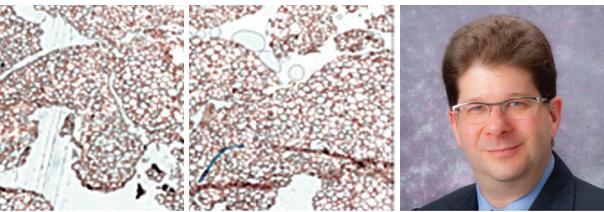


# A Device to Preserve Adipose Tissue Grafts for Soft Tissue Reconstruction



J. PETER RUBIN,  
MD, FACS

University of Pittsburgh

*“The ability to easily and inexpensively store tissue on-site will result in significant decrease in patient discomfort and risk, as well as significant decrease in surgeon time spent on the repeat procedure.”*

<https://plasticsurgery.pitt.edu/research/research-labs/adipose-stem-cell-center-asc>

## CLINICAL NEED

Soft tissue deformities and volume/ contour deformities from craniofacial trauma, congenital anomalies, and cancer treatment are difficult to correct. Current standard of care includes injectable fillers, implants, and soft tissue flap procedures, which have limitations and often involve operations with significant risk. As such, autologous fat transfer is being explored as a lower risk alternative. However, as optimal results with fat transfer often require at least two treatments, there is a need for an on-site preservation of harvested tissue for subsequent procedures to minimize donor site morbidity and encourage fast recovery.

## SOLUTION

A team of researchers at the University of Pittsburgh led by Dr. Peter Rubin has previously validated the use of autologous fat transfer as a minimally invasive therapy for the restoration of craniofacial form. In order to facilitate fat transfer with minimal donor site morbidity, the team has developed a novel device to cryopreserve adipose for storage at the treatment facility, which can directly be used for the subsequent fat transfer(s).

## COMPETITIVE ADVANTAGE

With the on-site cryopreservation and storage of the fat tissue, the device is envisioned to reduce patient and clinician burden for tissue harvest. The utilization of the device obviates the need for repeat tissue grafting procedures, and is anticipated to lead to reduction in treatment costs as the fat transfer injections may be performed outside of an operating room in a less acute setting.

## ITP SUPPORT

The work supported by the ITP program is focused on the generation of a prototype cryopreservation/storage device that can be used for clinical trials. Towards that end, project plans include prototype development and validation, as well as the development of a regulatory strategy and commercialization plan.

## CLINICAL TRANSLATION PATHWAY

### Publications:

Optimization and Standardization of the Immunodeficient Mouse Model for Assessing at Grafting Outcomes. *Plast Reconstr Surg* 2017.

### Intellectual Property:

PCT/US2018/049083  
Method and Kit for Preservation of Adipose Tissue Grafts

### Regulatory Pathway:

Anticipated:  
Device, 510(k)

### Commercialization Strategy:

In development with the MPWRM  
Commercialization/  
Market Needs Core

### Product Launch Strategy:

In development with the MPWRM  
Commercialization/  
Market Needs Core

Michigan-Pittsburgh-Wyss Regenerative Medicine Resource Center is supported in part by the National Institute of Dental & Craniofacial Research of the National Institutes of Health under Award Number U24DE026915. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

