

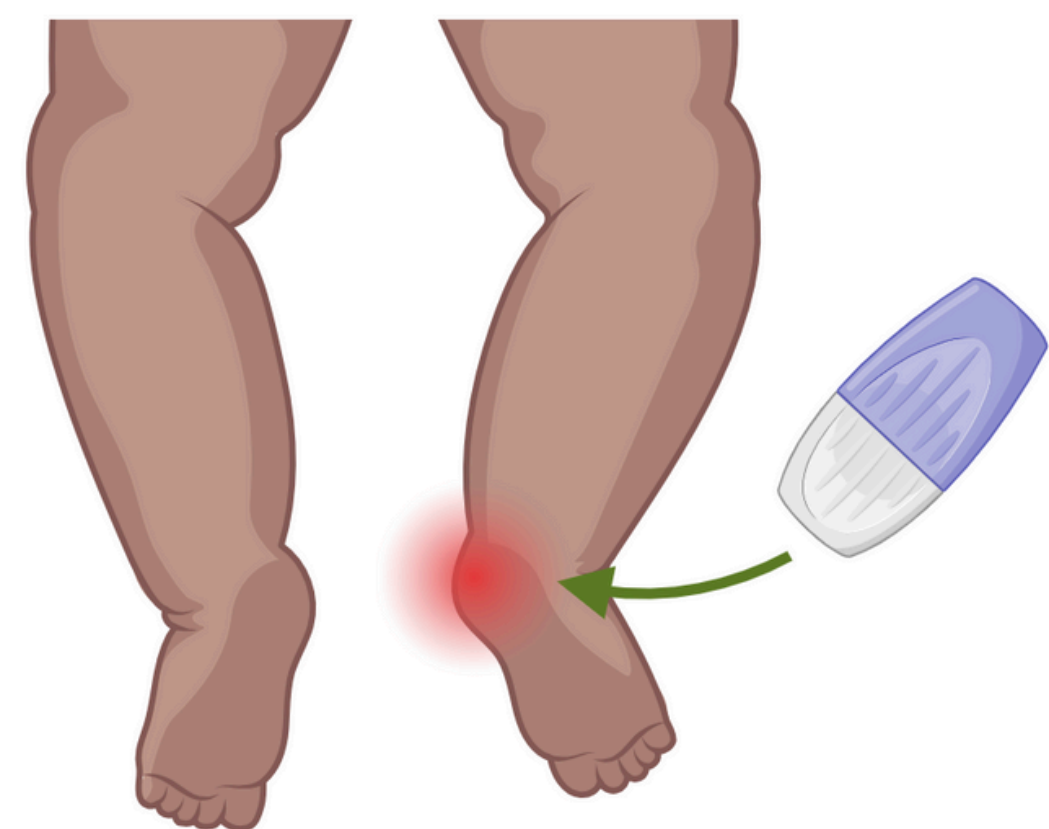
BACKGROUND

Prematurity is a serious risk factor for hypoglycemia (low blood glucose concentration), one of the most common and critical metabolic disturbances in neonates^[1]

Hypoglycemia incidence ranges from 20-73% in preterm infants^[2] which, left untreated, can result in **seizures, coma, cognitive impairment, and death**^[3,4]

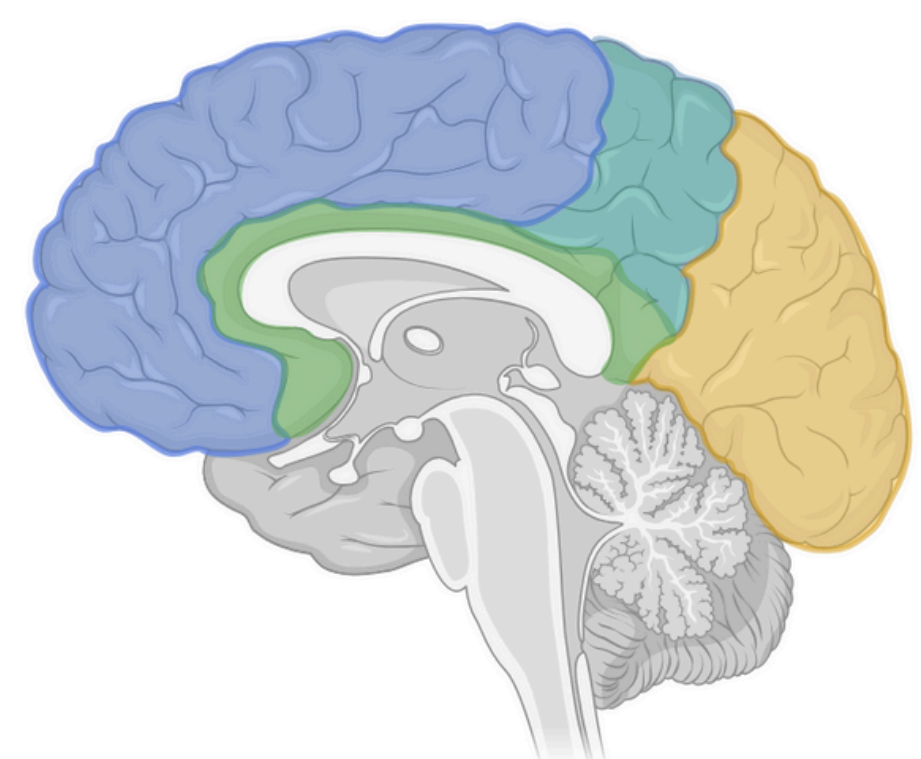
The American Academy of Pediatrics (AAP) establishes blood glucose monitoring as a necessary part of the intensive care workflow for at-risk infants

