated prevention and treatment solutions

$1.7T+ TOTAL ADDRESSABLE MARKET
Combined U.S. annual healthcare spending for chronic conditions

$235–358B SERVICEABLE MARKET
Prevention and early intervention market for multiple disease categories

96M U.S. PREDIABETES POPULATION
Adults with elevated IAP deficiency risk, representing 40% of U.S. adults

67% ADULTS WITH IAPD
Two-thirds of healthy adults have IAP deficiency, indicating widespread risk

- **Underfunded**
  $127 million people affected by Alzheimer's, 1.2M by 2030, 37 million Americans, 1 million annual deaths worldwide.
- **Growing Market**
  Diabetes market $50B, Alzheimer's market $5B, cardiovascular market $500B, chronic kidney disease $50B (Medicare alone), IBD/IBS market $50B.
- **Diagnosis-to-Treatment Gap**
  Current tests detect only late-stage disease. Stapel IAPD detects IAP deficiency years before clinical symptoms, enabling early intervention.
- **Prevention Delivers Value**
  Preventing one case of diabetes saves $100,000 in lifetime healthcare costs. Prevention provides massive ROI, risk reduction with value effects.

Business Model

B2B Healthcare

Lab-Based STAP-Test: Hospital systems, commercial labs, specialty clinics, Medicare/Medicaid, CLIA laboratory, sales physicians for referrals, Medicare coverage, revenue per test, reimbursement.

SGI2d Distribution: Prescription pathway for diagnosed IAPD patients, specialty pharmacy, specialty clinics, wholesalers, medical supply, microbiome.

Direct-to-Consumer

Home Test Kit: E-commerce platforms, pharmacy, CPG (CVS, Walgreens), retail health clinics (Google, Walmart, Whole Foods), health clinics.

IAP Supplements: CPG supplement market, subscription model, Natural and Lab-exclusively distribution, microbiome.

The Diabetes Crisis

Current approaches have failed to stem the tide because they treat symptoms rather than causes

- **Underfunded**
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INVESTMENT OPPORTUNITY

$25 Million Series A Raise

Join us in revolutionizing chronic disease prevention. Stapgen represents a once-in-a-generation opportunity to transform healthcare from reactive treatment to proactive prevention.

14× Diabetes Risk Prediction	**4** Patents Filed	**1** Patent Approved
$1.7T Total Market	**6** Disease Categories	

Key Investment Highlights

✓ **Breakthrough Scientific Discovery:** 5-year prospective study (n=647) with HR 14.2, p<0.001

✓ **First-Mover Position:** Only company commercializing IAP-based solutions, 12+ years head start

✓ **Multi-Disease Platform:** Single mechanism addresses $1.7T market across 6 disease categories

✓ **Clear Revenue Path:** Dual regulatory track (supplement 12-18mo, pharma 5-7yr)

✓ **World-Class Leadership:** Harvard/MIT research, proven clinical expertise, strong advisors

Use of Funds: Clinical Studies & Regulatory ($10M) • Product Development ($7M) • Commercial Infrastructure ($5M) • R&D ($3M)

GET IN TOUCH

Contact Us

Learn more about Stapgen and how we're transforming chronic disease prevention

Let's Connect

Whether you're interested in our technology, seeking partnership opportunities, or exploring investment possibilities, we'd love to hear from you.

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Area of Interest

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About Stapgen

Revolutionizing chronic disease prevention through groundbreaking discoveries in gut health and intestinal alkaline phosphatase.

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