

Magic ingredient in breast milk protects babies' intestines

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Scientists at Queen Mary, University of London have discovered that an ingredient in human breast milk protects and repairs the delicate intestines of newborn babies.

The ingredient called pancreatic secretory trypsin inhibitor, or PSTI, is found at its highest levels in colostrum - the milk produced in the first few days after birth.

The lining of a newborn's gut is particularly vulnerable to damage as it has never been exposed to food or drink. The new study* highlights the importance of breastfeeding in the first few days after the birth.

The researchers found small amounts of PSTI in all the samples of breast milk they tested but it was seven times more concentrated in colostrum samples. The ingredient was not found in formula milk.

The researchers examined the effects of PSTI on human [intestinal cells](#) in the lab. When they inflicted damage to the cells they found that PSTI stimulated the cells to move across the damaged area forming a natural protective 'plaster'. They also found that PSTI could prevent further damage by stopping the cells of the [intestine](#) from self-destructing. Additional research suggests that PSTI could reduce damage by 75 per cent.

PSTI is a molecule which is normally found in the pancreas where it protects the organ from being damaged by the [digestive enzymes](#) it

produces. Research suggests that it plays a similar protective role in the gut.

The team at Queen Mary have also found that PSTI is produced in the breast but until now they did not know exactly why.

Professor Ray Playford of Barts and the London School of Medicine and Dentistry, part of Queen Mary, University of London led the study.

He said: "We know that breast milk is made up of a host of different ingredients and we also know that there are a number of health benefits for babies who are breast-fed.

"This study is important because it shows that a component of breast milk protects and repairs the babies delicate intestines in readiness for the onslaught of all the food and drink that are to come.

"It reinforces the benefits of breast feeding, especially in the first few days after birth."

More information: Pancreatic secretory trypsin inhibitor us a major motogenic and protective factor in human [breast milk](#), Marchbank et al, *Am J Physiol Gastrointest Liver Physiol* 296: G697-G703, 2009

Source: Queen Mary, University of London ([news](#) : [web](#))

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