# Keles Keyless Expander® (KKE)

## A NEW APPROACH FOR RAPID PALATAL EXPANSION

## WHY KKE?

According to the literature, one out of four children suffer from upper jaw constriction. Rapid palatal expansion is a common procedure in orthodontic treatment to correct transverse deficiencies and increase the arch length avoiding extraction. Expanders typically contain a jackscrew in the midpalatal region and a separate key for its activation. Clinically, the hole-and-key design introduces many difficulties for proper activation and risk of swallowing the key. Keles Keyless Expander® (KKE) appliance eliminates these disadvantages compare to traditional expanders.
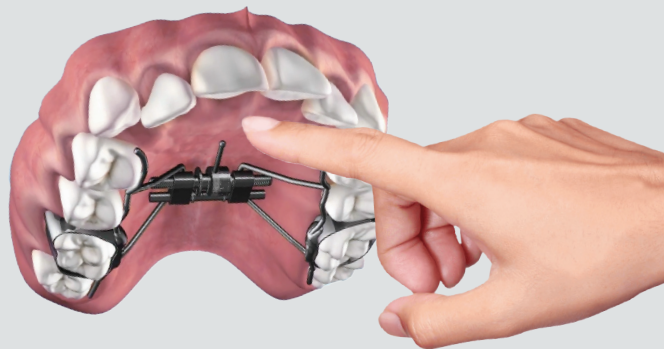
### PATIENT-FRIENDLY
The unique built-in arm eliminates a separate key, enabling patients to activate the expander.

### SAFE
With its keyless property, there are no risks of swallowing the key and injuring the palatal mucosa during activation.

### RAPID
Desired expansion can be achieved in a short period of time with minimal patient cooperation.

### SMALL
Its small size does not irritate the patient's tongue and is ideal for mixed dentition patients.

## TYPES OF KKE

BANDED 4 ARM DESIGN

3D METAL PRINTED DESIGN

MIXED DENTITION 2 ARM DESIGN

## CASE REPORT

**FRONTAL VIEW**

Initial

After the expansion with KKE

Final

**UPPER OCCLUSAL VIEW**

Initial

After the expansion with KKE

Final

## ABOUT THE INVENTORS

Prof. Ahmet Keles is a Pt. Faculty at Orthodontics Department at Harvard School of Dental Medicine, Boston, MA and continues to expand his private practice in Istanbul, Turkey. He also travels around the world giving courses and seminars in the field of orthodontics. He developed many appliances such as Keles Slider and Keles Face Mask. Eren Keles is the co-inventor of the KKE appliance, and he is in the class of 2027 at Harvard School of Dental Medicine.

### Patent
US Patent No: US 10,842,596 B2
Date of Patent: November 24, 2020

### Published articles
Rapid Palatal Expansion with the Keles Keyless Expander; Keles A, Lin C, Keles E, Darendeliler MA. Journal of Clinical Orthodontics 2018; 11:598-603

Keles Keyless Expander: A new approach for rapid palatal expansion. Keles A. World Journal Orthodontics 2008; 9:407–411

# AEGIS STAR
## DENTAL TECHNOLOGIES