3D PRINTING FOR DENTISTRY

Providing the very best quality 3D printed teeth to aid dentists in endodontic training and research
Current training “blocks” or replica teeth are not “realistic” in their anatomy. Extracted teeth are not uniform for training purposes and present with consent issues and cross infection problems. During my masters degree in Endodontics, I realised the need for a more realistic training tooth and started investigating how this could be achieved. I quickly realised that through accurate dental imaging and 3D printing we could achieve this goal.

For my dissertation I produced a basic replica tooth from an upper molar using a micro-CT scan and 3D printing. Since then I have never looked back. I hope you enjoy preparing the Endo Reality teeth as much as I have enjoyed producing them!

Sophie Parker BDS MSc
Founder and Director

For a more realistic endodontic experience
MICRO-CT IMAGING
The most accurate type of 3D imaging technique used for research in dentistry is micro-CT. Micro-CT is a high resolution 3D technology with scanning capabilities less than 10 microns. Micro-CT has allowed increased visualisation and more accurate reproduction of 3D data. For example, the visualisation and evaluation of periodontal bone destruction and healing patterns of bone have been studied using micro-CT. Through conversion of micro-CT data to STL printing format, very accurate 3D digital models can be produced from micro-CT radiography.

At Endo Reality we have used micro CT imaging data to produce 3D Printed teeth for a breakthrough in realistic endodontic training. Endo Reality Training Teeth are anatomically correct and offer the ideal endodontic training tool.

WHAT TO EXPECT AT ENDO REALITY
3D Printing
At Endo Reality we use the very best 3D printing team headed by innovator Troy Baker at Design Reality North Wales. Design Reality is a leading industrial design consultancy that has built its reputation by developing high performance products that delight users and build brands. Operating globally across a range of different sectors they have worked with some of the world’s largest companies as well as helping start-up businesses realise their full potential.

Service
We offer an efficient printing service to be able to deliver your training teeth as quickly as possible. Your teeth are shipped within 10 working days of order by a courier to ensure safe delivery.

Bespoke
At Endo Reality we do offer a bespoke service for design and printing. If you wish for a variation in anatomy or tooth structure we can design this for you and print your requirements. Price on application.
Endo Reality offer 3 levels of difficulty of upper first molars.

**LEVEL 1**
Level 1 teeth with open wide canals are easy to navigate and provide the ideal starter tooth.

**LEVEL 2**
Level 2 teeth have a more complicated internal structure with a mildly sclerosed canal system with lateral canals.

**LEVEL 3**
Level 3 teeth are our most complicated teeth with an extremely sclerosed canal system, multiple lateral canals and testing isthmus.

All Endo Reality teeth are available in both open and closed access.
Anatomy of Endo Reality Teeth
RESTORATIVE FRACTURED U6
For successful endodontics, the coronal restoration is a vital part of the outcome. Teaching of “how to restore the endodontically treated tooth” has mostly been through lecture until now. At Endo Reality we have designed an U6 with a large modp fracture to replicate a heavily filled U6 with a palatal fracture. The U6 can be root canal treated and then fully restored, allowing a full root to crown restoration.

ADVANCED ENDODONTICS
Endo Reality advanced U4 and L6 replicate highly curved and abrupt curvature root formations. This allows a hands on approach for teaching more advanced endodontic techniques, and also testing new file systems!

For MTA practice or bioceermics, we also provide open apex U1’s, ideal for hands on training. The simulated pulp can be root canal treated or easily removed sing ultrasonics, prior to MTA placement.
BESPOKE ORDERS

At Endo Reality we do offer a bespoke service for design and 3D printing. We have worked with post graduate courses, masters programs for research, and endodontic manufacturers to develop and produce new replicas and blocks. If you wish for a variation in anatomy we can design this for you and print your requirements. Please contact us to find out more about the service.
**ENDO REALITY JAW**

The Endo Reality Jaw is a phantom head compatible holder for the teeth.

It allows removal of the teeth during endodontic practice and also acts as barrier for demonstrating MTA or equivalent repairs. Ideal for demonstrating rubber dam placement and also restoration post endodontics.

**QUADRANT JAW**

The ideal tooth holder for postgraduate courses. The Jaw quadrant allows demonstration and practice of rubber dam placement, demonstrations and practice of perforation repair, and restorative teaching techniques post endodontics.
Apex locator use is an essential part of endodontic training. At Endo Reality we have developed a very portable, long lasting, apex locator compatible tooth holder for our replica teeth. This allows the user to place the replica tooth into the holder while connecting to an apex locator for working length determination. Made from a unique material, the mini trainer secures itself to most surfaces without slipping.
“As a teacher in Endo, I’ve been running course for many years and am always looking for quality teeth on which my students and colleagues can practice. After trialling typodonts from various manufacturers over the years, I am delighted that EndoReality finally offer 3D printed teeth that genuinely replicate the natural tooth. To be able to order teeth of any configuration and complexity, accessed or unaccessed, opaque or clear, and now open apices is an exceptional resource.”

Dr Sanjeev Bhandari, BDS MSc MFGDP(UK)
Specialist in Endodontics

“At Contemporary Endodontics we try and keep dental education entertaining, practical and innovative. Endo Reality has managed to provide us with a great platform and blank canvas to explore new ways to challenge our candidates on our courses and apply everyday situations to the hands on sessions. The teeth are anatomically unique with accessory anatomy, better cutting ‘feel’ both coronally and in the root canal system. All the 3D printed teeth allow for heated techniques to be used with no plastic melting issues. Different levels of anatomy and difficulty allow us to deliver tailored teaching and the possibilities are endless with the help from Endo Reality.

The bespoke service that Endo Reality provided has been the game changer for our courses and sets us apart. Endo Reality has managed to provide us with unique custom blocks to reflect everyday difficult situations faced by the dental practitioner. These blocks are unique in that they offer unique specific situations and are better than any other competitors we have tried over the years in our teaching experience.

We can’t wait to see the next product that Endo Reality creates, as they are constantly evolving, allowing us to improve the teaching we deliver every time.”

Jon & Luca – Contemporary Endodontics
Specialist Endodontists