

## - Breast feeding / Virus

**Breast milk 'gives babies protection against Covid-19'**

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**NEWBORN** babies could have extra protection against Covid-19 by drinking their mother's breast milk, a new study has shown.



Researchers at Swansea University and the University of Aberdeen found the ACE2 protein, which is commonly found in breast milk, acts as a “decoy” for the virus, trapping it in biological fluids and preventing it from infecting cells.

The study may go some way to understanding why newborn babies are relatively protected against coronavirus and its harms when compared to older age groups.

The same protective effects were also found in amniotic fluid where the concentration of the ACE2 protein is high, meaning babies are also given greater protection before they're born.

April Rees, a Swansea University PHD student and biochemistry tutor, said: “It has been a peculiar finding that babies before and after birth are relatively protected from SARSCOV-2.

Our findings here may shed some light on why that is.

“It adds to the argument that breastfeeding is more beneficial, and so assistance in helping mothers breastfeed is vital.”

The researchers explained that membrane-bound receptors ACE2, CD26, CD147 and NRP1 facilitate Covid-19 entry into the cell.

But previous studies have suggested that soluble forms of the ACE2 protein actually end up trapping the virus and stopping it from causing further infection of cells.

Using breast milk and amniotic fluid donated by women pre-covid and archived, the study measured the presence of these soluble receptors and found a high concentration.

After imaging the proteins, the team discovered that these receptors have different isoforms, the same molecule but varying lengths.

The rich presence of these soluble receptors in breast milk and amniotic fluid may act as decoy receptors. It could help explain the low chance of infection and severity of the virus in babies.

Professor Stephen Turner, a consultant paediatrician at Royal Aberdeen Children's Hospital and honorary professor at the University of Aberdeen, said: “There is a long list of good reasons why mothers should breastfeed their baby wherever possible, and protecting baby against Covid-19 could now be added to the list. Pregnant mothers can also protect themselves, and baby, by having the Covid-19 vaccine.”

Scientists claim understanding the process of this resilience against severe Covid-19 in pregnant women and newborns could be “critical” to ensuring ongoing vigilance in care and provide an insight into its possible effectiveness against other viral infections.

The research team hopes to isolate the various isoforms to identify which is more optimal for binding the virus, evaluating whether breast milk and amniotic fluid inhibit viral entry into cells.

Funded by the EPSRC Impact Acceleration Account (IAA) at Swansea University and the Welsh Government Ser Cymru III Tackling Covid-19 initiative, the study was published in *Pediatric Allergy and Immunology*.