

Scientists create artificial womb that could help prematurely born babies

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Scientists have created an "Artificial womb" "in the hopes of someday using the device to save babies born extremely prematurely.

According to the study published recently involving eight animals found the device appears effective at enabling very premature fetuses to develop normally for about a month. So far the device has only been tested on fetal lambs.

Alan Flake, a fetal surgeon at Children's Hospital of Philadelphia who led the study published in the journal Nature Communications said, "We've been extremely successful in replacing the conditions in the womb in our lamb model."

"They've had normal growth. They've had normal lung maturation. They've had normal brain maturation. They've had normal development in every way that we can measure it. What we tried to do is develop a system that mimics the environment of the womb as closely as possible. It's basically an artificial womb."

Flake also added that group hopes to test the device on very premature human babies within three to five years.

The device consists of a clear plastic bag filled with synthetic amniotic fluid. A machine outside the bag is attached to the umbilical cord to function like a placenta, providing nutrition and oxygen to the blood and removing carbon dioxide.

"The whole idea is to support normal development; to re-create everything that the mother does in every way that we can to support normal fetal development and maturation. If you can just use this device as a bridge for the fetus then you can have a dramatic impact on the outcomes of extremely premature infants," Flake added

The device in the fetal lamb experiment is kept in a dark, warm room where researchers can play the sounds of the mother's heart for the lamb fetus and monitor the fetus with ultrasounds.