PROBLEM



1 Current point-of-care glucose monitoring (i.e., the heel-stick method) is the most frequent noxious procedure performed in the NICU.

2 AAP guidelines are shifting away from conducting painful procedures in the NICU due to links to infection, pain, and breastfeeding interruption—affecting both parent and patient^[5].



3 Such interruptions during these critical developmental stages are associated with neuro-developmental deficits and hyperalgesia which emerge later in life^[6].

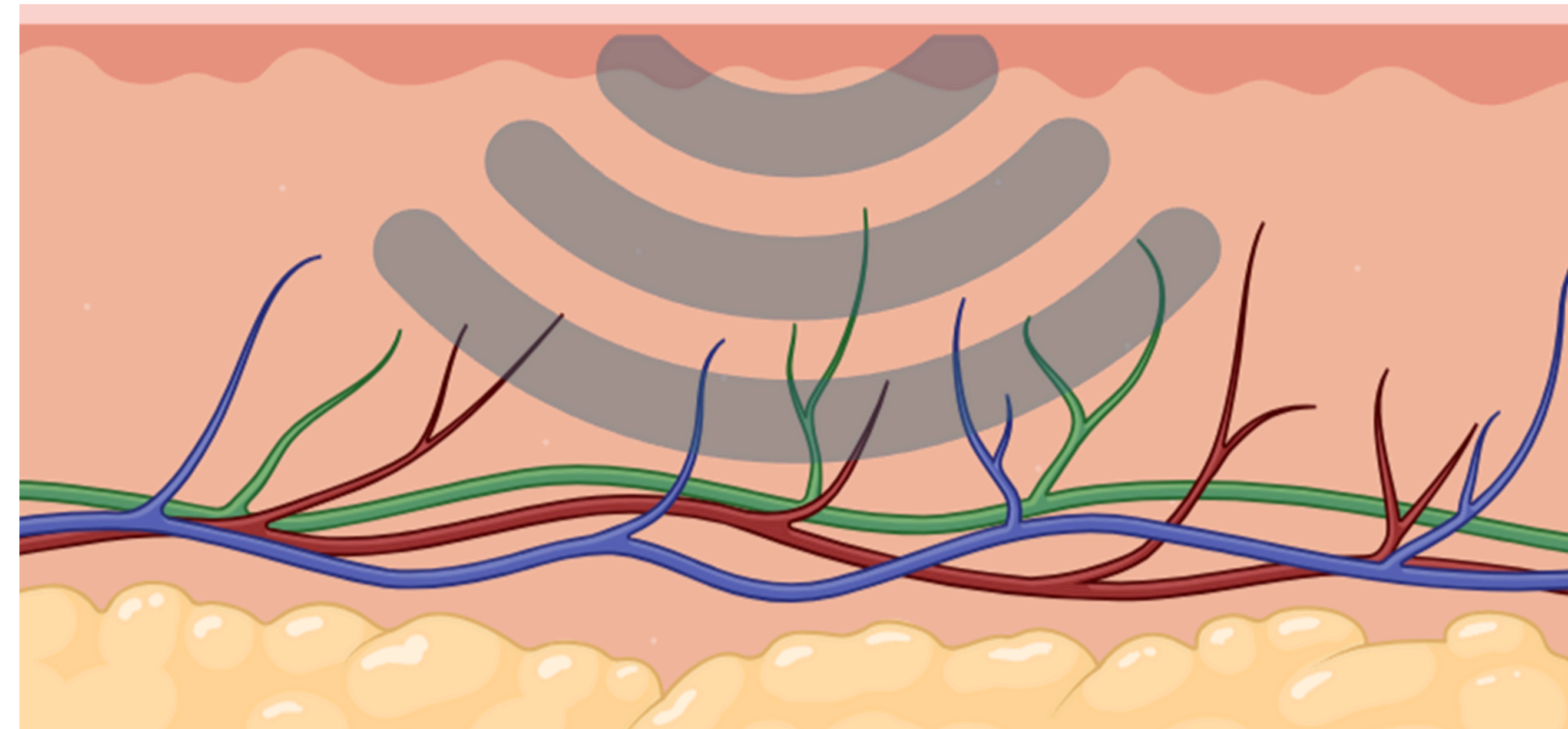
CLINICAL NEED

A method to continuously monitor blood glucose concentrations in preterm neonates in the NICU is required to diminish adverse neurodevelopment from hypoglycemia and noxious medical procedures.

OUR SOLUTION

We utilize radio frequency technology to obtain real-time measurements of blood glucose concentration.

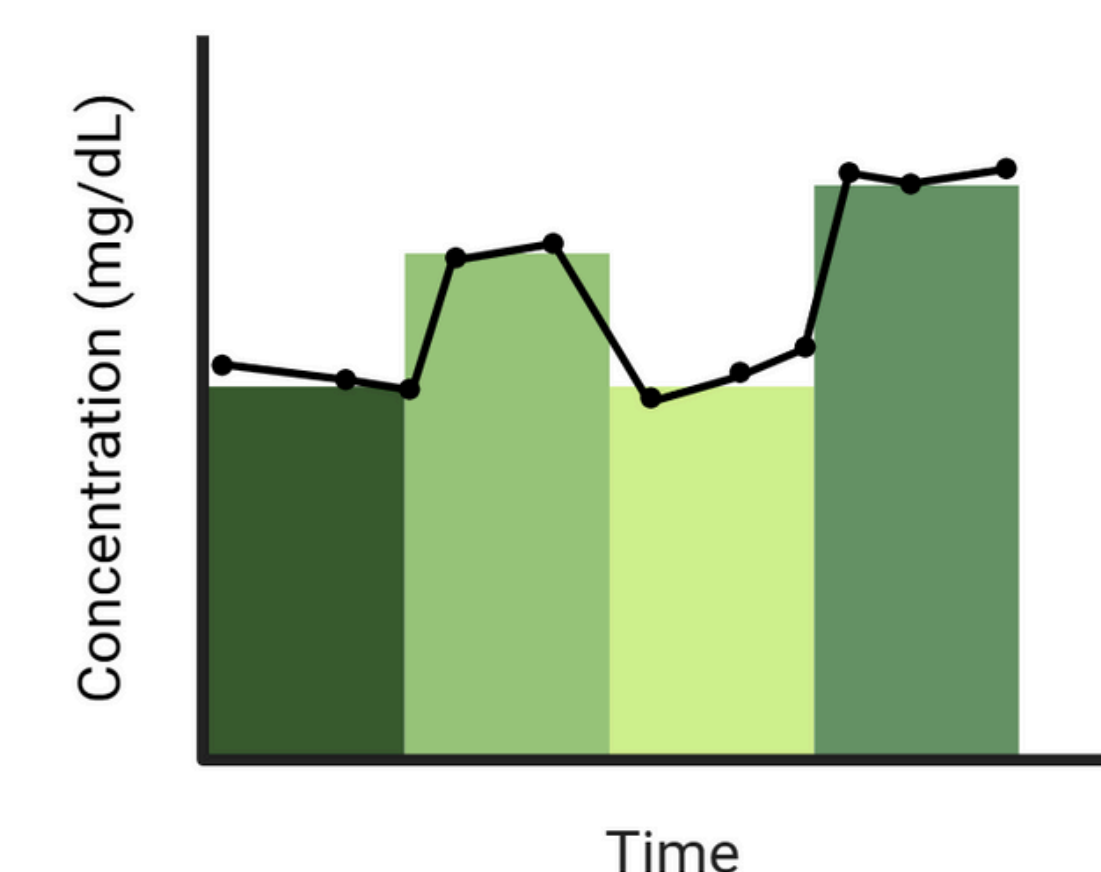
No invasive blood draw needed.



