

Pediatric Blood Sampling

Design Review 1 (2/23): Veins 1

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Blood drawing is essential for testing of genetic & hormonal diseases



Enables early diagnosis and treatment and is an indicator of overall health

Baby veins are difficult to find when drawing blood

Difficulties for Medical Professionals

Finding baby veins

- More subcutaneous **fat**

Keeping baby still and calm

- **Movements** make needle placement harder
- Stress causes **vessels to constrict**



Baby veins are difficult to find when drawing blood

Difficulties for baby

- Multiple punctures in different directions -> **ruptured tissue** and **pain**
- Distress from **multiple attempts**
- Fear of strangers in hospital setting
- Trouble falling asleep

Difficulties for caretaker

- General **frustration** and **distress** with failed attempts



Medical professionals draw blood from baby arm

Easily locate veins to avoid repeated punctures

Protect user from needle injury

Hold patient still in an appropriate position



What do the users need?

Patients (babies > 5 months)

- Minimize pain and anxiety
- Sterility and safety
- Compatible with anatomy

Caretakers

- Minimize anxiety



The size of the market for baby products is growing



In 2021

Global baby products
market size was valued at
USD 214.13 billion

<https://www.grandviewresearch.com/industry-analysis/baby-products-market>

Our Project Goal



Designing a way to address difficulty in finding veins in babies that reduces repeated puncturing during blood draws