

March 2016: PLOS Collection on the role of health innovation

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Grand Convergence: Aligning Technologies & Realities in Global Health

In this PLOS Collection, global health leaders chart the path to a dramatic reduction in the global burden of disease by 2035. This ambitious convergence in global health will require strategic investments in research and development as well ...

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Sections ▾

[f](#) [t](#) [e](#)

<http://collections.plos.org/grand-convergence>

Transformative technologies for SDG #3: We focus on 2 targets

- First target
 - By 2030, end the epidemics of AIDS, tuberculosis, malaria and ***neglected tropical diseases*** and combat hepatitis, water-borne diseases and other communicable diseases
- Second target
 - By 2030, end ***preventable deaths of newborns and children under 5 years of age***, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births



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Pathfinder Awards: projects we've funded

Use of secretion inhibitors as novel antifungal drugs

Meningitis due to the fungal pathogen *Cryptococcus neoformans* is rampant in Africa. Nearly one third of meningitis patients have shown treatment failure or resistance to currently available antifungals, demonstrating a tremendous need for the identification and development of new drugs to combat this fungal infection.

A Pathfinder Award to Prof. Marcio L. Rodrigues (Centre for Technological Development in Health, Fiocruz, Brazil), in partnership with the Institute of Pharmaceutical Technology of Farmanguinhos will provide pilot funding for the search of antifungals with the ability to inhibit the cellular traffic of key virulence factors used by *C. neoformans* to cause damage to host cells.



Neonatal Encephalopathy (NE)

- Some 830 women still die every day from causes related to pregnancy or childbirth. This is about one woman every two minutes.
- An estimated 2.6 million children worldwide were stillborn in 2015.
- Over 1 million newborns around the world die each year on their first and only day of life.
- A large proportion of **neonatal encephalopathy (NE)** births in LM-I countries occur out of hospital settings or in poorly equipped, dysfunctional facilities, requiring transport to ICUs in neighbouring towns.
- Millions of survivors are permanently affected.



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Therapeutic Hypothermia (TH)

- By far the most potent neuroprotectant
- Must be initiated during the "therapeutic window"
< 6 hours of birth
- Rationale and Approach
 - No dedicated TH device for neonatal transport exists
 - TH devices in hospitals induce whole-body TH with potential systemic complications
 - Few can be modified for ambulances
 - "Low cost" is not always affordable for Public Health

Our solution: Baby-Thermocrown™

- A light, energy-independent, hypoxic-ischemic neonatal care hypothermic device with integrated EEG sensors
 - Economically feasible (< US\$ 300 per unit)
 - Portable, activated on demand
 - No need of hospital facilities or electricity
 - Selected for the final round of review, *Saving Lives at Birth* Grand Challenge Round 6 award
 - PI Renato Rozental (CDTS/Fiocruz) invited to participate in the DevelopmentXChange to be held in Washington, DC July 26-28