Device secured on the skin for continuous measurements

Measurement interval can be set in accordance with hypoglycemia risk

Diagnostic trends can be easily isolated by clinicians



USER NEEDS

Accuracy of Measurement

Real-time and Continuous Monitoring

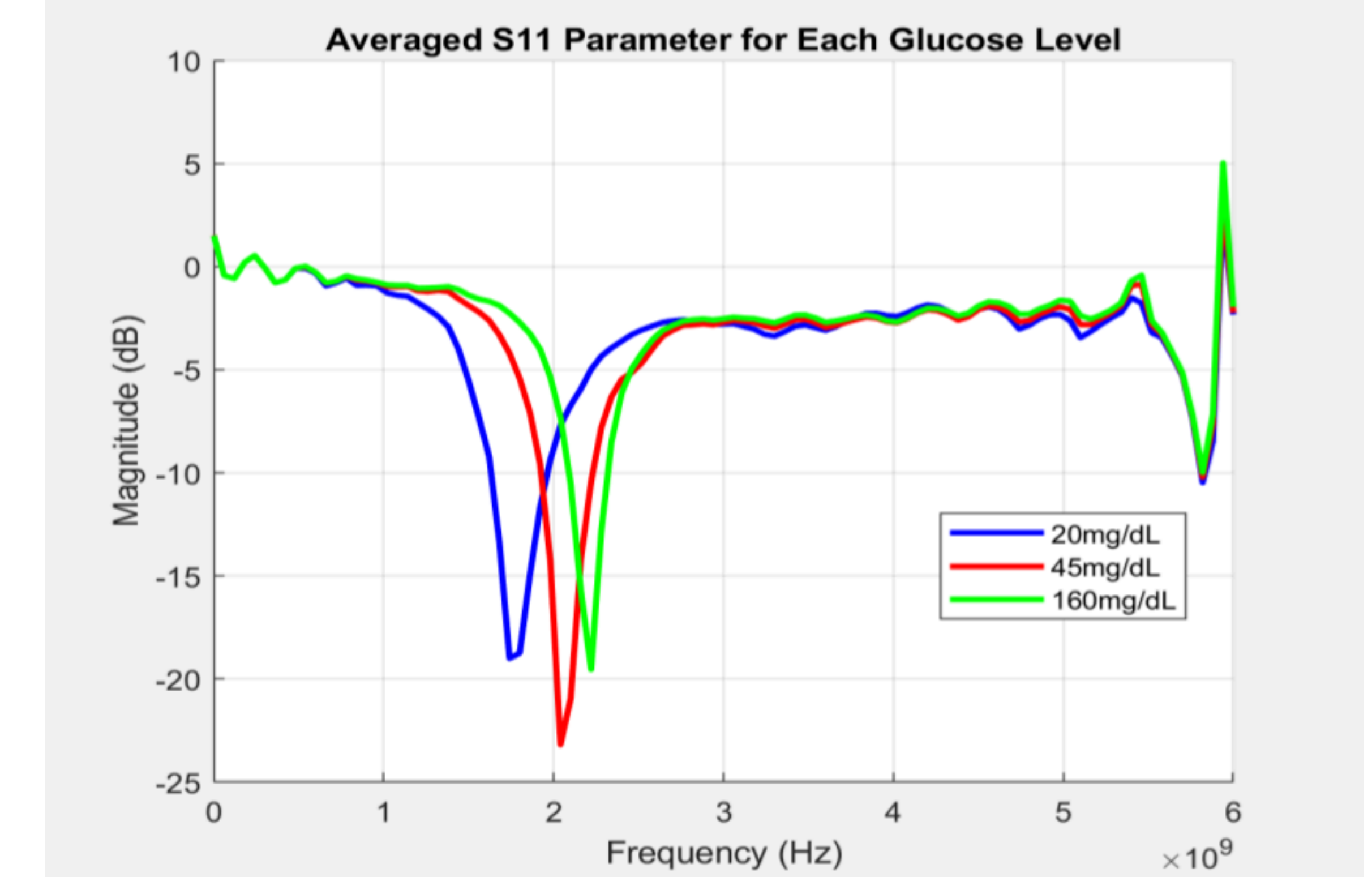
Neonatal Skin Safety and Biocompatibility

Minimal Interference by External NICU Factors

Secure and Ergonomic Placement of Antenna

Integration with NICU environment and workflow

TESTING RESULTS



Preliminary tests show that our device is able to distinguish differences in glucose concentration.

NEXT STEPS

- ➔ Perform rigorous safety testing
- ➔ Conduct animal model testing
- ➔ File for a provisional patent
- ➔ Perform patient studies

WORKS CITED

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