

Maternal and foetal lactate sensing devices

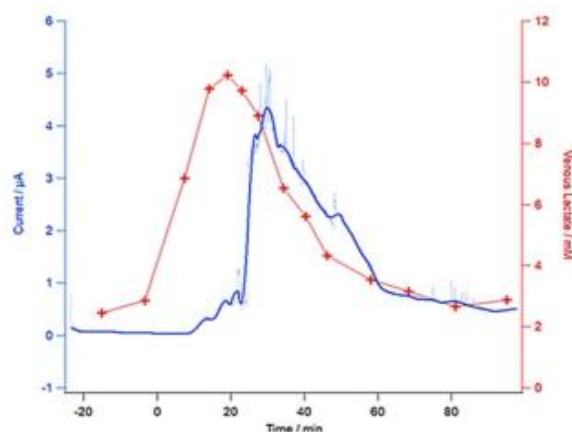
Creating a non-invasive lactate-sensing medical device to diagnose sepsis during labour and predict need for c-section.

Unmet need

Maternal sepsis is a life-threatening condition where infection leads to organ dysfunction. Delays in identifying intrapartum sepsis can result in lasting complications for women and their babies. 9% of maternal deaths in the UK are due to sepsis, highlighting the need for better monitoring and treatment.

Technology

A University of Liverpool clinician is developing 2 medical devices for real-time minimally-invasive monitoring of lactate during labour—one for the mother and one for the foetus. In maternity care, lactate levels are used to support decision making, especially around evolving sepsis during labour or postpartum haemorrhage management. We are working with an industry contractor (MedTechToMarket), who have developed a wireless maternal device. The foetal device is still in early development.



Device (blue) accurately measures lactate (red).

Benefits

Current clinical practice involves taking a blood sample to measure lactate, providing a snapshot of the clinical situation, which can change rapidly. Our device uses next-generation lactate-sensing technology from our partner DirectSens GmbH, which enables accurate and continuous interstitial lactate sensing. Existing lactate sensing technology (e.g. for sport use) doesn't have the signal-to-noise ratio required for a medical device.

Intellectual property

This is a collaboration with Imperial College London. The underlying lactate sensing technology is under patents by DirectSens GmbH (EP4352210A1, WO2025061834A1, WO2025003065A1); we have a collaborative working relationship and a letter of intent from them to continue collaborating on this opportunity.



Wireless device (top) and clinical testing (bottom).