

# Sucking the Ocean Through a Straw

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Credit: AI-generated image ([disclaimer](#))

(PhysOrg.com) -- Scientists are reporting an advance toward the next big treatment revolution in dentistry — the era in which root canal therapy brings diseased teeth back to life, rather than leaving a “non-vital” or dead tooth in the mouth. In a report in the monthly journal *ACS Nano*: “Nanostructured Assemblies for Dental Application,” they describe a first-of-its-kind, nano-sized dental film that shows early promise for achieving this long-sought goal.

Nadia Benkirane-Jessel and colleagues note that root canal procedures help prevent tooth loss in millions of people each year. During the procedure, a dentist removes the painful, inflamed pulp, the soft tissue inside the diseased or injured tooth that contains nerves and [blood vessels](#).

Regenerative endodontics, the development and delivery of tissues to replace diseased or damaged dental pulp, has the potential to provide a revolutionary alternative to pulp removal.

The scientists are reporting development of a multilayered, nano-sized film — only 1/50,000th the thickness of a human hair containing a substance that could help regenerate dental pulp. Previous studies show that the substance, called alpha melanocyte stimulating hormone, or alpha-MSH, has anti-inflammatory properties.

The scientists showed in laboratory tests alpha-MSH combined with a widely-used [polymer](#) produced a material that fights inflammation in dental pulp fibroblasts. Fibroblasts are the main type of cell found in [dental pulp](#).

Nano-films containing alpha-MSH also increased the number of these cells. This could help revitalize damaged teeth and reduce the need for a root canal procedure, the scientists suggest.

Provided by American Chemical Society

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