

# California dentists develop restorative crowns for kids

February 11 2013, by Mark Glover

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Two dentists-turned-entrepreneurs say they're part of the most revolutionary development in children's dental care "since fluoride."

Jeffrey Fisher and John Hansen, of Sacramento, Calif., started EZ-Pedo Inc. in 2010, and today their relatively small manufacturing site in Loomis, Calif., produces thousands of ceramic dental crowns for children.

The crowns are made of zirconia, colored and polished to resemble normal, healthy teeth. That's a departure from the long-standing industry norm - metal crowns, typically made of stainless steel.

Last year, EZ-Pedo sold nearly 40,000 crowns to about 650 pediatric dentists throughout the United States, and to various international locales. It's ramping up an office in Germany to handle manufacturing and distribution throughout Europe.

The partners guess that they have about 10 percent of the nation's pediatric crown market (there are more than 6,500 pediatric dentists nationwide). In five years, Hansen and Fisher hope to claim 50 percent.

The new business has not yet produced riches for the partners. Fisher and Hansen said they only recently began paying themselves. Both still maintain private practices.

Fisher, 39, provides office-based [general anesthesia](#) for [pediatric](#)

[dentistry](#) throughout the Sacramento region. Hansen, 45, is a specialist in cosmetic dentistry, with an office in Roseville.

Their venture began with a nasty fall.

In 2004, Hansen's 3-year-old son, John Paul, fell in the bathtub and seriously injured four of his front teeth. Hansen sent his son to a [pediatric dentist](#) to have the boy's smile reconstructed and was stunned to learn that there were no aesthetically pleasing crowns like those typically custom-crafted for adults.

Hansen said the crowns placed on his son's teeth were bulky, didn't match in color and presented a smile that showed metal at the gumline.

When John Paul needed more work done, he confided to his father that he was fearful of more treatments. Hansen called Fisher, with whom he had previously worked, to see if he would provide the anesthesia for John Paul.

From there, Hansen and Fisher got to talking about the seemingly unfilled niche—better restorative options for children's teeth.

In 2006, they began an exhaustive process that included interviews with scores of pediatric dentists and numerous tests of potential ceramic materials. They went through 15 design revisions in three years.

Ultimately, they filed an application with the U.S. Food and Drug Administration for pre-market clearance of their crowns. The FDA cleared them for use in 2009.

"The FDA process is very long and complicated. There are very specific requirements for this," Fisher noted.

The process of making the crowns in Loomis is likewise exacting.

The zirconia crowns are first milled in an exotic-looking, custom-made machine. About 35 to 50 crowns placed in a disc can be shaped simultaneously.

From there, the crowns are smoothed, polished, put through a staining solution, hardened in a 4,000-degree chamber, microblasted and glazed. Much of the final shading is done by hand by mask-wearing employees in library-quiet rooms. Workers also do a final visual inspection.

Every crown gets a label, which can be scratched off by a dentist before placement. There are 96 shapes and up to six sizes for each specific tooth.

That reflects a wide range of teeth, from baby to preteen. Hansen said that besides giving children visually normal teeth, EZ-Pedo's crowns are designed to guarantee proper spacing in the ever-changing mouths of growing kids.

Roseville, Calif., dentist Joelle Speed, who has specialized in pediatric dentistry for 10 years, said ceramic crowns have opened up numerous possibilities.

"For a while, stainless steel was always the standard, but aesthetics-wise, self-esteem issues would come up," she said. "(Children) would not have many options if they had a large cavity."

With ceramic crowns, Speed said he believes pediatric dentistry is undergoing a major shift that will continue for years.

Brian Banks, completing his residency at Primary Children's Medical Center in Salt Lake City before moving on to a pediatric dentistry

practice in Phoenix, believes ceramic crowns are helping parents make better decisions.

"A lot of parents didn't like the silver option and would sometimes decide on extraction instead," Banks said. "Taking teeth out creates other problems, like (kids) having a hard time eating and (improper tooth) spacing.

"With more aesthetic options, it's easier."

EZ-Pedo's growth has prompted Fisher and Hansen to keep moving into larger and larger offices. They say they are committed to keeping operations local and have resisted offers to outsource manufacturing to reduce costs.

"After all the work we've done, we're starting to see more competitors suddenly coming on," Hansen said. " ... There are a lot of temptations to do things differently, but we like where we are. We like the area."

Demand for the pair's professional services and for their new business making crowns is not likely to ebb. Despite the proliferation of fluoride and dental sealants over the years, tooth decay among children has proved a stubborn foe.

As recently as 2007, a U.S. Centers for Disease Control and Prevention report warned that tooth decay in baby teeth was increasing among children ages 2 to 5 years.

Tooth decay related to extended use of baby bottles is still common. Research also shows widespread tooth decay in some cultures, with [dental care](#) access and affordability playing roles.

Tooth decay "remains a problem for some racial and ethnic groups,

many of whom have more treated and untreated tooth decay compared with other groups," said Bruce Dye, an epidemiologist and lead author of the 2007 CDC report. In a separate report released in May 2012, Dye said 20 percent of American children ages 5 to 11 had untreated cavities.

And a just-released report by the Pew Center on the States said most states are not doing enough to provide children with access to dental sealants to prevent [tooth decay](#), driving up health care costs.

Twenty states received "D" or "F" grades from Pew.

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