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LAST week, Britain's first stem cell bank was opened, allowing parents to store their baby's blood in the hope that it could cure serious health problems in later life. Ballerina Darcey Bussell decided to go ahead with the pioneering procedure after the birth of her second baby, Zoe. Darcey, 34, who lives with her husband Angus, a banker, talks to MARIANNE POWER.

JUST nine weeks after the birth of her daughter Zoe, Darcey Bussell is back in her house — the Royal Opera House — back to work and marvelling at the ease of her second birth.

With her svelte post-natal figure dressed in a casual black tracksuit, it is hard to believe she has seen her 30th birthday, let alone that she is a mother-of-two. But as she talks about her daughters, it is clear where her priorities lie.

Darcey realised the precious nature of her children's health when a serious case of pre-eclampsia put her first baby's life — and her own — in danger. When she fell pregnant with her second daughter, Zoe, she took no chances and signed up to an unusual form of health insurance.

Although the pioneering procedure — which involves freezing blood from her newborn baby's umbilical cord — is controversial, Darcey believes that one day it could be used to treat anything from blood conditions to cancer, and wants mothers everywhere to know about it.

Darcey did not know about stem cell collection when she was pregnant with her first child, Phoebe, and the emergency birth would have made it a low priority compared with keeping both mother and baby alive.

However, when she was pregnant with Zoe, she contacted CryoCare stem cell bank (now called Smart Cells International) and decided to investigate.

They explained that stem cells from the umbilical cord are the body's master cells — capable of turning into red blood cells which carry oxygen around the body, white blood cells which fight infection, and platelets which are necessary for clotting.

Stem cells are already being used to treat blood disorders and immune diseases in children, but some believe that in the future they will also treat heart problems, liver disease and even breast and ovarian cancer.

'Doctors take stem cells from bone marrow to treat illnesses such as leukaemia, but taking it from the cord is an easier and less painful way to do it,' says Darcey.

TODAY, hospitals routinely extract stem cells if there is a family history of certain genetic diseases, or if there is a sibling with leukaemia. Darcey's family has a history of cancer.

'My grandmother died of it and my mother is regularly checked, so I was conscious of that as a risk. I also heard that in one case an older man was saved by stem cells. So even if my children didn't need them, they could help others.'

Fortunately, Darcey's doctor, Mark Johnson, whom she was seeing privately at the Chelsea and Westminster Hospital, was happy to undertake the procedure. But the £1,000 cost may prevent many others from going ahead.

Like Phoebe, Zoe arrived seven weeks early, by a planned Caesarean section, to avoid the risk of Darcey developing pre-eclampsia again. After the rush of an emergency Caesarean for Phoebe, Zoe's delivery was straightforward.

'There were no complications and I didn't even notice the doctor taking the blood from the umbilical cord,' says Darcey.

Lars Olrik, from Smart Cells International, collects stem cells from more than 200 hospitals across the UK — including the Royal Free and St Mary's in London, Royal Surrey Hospital and Bradford Royal Infirmary —

The two-minute treatment that could save my baby's life (20 years from now!)

for a mixture of private and NHS patients.

But some NHS trusts refuse to collect stem cells for private storage after discouraging guidelines from the Royal College of Midwives and the Royal College of Obstetricians and Gynaecologists.

Professor Nick Fisk is based at Queen Charlotte's Hospital, West London, which does not take stem cells for NHS patients.

He says: 'While stem cells collected from umbilical cords have been successfully used to treat some illnesses such as leukaemia, it is speculation to suggest they may be used in future to cure a wider range of illnesses.'

'There's insufficient scientific proof to justify it. We estimate that around only 1 in 20,000 babies will use the stem cells stored for them, which leaves a lot of mothers who have spent money for nothing.'

He is also concerned that it could prove a financial strain for the NHS. 'If you do it for one person on the NHS, you need to do it for everyone, and staff would need to be trained.'

'You have to take a lot of blood out of the cord and each company

that stores stem cells has different collection procedures.'

'We already can't provide one-to-one midwife care for mothers, and the two or three minutes it takes to collect stem cells is a lot when the baby may not be getting enough oxygen or if, next door, a woman needs attention.'

ALL Trusts, however, encourage umbilical stem-cell banking for families at risk of genetic blood disorders, and public cord-blood banking where people can donate stem cells for transplantation, in a similar way to bone marrow, so there is an increased chance of patients benefitting from the stem cells.

'I understand that stories of cloning and Dolly the sheep make people worry that they are playing with nature,' says Darcey, 'but it's the most natural thing. When you have children, it is your instinct to do anything to help your child survive. This is just one part of that.'

■ TO contact Smart Cells International, call: 020 7486 4686.



Insurance policy: Darcey Bussell, right, and with baby Zoe, above

WHAT IS STEM CELL COLLECTION?

WHAT IS A STEM CELL?

The basic 'mother cells' which have the potential to develop into any of the body's tissues. A baby's umbilical cord is a particularly rich source of stem cells, but they can also be found in bone marrow.

WHY SHOULD THEY BE COLLECTED?

Early research suggests that stem cells can be used to treat anything from blood disorders to heart failure by regenerating the damaged organ and letting the body heal itself. In theory this could mean new blood cells, heart tissue and even teeth.

HOW IT IS DONE?

1 The blood sample is taken from the umbilical cord immediately after the birth, once the cord is cut and the baby is out, but before the placenta is released.

2 The midwife cleans the cord with a swab

and pricks the cord with a needle attached to a blood bag, which fills with around 60ml of blood. Depending on the volume of blood, between 50,000 and 200 million stem cells can be stored.

3 The sample is put in a collection kit and taken to a laboratory, where the stem cells are isolated using centrifugal techniques.

4 The cells are then cooled to the temperature of liquid nitrogen, -196c.

5 Chemicals are added to protect them and they are kept in cool storage for up to 20 years.

6 The stem cells can be collected for medical use at any time.

Picture: MAX MUMBY

Wear flip-flops when visiting swimming pools. Around 8,000 infectious moulds lurk in each 10cm square area of pool changing rooms.