

Osiris Biotechnology Ltd

The story of how an 'off the cuff' idea for an imaginary company led to a real start-up with a device that could benefit millions of people.



The Newcastle team: Beth McDonald, Daniel Bishop, Eileen Leung and Amy Openshaw

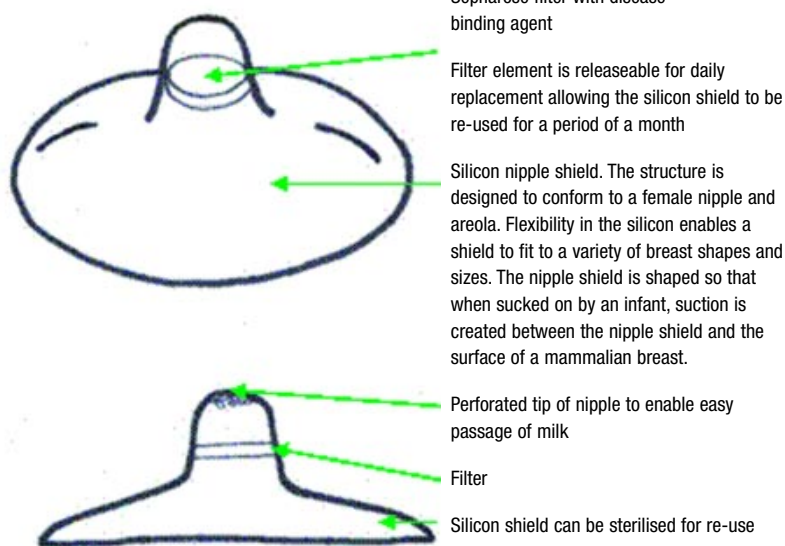
Amy Openshaw of Newcastle University offers wise advice to researchers who are thinking about commercialising outputs from their research: "Just because an idea seems obvious does not mean it has already been done!"

Her observation arises from her experiences in the 2006 Biotechnology YES Competition (see page 3) where she was one of a Newcastle team. The team's idea was to develop a device that could selectively filter out viral particles transmitted from mother-to-baby at breastfeeding. They assumed that such a device had already been developed but could not find any evidence that it had.

Once they realised, through discussions with their local Enterprise Centre and the speakers and mentors on a Biotechnology YES workshop, that their idea had real potential, things changed rapidly. "Our idea needed to be protected, and fast," says Amy. "The next 48 hours were frantic."

The primary device comprises: a rubber or silicone nipple shield having a base and a protusion that is shaped to conform to a mammalian female areola and nipple, a number of protusions in the tip of the nipple to enable easy passage

of milk, and a filter fitted inside the nipple to enable binding of specific viruses. The device may further be adapted and applied to machines that express milk and to feeding bottle teats permitting storage of filtered milk.



Sepharose filter with disease binding agent

Filter element is releaseable for daily replacement allowing the silicon shield to be re-used for a period of a month

Silicon nipple shield. The structure is designed to conform to a female nipple and areola. Flexibility in the silicon enables a shield to fit to a variety of breast shapes and sizes. The nipple shield is shaped so that when sucked on by an infant, suction is created between the nipple shield and the surface of a mammalian breast.

Perforated tip of nipple to enable easy passage of milk

Filter

Silicon shield can be sterilised for re-use

The simple method removes viral particles with an estimated efficiency of over 98%. "It has the potential to be adapted to selectively filter seven of the known diseases transmitted through breast milk," says Amy. "These include HIV, Hepatitis, West Nile Virus and Tuberculosis."

As a result of their Biotechnology YES experience, the team won the 'Science and Technology Achievement Award' sponsored by the Centre of Excellence for Life Sciences, to gain start-up funds for their company Osiris Biotechnology Ltd.

The Newcastle team plans to develop and sell product licences to large medical device companies. Market and financial analysis has indicated that from start-up expenditure of £24k, the team can generate £280k from licence and product sales by end of year two. It is predicted that the product will achieve 10% market penetration in a further two years, resulting in a £1.6M intake from the first licence sold.