Docket #: S25-007

Mouth Cooling Offers Relief for Oral Mucositis

Stanford researchers have developed a mouth-cooling device that prevents or reduces the degree of oral mucositis (OM), a painful side effect of chemotherapy, radiotherapy, autoimmune conditions, and infections. This device offers a more targeted and tolerable alternative to current treatments, improving patient comfort and clinical outcomes.

OM affects over 20%-40% of cancer patients receiving chemotherapy and up to 90% are high-risk patients, such as those undergoing head and neck cancer treatments or stem cell transplants. It impairs eating, speaking, and swallowing which often leads to hospitalization. Current treatments are largely palliative with mixed effectiveness. Traditional oral cryotherapy, such as using ice chips, has poor patient compliance and uneven cooling performance. To address these issues, Stanford scientists have designed a mouth-cooling device that delivers consistent, localized cooling across the oral cavity and adjacent facial areas.

The device's structure allows cooling of hard-to-reach areas like under the tongue and along the gingiva, while reducing blood flow and cellular metabolism in oral tissues to prevent OM onset. By improving cooling distribution, comfort, and usability, this device provides a superior solution for managing OM.

Stage of Development
Prototype

Applications

- Oral cryotherapy
- Cancer therapy
- Dental devices

Advantages

- Consistent cooling
- Applicable to difficult to reach places
- Customizable
- Comfortable
- Reusable

Patents

- Published Application: WO2026111947

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