

# Lexington Minuteman.



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Staff photo by Matthew Modugno

Dr. Fawn Rosenberg extracts teeth from Derek Schneider, 10, while his mom, Carla, captures the moment on her camera phone.



Staff photo by Matthew Modugno

Dr. Fawn Rosenberg prepares for the extraction.

## Teeth today ... tissue tomorrow

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other medicine. [Baby Teeth are] a source that is not controversial, different from the embryonic stem cells. They're coming out anyways. It's turning biological waste into precious cells that can be generated into other tissue."

On Rosenberg's side, the process is simple. She extracts the teeth, and then drops them into an isotonic fluid that preserves them. After some paperwork, she sends the teeth to the lab.

At NDPL, they test the teeth for bacteria, crack the teeth open and extract the pulp inside. The cells are placed in a cryo-protectant fluid, and then stored at minus 193 Celsius, or minus 321 Fahrenheit. Baby teeth, wisdom teeth, or third molars all contain stem cells.

"Currently there are no clinical applications for these cells," said Dr. Todd Flower, the laboratory director at NDPL. "Nothing can be done right now, today. The premise is to store these teeth. They're going to be used in the future, not tomorrow."

Flower said the technology has to catch up before any tissue can be engineered, and the FDA has to approve any methods, which is not a historically fast process.

The FDA has not yet approved using stem cells in medical applications. Stem cells from teeth, or mesenchymal stem cells, are adult stem cells and can only be grown into bone,

teeth, muscle or nerves. Embryonic stem cells can be grown into virtually any type of tissue, but are considered controversial because they require the destruction of embryos.

Derek said he was nervous to get his teeth pulled, as all his previous baby teeth had fallen out on their own. But he said the procedure wasn't too bad.

"It didn't hurt as much as I expected it to," he said. "I thought maybe more was going to happen."

Derek, who will enter the fifth grade at Estabrook School next year, enjoys science. Last year at Estabrook, he participated in an after-school science program where he got to apply some of his lessons.

"It was a fun way to learn about [science], because we got to building things at the same time," he said.

Sometime in the future, scientists may be building something for him from the cells harvested on Saturday. His mother hopes that is not the case.

"We hope to never have to utilize the cells for anything," said Mond. "But it ends up being about \$10 a month, so it's not much more than having coffee every day. In the event that, as a family, you have something really dramatic to contend with, if for that amount of money you are able to mitigate the medical issues, that's good [peace of mind]."

## Smile for science

### Parent saves child's baby teeth for stem cells

By Ian B. Murphy

Staff Writer

Derek Schneider is a healthy 10-year-old kid.

But when he had some baby teeth extracted Saturday at Dr. Fawn Rosenberg's office, he and his parents were looking to the future with the help of some cutting-edge science.

Carla Mond, Schneider's mom, said she banked her daughter's umbilical cord for the same purpose, but didn't know about that option when Schneider was born. When she learned about preserving baby teeth, she signed her son up.

"For us, it kind of falls in the same category as doing

inoculations," Mond said. "It's an added insurance."

Stem cells can be extracted from the pulp inside baby teeth. If Derek needs new bones, teeth, muscles, or nerves, they can be grown for him from the very teeth he had pulled on Saturday. His teeth are stored at the National Dental Pulp Laboratory (NDPL) in Newton, which is a subsidiary of New England Cryogenics.

"In the end, your greatest hope is that it is something you never have to consider using," Mond said.

Schneider was Rosenberg's first extraction for the purpose of stem cell storage, but she isn't new



Derek tempts a smile during the procedure.

to the science. She has been following it for years, and met with representatives from NDPL in January at a conference.

"This is huge for dentistry," Rosenberg said. "Dentistry has always in the public taken the back seat to

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