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Device to Expand Soft Tissue

IP Status: Provisional Patent Application Filed; **Application #:** 63/049,437

Applications

- Reconstructive and cosmetic plastic surgeries.
- Atherosclerosis.
- Pathologies related to stenotic vessels of the GI and urological tracts.

Technology Overview

Researchers at the Earl E. Bakken Medical Devices Center have designed a medical device that leverages mechanotransduction concepts to engineer new oral mucosa, thus reducing wound contracture and the accompanying morbidities associated with cleft palate repair. Cleft lip and palate is one of the two most common congenital anomalies in children. Despite advances in local flap graft and free flap graft surgical techniques, complications such as fistula formation, or a need for pharyngoplasty can occur after cleft closure. Soft tissue expanders have been widely used for the purposes of reconstructive surgery. New skin is grown adjacent to the surgical site through the use of an implantable expander device which stimulates skin growth by applying a sustained stretch. The new skin is useful from a surgical perspective because it expands the area that can be covered by local flap grafts. A wide range of repairs have been made with expanders e.g. birth defects, burns, and breast reconstruction. Tissue expanders have not been considered for cleft palate repair, however, until only recently. Described here is a device to be used as an adjunct to surgeries performed by otolaryngologists, oral surgeons, dentists and periodontists.

Phase of Development

TRL: 3-4
Prototype fabrication and testing.

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

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Researchers

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External Links

Earl E. Bakken Medical Devices Center

Technology ID

2020-325

Category

Engineering & Physical Sciences/Instrumentation, Sensors & Controls
Life Sciences/Medical Devices

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