ProtoDisma

#MedTech #PalatalDistractors #WoundHealing

THE PROBLEM ADDRESSED

Palatal distractors are an orthodontics apparatus used to help reshape the form of the palate in children (before puberty). Current systems require the daily tightening of a screw located deeply in the mouth. This procedure cannot be done autonomously and proves stressful and unpleasant both for the children and the person straining the distractor.

ProtoDisma modifies existing distractors design to simplify this procedure and greatly improve the users' experience.

The development team is specialized in mechanical systems actuated through magnetic forces. They have already applied this expertise in other implantable medical devices.

TECHNOLOGY

- Adaptation of the existing apparatus to replace in-mouth tension screw by a novel mechanism using magnetic coupling.
- System easily transferable to existing commercial distractors
- Use of millimetric neodymium alloy permanent magnets covered by biocompatible titanium

COMPETITIVE ADVANTAGES

- Increase simplicity of use (only require a limited mouth opening, guided binding of the tool)
- Reduce users' anxiety
- Project oriented by a key opinion leader and final users of palatal distractors
- The team has experienced in developping medical technology with similar tools which are currently under investigation.

APPLICATIONS

- Palatal Distractors

DEVELOPMENT STATUS

- TRL3: first prototype tested on 3D-printed jaw
- The team can provide its expertise to adapt magnetic actuation to other medical applications

INTELLECTUAL PROPERTY

- French Priority Patent Application (june 2022, number: F2206055)

INVENTORS & CONTACTS

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PUBLICATIONS

Debelmas, Alexandre, et al. "*Contribution of the periosteum to mandibular distraction.*" PloS one 13.6 (2018): e0199116.

LOOKING FOR

- Industrial partners to develop new technologies using similar concepts.