

Tiny wireless sensors could revolutionize how premature babies are monitored

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covery and breathing disorders, according to a new study in the and foot proved just as reliable n rates, temperature, blood

pressure and blood-oxygen level.

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Each year, 300,000 American newborns are admitted to the neonatal ICU. At any moment, an alarm may signal that they need help. The new ultra-thin electronic patches could break preemies free of the wires that monitor them and safely allow them a less confined start to life, reports CBS News' Dr. Jon LaPook.

When Olivia McDonough arrived 15 days ahead of schedule, she needed surgery to help her breathe and swallow. Her first two weeks were spent wired to machines at Chicago's Lurie Children's Hospital, watched closely by her mom, Casey. All these wires monitor a newborn's breathing and circulation and alert doctors to any sign of infection.

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"When you're breastfeeding, is it clunkier to have the wires?" LaPook asked.

"We're tangled... We're tethered. We're kind of at the mercy of the cords," Casey said.

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Western University has given birth to a new way of monitoring vital signs and oxygen levels. An ultra-thin electronic monitoring station.

...working to improve human health," John Rogers said. For more than a decade, Rogers and his research team have been fine-tuning this sensor technology.

"We had a clear vision. This is where we wanted to end up," he added. "And we couldn't be happier with the outcome."

The sensors were gentle on fragile neonatal skin, which is 40 to 60 percent thinner than that of an adult. Study co-author Dr. Amy Paller treats skin injuries in preemies.

"Forty-five percent of them come away with some kind of scars from procedures and from the adhesives that attach them to these various wired devices," Paller said.

The wireless patches allow parents to do something they're wired to do - cuddle with their newborns.

"There have been studies that have shown that that skin-to-skin contact, especially in these premature babies, decreases the risk of developing infection, of kidney issues, of lung issues. It goes a long way," Paller said.


And cutting those cords would have one very practical advantage: "Changing a diaper will be easier without all the cords," Casey said.

While final testing is completed, babies in the study wore both the new patches and the old wires as a backup. Doctors said it will be about two years before these sensors are in regular use.

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