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Spitting image of dental health

By Allison M. Heinrichs

TRIBUNE-REVIEW

Monday, March 5, 2007

Lugging a suitcase filled with 600 DNA samples from people with oral deformities sparked an idea for Dr. Alexandre Vieira that simmered for seven years.

That idea has since grown into the world's first dental DNA registry -- and all people have to do to help is spit into a cup.

"Anything that you can imagine related to dentistry can be examined in this way," said Vieira, a dentist and assistant professor in Pitt's Center for Craniofacial and Dental Genetics.

The registry allows qualified researchers access to a person's dental records -- anonymously -- along with a sample of that person's DNA, collected from saliva. Potential research projects include everything from determining whether cavities have a genetic link, to testing whether a particular couple is prone to having a baby with an oral defect, such as a cleft palate.

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By having a pre-existing DNA registry, Vieira expects to save Pitt and other dental research centers almost \$125,000 per genetics study because researchers won't have to collect new samples.

The project began in September in one of the dental school's 20-chair Oakland clinics.

Patients who indicate they are willing to participate in the study sign a

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Video: DNA sampling

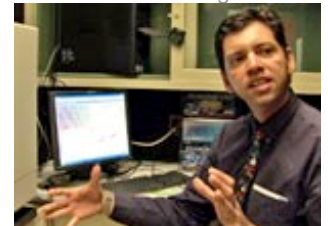
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Dr. Alexandre Vieira Joe Appel/Tribune-Review

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waiver and spit into a special cup.

When Vieira started the study, he expected about 30 percent of the patients to agree. So far, 85 percent of patients have done so, and Vieira has collected almost 250 samples. He's hoping to collect 1,000 each year, with no end date set.

"I looked at it as a very noninvasive procedure -- nobody even has to touch you," said Joann Steinhauser, an employee of the dental school, who recently donated a saliva sample. "If it could help determine the cause of oral cancer and cleft palates, why not?"

After the patient spits into a cup that looks like half of a palm-sized contact lens case, a screw-on cap releases a solution into the saliva to keep it from decaying. The sample and the patient's dental records are assigned a bar code to protect the person's privacy.

The sample is sent to a laboratory in the dental center, where a technician uses chemicals to break down cells in the saliva and access the DNA locked in each cell's nucleus.

The DNA is stored in locked freezers at the dental school, waiting for researchers hoping to discover treatments for oral diseases.

Because of privacy restrictions, there is no way to tell if a certain person's DNA helps stop gum disease or helps cure oral cancer.

"That's OK," said saliva-donor Darren Haggerty, 27, of Oakland. "It's for a good cause."

See the graphic of the saliva-donation process below:

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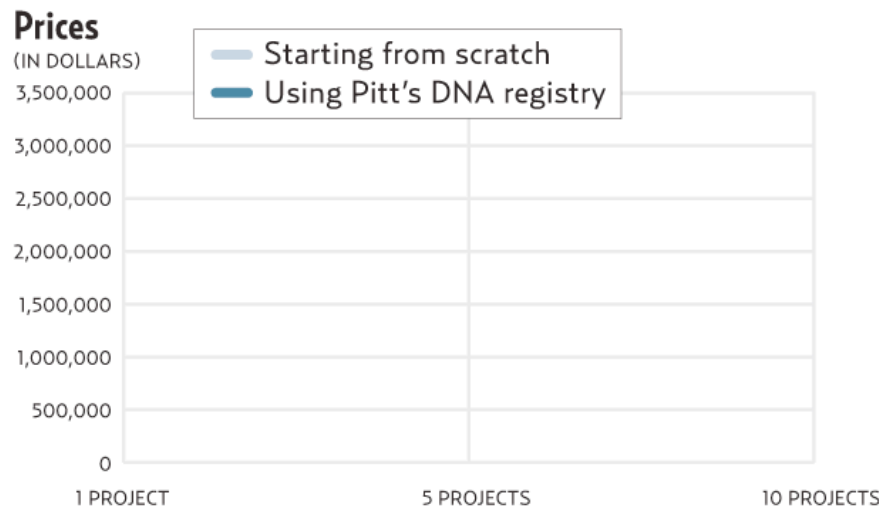
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Saving money with spit

The University of Pittsburgh School of Dental Medicine has started the world's first dental DNA registry. Researchers collect patients' saliva and enter the DNA into the registry so that the donor remains anonymous. The researchers look for genetic links to oral diseases. The ready pool of research subjects is expected to cut \$125,000 off the cost of each new genetics project. The projected savings are shown below:



SOURCE: DR. ALEXANDRE VIEIRA OF PITT'S SCHOOL OF DENTAL MEDICINE TRIBUNE-REVIEW

Allison M. Heinrichs can be reached at aheinrichs@tribweb.com or (412) 380-5607.

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