Stem cells found in nerves of teeth

The soft, living part of the tooth—tooth pulp—is known to contain a small reserve of stem cells. These stem cells, scientists agree, can help repair damaged teeth, forming both hard and soft tooth tissue. Scientists, however, have been less certain of these stem cells' origins.

For decades, the tooth-pulp stem cells, known as dental mesenchymal stem cells, were thought to come from neural crest cells. (In this view, neural crest cells migrate in the early head and form ectomesenchymal tissue.) But now, researchers at Karolinska Institutet assert that a significant population of mesenchymal stem cells during development, self-renewal, and repair of a tooth is derived from peripheral nerve-associated glia.

"We have identified a previously unknown type of stem cells that surprisingly enough belong to the nerves of the tooth; these are nerves that would normally be associated with the tooth's extreme sensitivity to pain," said Kaj Fried, Ph.D., at the Department of Neuroscience, one of the head researchers responsible for a study into the origins of mesenchymal stem cells. In this study, the researchers used what they considered an eminently suitable model: the continuously growing mouse incisor tooth.

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