

# D.O.P. dentistry

## The New Era in Paediatric Dentistry

### Background

Aim of this work is to illustrate and review the concept of

**D.O.P. dentistry (Digital Ortho Paediatric Dentistry)** in daily practice.

**NEW KEY WORDS:**

DOP Dentistry  
CAD-CAT (Computer Aided Design and Technofactoring)  
Artificial Intelligence (AI)

### Review

The acronym **D.O.P. Dentistry (Digital Ortho Paediatric dentistry)** is a new definition introduced in 2022 by the Authors indicating the perfect integration between **paediatric dentistry and paediatric orthodontics**. To these must be added new digital technologies:

- **Digital fiber optic transillumination** for early diagnosis of caries
- **3D virtual patient** (integrating IQS, face scan and CBCT)
- **Full digital workflow** for orthodontics and restoration devices
- **Use of new bio-active resin materials and new technopolymers**

It defines a new standard in Paediatric Dentistry that integrates new technologies, paediatric dentistry and orthodontics to take care of young patients *efficiently, effectively and safely*.

Full digital CAD-CAT printed resin template for tads insertion

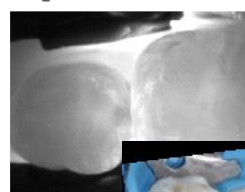


Digital Set Up and CAD-CAT production of automatic palatal expansion using ZeroExpander® made by printed PA12 and bonded on deciduous molars with new bioactive materials (Active Cement®)

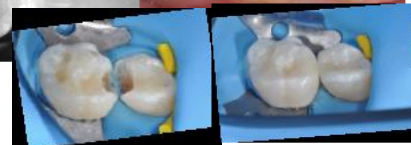


Artificial Intelligence virtual segmentation from CBCT by DIAGNOCAT for diagnosis and 3D Digital bone and root safe set up in complex cases

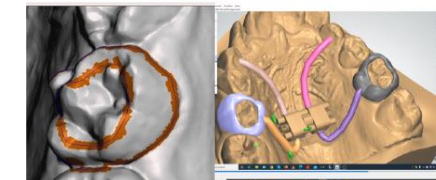
Green caries detection with Diagnacam



...and treatment



Simultaneous caries management with Ozone, liquid dam and bioactive cement, during palatal expander application



Digital Design of custom made laser sintering ortho bands and palatal expander

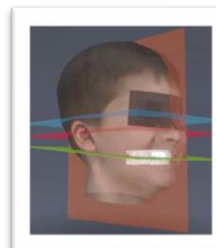
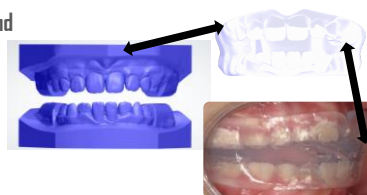


Ortho Inlay bands digital designed and laser sintered for caries management and simultaneous application of palatal expander with bioactive cement

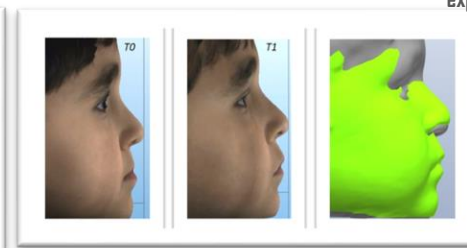


The same concept of digital ortho inlay with ZeroExpander®

Full digital set up and CAD-CAT production of a customized removable elastomeric device (Uniko®)



Face Scan for ceph 3D without xray



Digital Dynamic 3D Monitoring of the growth by repeated and superimposed face scans of the child



Full digital palatal space maintainer made by Peek and two steps bioactive molar sealing in high risk patient

Full digital Technopolymer Orthodontic Prosthesis from iDS, made by Peek in case of early loss of deciduous incisors, bonded with bioactive cement



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### Conclusions

Based on the **DOP dentistry** concept, new and fascinating scenarios open up, that will lead us to a more integrated management of little patients, of its needs and those of their family.