Our solution: Baby-Thermocrown™

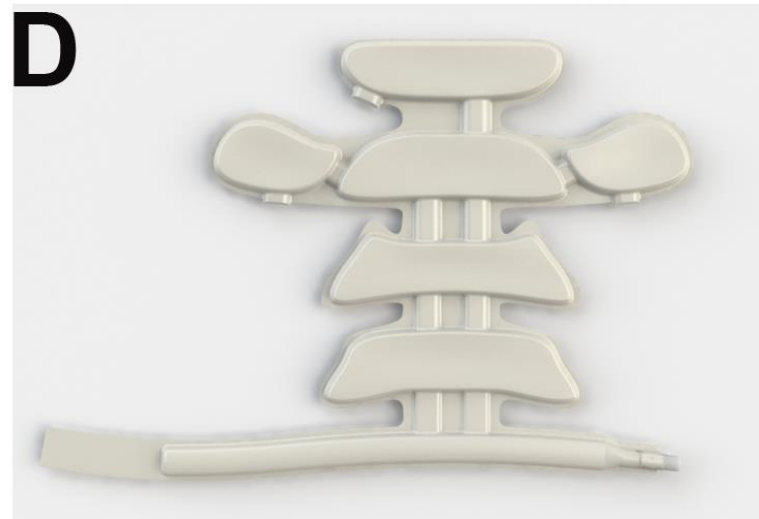
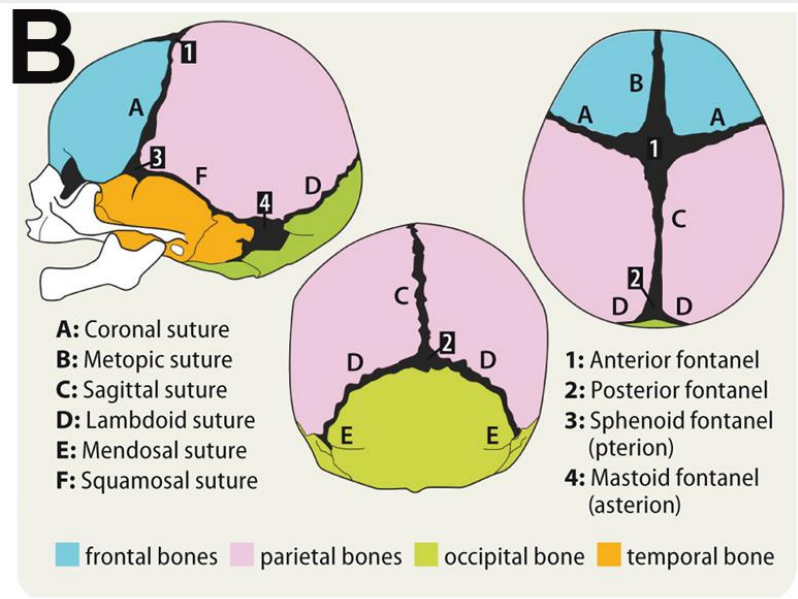
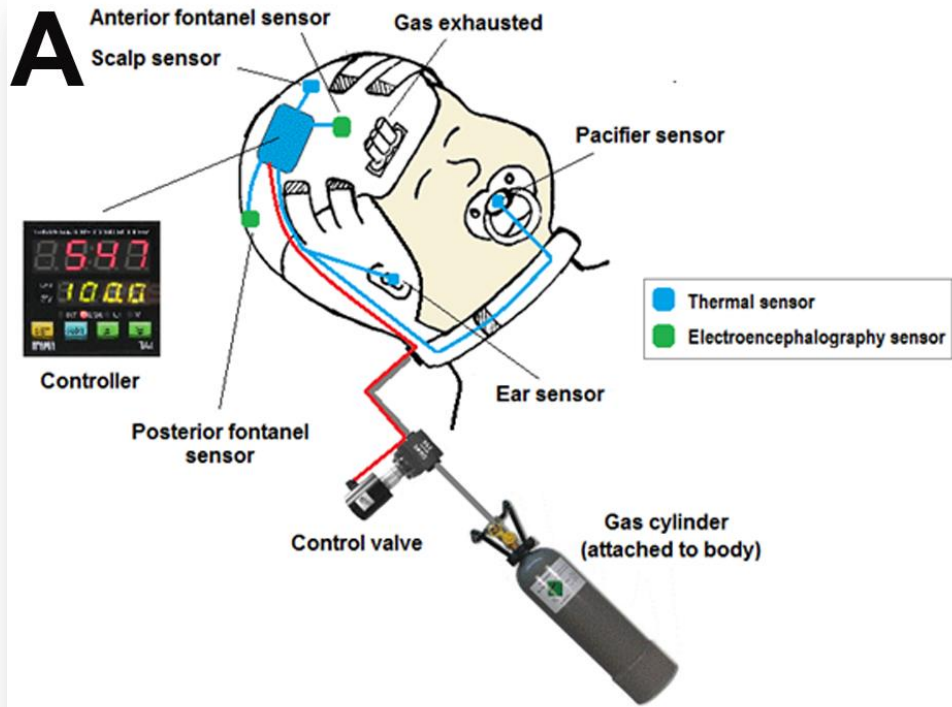


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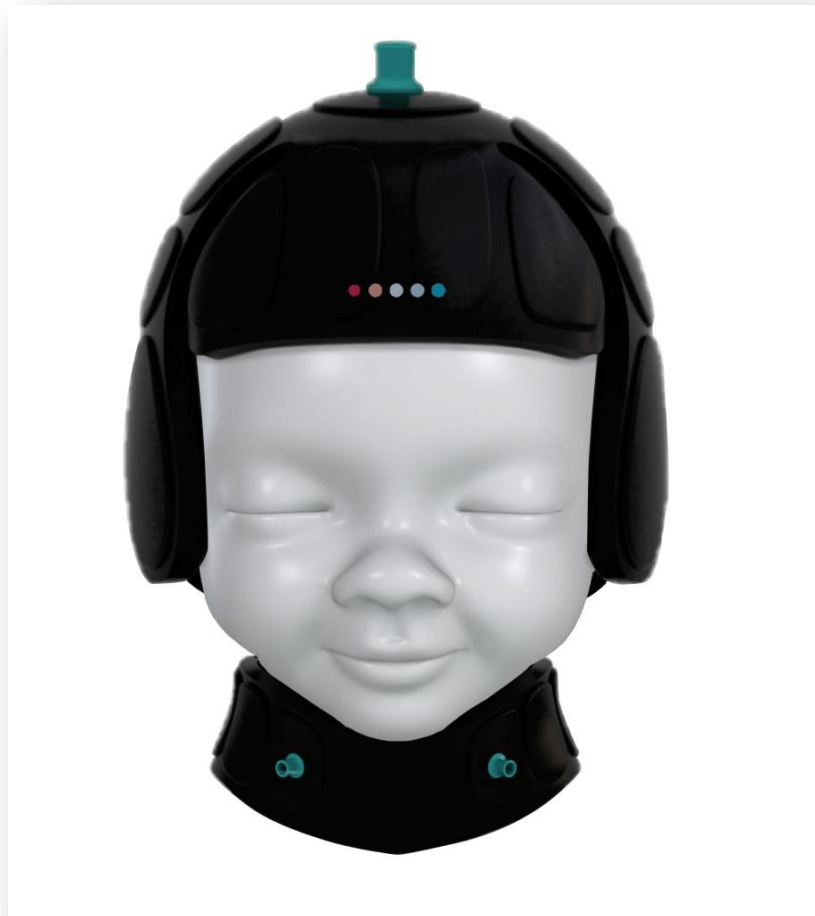


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Thank you
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