

**The Big Question:** Is it time the benefits system was subject to a complete overhaul?

---

# Milk teeth: Cure-all or fairy tale?

Should children's discarded milk teeth be preserved as a potential 'repair kits' for adult bodies? Kate Hilpern reports on a fad that divides expert opinion

*Tuesday, 25 August 2009*

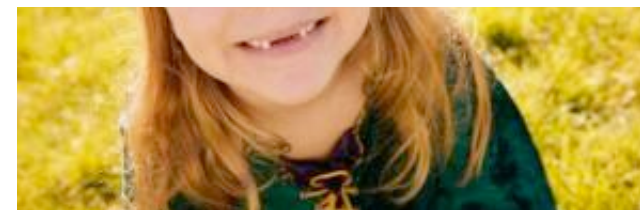
- [Share](#)
- [Print](#)
- [Email](#)
- [Text Size](#)
  - [Normal](#)
  - [Large](#)
  - [Extra Large](#)

The tooth fairy has nothing on Jim Curtis. As head of BioEden, Curtis runs the only company in the UK to extract and store stem cells from children's milk teeth. Instead of putting them under the pillow, parents like Ian Kidd send their kids' baby teeth off to BioEden's Cheshire labs to provide an



"insurance policy" against their family's future ill-health.

With a registration fee of £950 plus an annual £90 service charge, the supposed repair kit for the body doesn't come cheap, admits Kidd. "But stem cell research is becoming so advanced so quickly that it looks as though the stem cells extracted from our two boys' milk teeth could save their lives one day. We feel we can't afford to miss out on such potential," says Kidd, who – like all BioEden's customers – sent each tooth off within 24 hours of it falling out.



ALAMY

On paper, the benefits appear promising. The stem cells extracted from baby teeth – which appear from the age of about six months and fall out when children are between six and 13 years old – contain mesenchymal stem cells, which multiply rapidly and differentiate into many different cell types. These include chondrocytes which can generate cartilage, important in the treatment of arthritis and joint injuries; adipocytes, skeletal muscle cells, bone cells, and tendon. Indeed, bone-marrow-derived mesenchymal stem cells are currently being used in clinical trials to determine their potential in repairing cardiac tissue following a heart attack.

For children who look set to have problems in the future, or who have a family history of illness, tooth stem cells may be particularly valuable – which is why Liz Kensdale, who has a family history of heart problems, was quick to sign up her three children. "It was a no-brainer," she says. "Others might spend out on a big family holiday; I'd rather invest in their health."

Some scientists claim that stem cells may be used to cure conditions such as Alzheimer's, Parkinson's, diabetes and some cancers. There may also be cosmetic benefits as the cells isolated from teeth may be able to be used to grow new teeth. But with only 1,000 customers in the UK, take-up isn't what you might

expect. So is the storage of milk teeth stem cells one of healthcare's best kept secrets? Or have the few who have signed up been conned by expectations that for now remain in the realms of science-fiction?

It was Songtao Shi, a paediatric dentist at the US National Institutes of Health in Bethesda, Maryland, who first made the link between stem cells and milk teeth. Back in 2000, Shi discovered that extracted adult wisdom teeth contain stem cells in the pulp at the centre of the tooth. So when his six-year-old daughter and her friends started losing their baby teeth, he decided to see if they also contained stem cells. Each parent stored the tooth in a glass of milk in the fridge overnight and once Shi got to work on them, he found that around 12 to 20 cells from a typical incisor tooth turned out to be stem cells – and that they grow faster and have more potential to differentiate into other cell types than adult stem cells. It wasn't long before companies in the US and Europe spotted the commercial potential. "But business has been very slow in the UK," admits Curtis.

BioEden makes no guarantees about the use of stem cells. "All we say is the weight of evidence suggests the cells will be able to do some good in the future," says Curtis, who points out that a high proportion of his customers are dentists, doctors and other medical experts.

Probably the biggest factor preventing take-up, however, is that even people who do decide to invest in stem cell storage usually decide to have it collected from their child's cord blood – which remains in the placenta and umbilical cord after birth. This practice – which has already assisted in the treatment of blood diseases, among other disorders – has taken off in the UK, with companies claiming to have over 10,000 customers each.

But Professor John Hunt, head of the division of clinical engineering at the University of Liverpool, claims that stem cells derived from milk teeth that fall out provide a significantly greater potential for future

healthcare than cord blood (as, indeed, do adult teeth). "The source is totally without invasion and unlike cord blood, which must be collected in the minutes after birth, tooth stem cells can be collected almost every time a baby tooth falls out. This means you don't have to make a snap decision and that there is the potential to bank more cells overall," says Hunt.

Nevertheless, Dr Elizabeth Hill, head of transaction support at Cambridge Consultants - who advises on the acquisition of cell therapy companies - warns that harvesting stem cells from teeth remains a leap of faith. "The big commercial approach of companies setting up to bank the cells for a rainy day is marketed on fear," she says. "This idea of, 'Let's store away your dental pulp and in 20 or 30 years' time, we'll grow you another tooth or cure you from a disease' isn't exactly science fiction, but there are an awful lot of trials that have to go on before we are there. Yes, there is research out there, but this has only been done in the lab and cannot be scaled up to a useful level as yet."

Even Professor Claire Stewart, professor of cell and molecular biology at Manchester Metropolitan University - who sees milk teeth stem cell storage as an opportunity for those who haven't gone down the cord blood road - says: "Until the first child who has signed up to milk teeth stem cell storage has problems with their tendon or cartilage or similar, which transplanted cells should help repair, we can't claim to know the success rate. Until then, it will no doubt remain an emotive subject in which people seem to fall into two camps - those who think, 'This is for me, I don't care what anyone says'; and those who think, 'The technology remains to be proven, so this is just another way to get money out of me.'"

---

#### SPONSORED LINKS:

[Ads by Google](#)

**Apply & Spend £750 Today**

Approved in 1 minute, no hassle/fax£750 in Your Bank Account Today!

[www.PaydayBank.co.uk](http://www.PaydayBank.co.uk)

**The Art of Shaving: £0P&P**

Official Art of Shaving Store:Free P&P >£40, Samples & Cash Back!

[ArtofShaving.SalonSkincare.co.uk](http://ArtofShaving.SalonSkincare.co.uk)

## Post a Comment

Subject:

Message:



Post Comment

Offensive or abusive comments will be removed and your IP logged and may be used to prevent further submission. In submitting a comment to the site, you agree to be bound by the **Independent Minds Terms of Service**.

**©independent.co.uk** [Legal Terms & Policies](#) | [E-mail sign-up](#) | [RSS](#) | [Contact us](#) | [Syndication](#) | [Advertising Guide](#) | [Group Sites](#) | [London Careers](#) | [Subscriptions](#)