

# 3DISC



## Restoration of extracted primary teeth: “Space Maintainers and Appliances”

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# About Dr Joy El Hayek

Dr. Joy El Hayek is a dedicated pediatric dentist based in Beirut, Lebanon, with an extensive background in dental sciences and biomaterials. She earned her Doctorate in Dental Surgery (DDS) from Saint Joseph University (USJ) and a PhD in Science and Health. Dr. El Hayek also holds a Master's degree in Biomaterial Sciences and a CES in Pediatric Dentistry from USJ.

She is currently pursuing a university diploma in AI in Healthcare. Dr. El Hayek serves as a senior lecturer and coordinator in various departments at USJ, including the Dental Laser Unit and Digital Dentistry. Additionally, she is the Lebanese Ambassador for Dentaverse, working on implementing the Metaverse in dentistry. Dr. El Hayek is also an active member of the Digital Dentistry Society and the Lebanese Society of Pediatric Dentistry.

## 1<sup>st</sup> Case Description

This case report outlines the implementation of a full digital workflow for the design and fabrication of a lingual arch. A 10-year-old patient required a space maintainer due to the premature loss of primary molars.

Image 1

The procedure began with intraoral scanning using the 3DISC OVO, capturing precise digital impressions of the patient's oral cavity.



Images 2 & 3

The scanned data was then used to design the lingual arch with computer-aided design (CAD) software. Once the design was finalized, the lingual arch was fabricated using 3D printing technology.

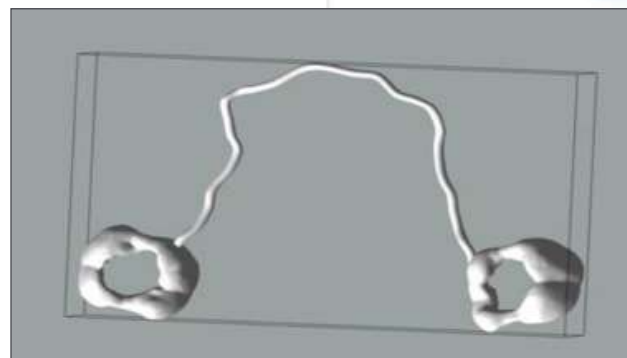
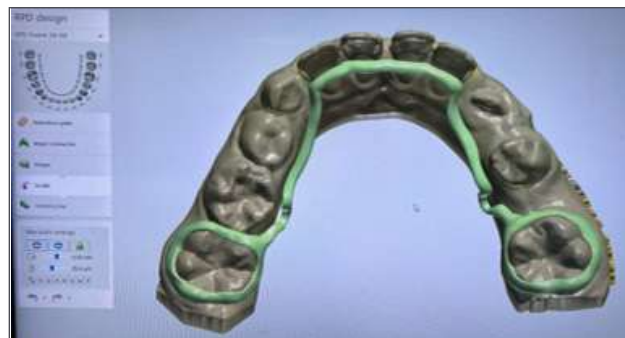


Image 4

Results on Model



Image 5

Final Result



### Take home message:

This digital workflow ensured high precision and excellent adaptation to the patient's dental anatomy, significantly reducing chair time and increasing patient comfort compared to traditional methods. The use of digital technology in this case highlights its potential to improve the accuracy and efficiency of orthodontic treatments. The successful outcome underscores the advantages of integrating advanced digital tools in routine dental practice, setting a new standard for patient care and appliance fabrication.

## 2<sup>nd</sup> Case Description

A 9-year-old patient required a space maintainer for teeth 85-83 due to early loss of the first primary molar (tooth 84). We utilized a full digital workflow to design and fabricate the appliance.

Image 1

The process began with intraoral scanning using the OVO from 3Disc, capturing detailed digital impressions of the patient's mouth.



Image 2

The digital impressions were used to design the space maintainer with CAD software, ensuring a precise fit.



Image 3

The digital impressions were used to design the space maintainer with CAD software, ensuring a precise fit.



### Take home message:

The digital workflow proved to be efficient and effective, highlighting its potential for routine use in pediatric dentistry. This case demonstrates the advantages of digital technology in creating customized, well-fitting dental appliances.

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