Neuro Prima

A novel cranial implant that elimimates a highly invasive, costly, and complication-heavy surgery for severe traumatic brain injury patients.

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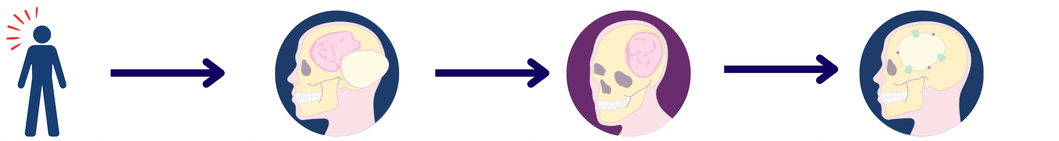
The Problem: Two Surgery Treatment

- **Traumatic Brain Injury** (TBI) is a leading cause of death and disability
- **1.7M cases & 70K deaths** annually in the US
- For severe TBIs, brain begins swelling, leading to further damage and complications
- Only **life-saving treatment** is following pathway:



Severe Traumatic Brain Injury Patients
elderly falls & vehicle accidents

Primary Surgery
26% mortality
53% complications

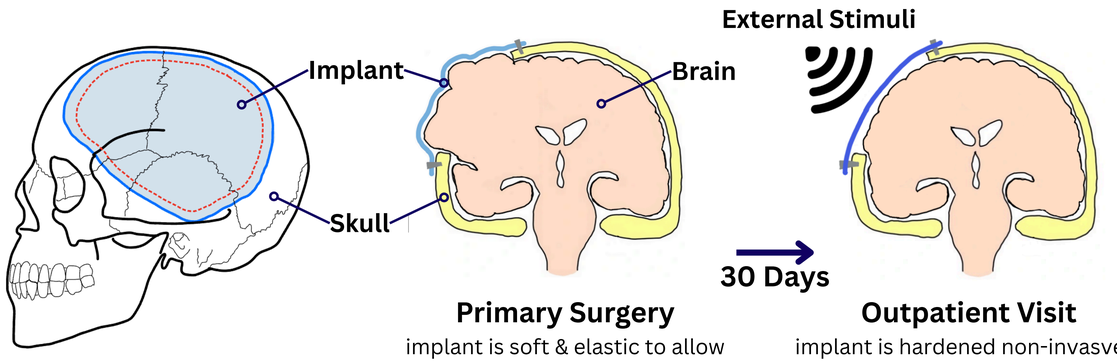
Deswelling Period
30-90 Days
without brain protection

Secondary Surgery
37% complications
30% reoperation

These **surgeries are highly invasive**, resulting in **high costs** (among the top 20 most expensive procedures in the US), **significant complications, lengthy hospital stays,** and **delayed patient rehabilitation**.

Our Solution: One Implant, One Surgery

- Transforms the standard care pathway for severe TBI patients by eliminating the secondary surgery
- Reduces the associated invasiveness, costs, complications, and rehabilitation time
- Enables a safer, faster, and more affordable treatment and recovery for patients



Primary Surgery
implant is soft & elastic to allow unrestricted brain swelling

Outpatient Visit
implant is hardened non-invasvely for life-long protection

Clinical Value for Patients

- Reduces invasive procedures
- Reduces short & long term complications
- Avoids delay in reconstruction
- Enables earlier rehabilitation

Economic Value for Payer

- Eliminates the cost of second surgery ($50,000+)
- Reduces indirect costs of hospital stay, complication management, and reoperation

Economic Value for Provider

- Upgraded payment (over 50% higher) for neurosurgeon with alternative surgery, instead of splitting payment with plastic surgeon

Neuro Prima Only Competes with the Standard of Care

	Neuro Prima	Bone Flap	Artificial Implant
Single surgery	✓	✗	✗
Optimizes reconstruction timing	✓	✗	✗
Reduces complications from unprotected brain	✓	✗	✗
Enables deswelling & reconstruction	✓	✓	✓

Large Market Opportunity

$500M
Serviceable Obtainable Market

20,000
Patients annually in US

$25,000
Neuro Prima's implant cost (82% margin)

$1B
Annual Healthcare Cost Savings

$40K
Second surgery cost

$14-24K
Current implant cost

30%
Reoperation rate from second surgery complications

Traction, Go to Market Strategy, & Pathway to Commercialization

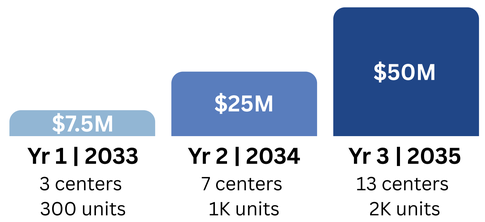
2025	2028	2033
Preclinical Studies	**Clinical Studies**	**Commercialization**
MVP, benchtop testing, animal testing, manufacturing	Feasibility, pivotal studies, PMA application, breakthrough device exemption (BDE)	Post approval study

- Identified viable biomaterials, solidified 5 viable transition mechanisms, developed proof of concept
- Collaborating with R&D labs for design and manufacturing of MVP
- Filing a provisional patent
- Engaged a law firm, regulatory, reimbursement and investment experts to help define our regulatory strategy, prepare for FDA pre-submission, and understand required funding for commericialization pathway
- Established partnerships with key opinion leaders and product champion neurosurgeons at Johns Hopkins Hospital

Business Model

- Direct sales
- 216 high-volume Level I Trauma Centers
- Key opinion leaders
- Centers of excellence

Revenue Projections



Yr 1 | 2033
3 centers
300 units

Yr 2 | 2034
7 centers
1K units

Yr 3 | 2035
13 centers
2K units

- Initial focus on centers with high procedure volume and payor concentration
- Device cost embedded within existing DRG code to streamline adoption without significant changes to reimbursement

Our Team

Arjun K. Menta: Clinical Lead
The University of Texas at Austin, B.S.A Biochemistry, B.B.A May 2020
Johns Hopkins School of Medicine M.D. Candidate, May 2025 | Paul & Daisy Soros Fellow 2023

Ava Taylor: Research Lead
High Point University, B.S. Biology May 2024

Kenneth Nova: Business Lead
Tufts University, B.A. May 1986
Northwestern University, Kellogg School of Management, MBA June 1993

Shreya Jindal: Technical Lead
Rice University, B.S. Bioengineering May 2024

Sofia Garcia del Barrio Cervera: Technical Lead
University Carlos III of Madrid (Spain), B.S. Biomedical Engineering May 2023 | La Caixa Fellowship 2023

Mentors & Advisors

We are grateful to be **advised by serial MedTech entrepreneurs, world-renowned neurosurgeons with significant experience in innovation development, and strategic experts.** Our team is continuously supported by the Center for Bioengineering and Design and an extensive network of industry, FDA and patent advisors who guide our key strategic and business decisions.

- **Dr. William Anderson (M.D, Ph.D.): Clinical PI**
  Professor of Neurological Surgery | Johns Hopkins University School of Medicine
- **Dr. Risheng Xu (M.D, Ph.D.): Clinical PI**
  Assistant Professor of Neurological Surgery | Johns Hopkins University School of Medicine
- **Dr. Youseph Yazdi (M.B.A., Ph.D.): CBID Program Executive Director**
  Former Corporate Director at Johnson & Johnson
- **Dr. April Zambelli-Weiner (Ph.D.): Strategic Mentor**
  Regulatory Expert | CEO of TTi Health Economics
- **Dr. Ashish Nimgaonkar (M.B.B.S., M.S.): CBID Associate Medical Director**
  Assistant Professor of Gastroenterology | Johns Hopkins University School of Medicine