

Bid to beat baby chest infection boosted by immune study

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Babies at risk of a serious lung infection could be helped by a therapy based on the body's natural immune defences.

Scientists have found that a compound produced by the body's [immune system](#) can kill the virus that causes the disease - known as [respiratory syncytial virus](#), or RSV.

Their study - which involved mice and healthy adults - suggests that treatments that encourage the immune system to produce more of this compound could help to protect infected babies from developing a life-threatening illness.

Such treatments could also protect elderly people with respiratory or cardiovascular disease, who are vulnerable to the infection.

Around a third of all children become ill from RSV infection before the age of two. In some cases, the infection can develop into a life-threatening illness that requires hospital attention.

Researchers at the University of Edinburgh found that the compound - called cathelicidin - directly attacks virus particles, stopping them from binding to and infecting the body's cells.

Mice that cannot produce cathelicidin are more susceptible to RSV, the team found. However, treating them with the compound at the same time as infection with RSV stops the animals from becoming ill.

The study from the University's MRC Centre for Inflammation Research also showed that healthy adults who produce lower levels of cathelicidin in their nose are more susceptible to RSV infection. This suggests that the compound could prove useful as a therapy for people, the researchers say.

Scientists now plan to investigate why some people produce more cathelicidin than others, in the hope that they can find new ways of boosting natural production of the compound.

RSV infection causes a respiratory illness called bronchiolitis in young children that results in breathing difficulties and wheezing. Millions of infants around the world are affected each year.

The disease is common in winter and also affects older people, especially those with heart and lung diseases and those with compromised immune systems, such as cancer patients.

The study, to be published in the latest issue of the *Journal of Immunology*, was funded by the Medical Research Council.

Dr Donald Davidson said: "Our study shows that boosting the body's natural defences could be a useful therapeutic approach to stop RSV infection from turning into a life-threatening [infection](#) in babies and vulnerable adults."

More information: S. M. Currie et al. Cathelicidins Have Direct Antiviral Activity against Respiratory Syncytial Virus In Vitro and Protective Function In Vivo in Mice and Humans, *The Journal of Immunology* (2016). [DOI: 10.4049/jimmunol.1502478](https://doi.org/10.4049/jimmunol.1502478)

Provided by University of Edinburgh

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