

# 3D printing: dentistry's future is already here

**Chris Lefkaditis** on why he believes 3D printers will become an essential part of the dental practice

Principal dental surgeon Chris Lefkaditis inspired delegates at the Dental Innovation Symposium, held in London in June, with a fascinating overview of 3D printing for implants and surgical guides.

*Implant Dentistry Today* was thrilled to sit down with him to learn about this rapidly evolving technology and its phenomenal impact on the future dentistry.

## How did you get involved in the Dental Innovation Symposium?

I've been to the previous digital symposia, which have all been fantastic, so I was delighted to be asked to speak on this subject at the 2019 event.

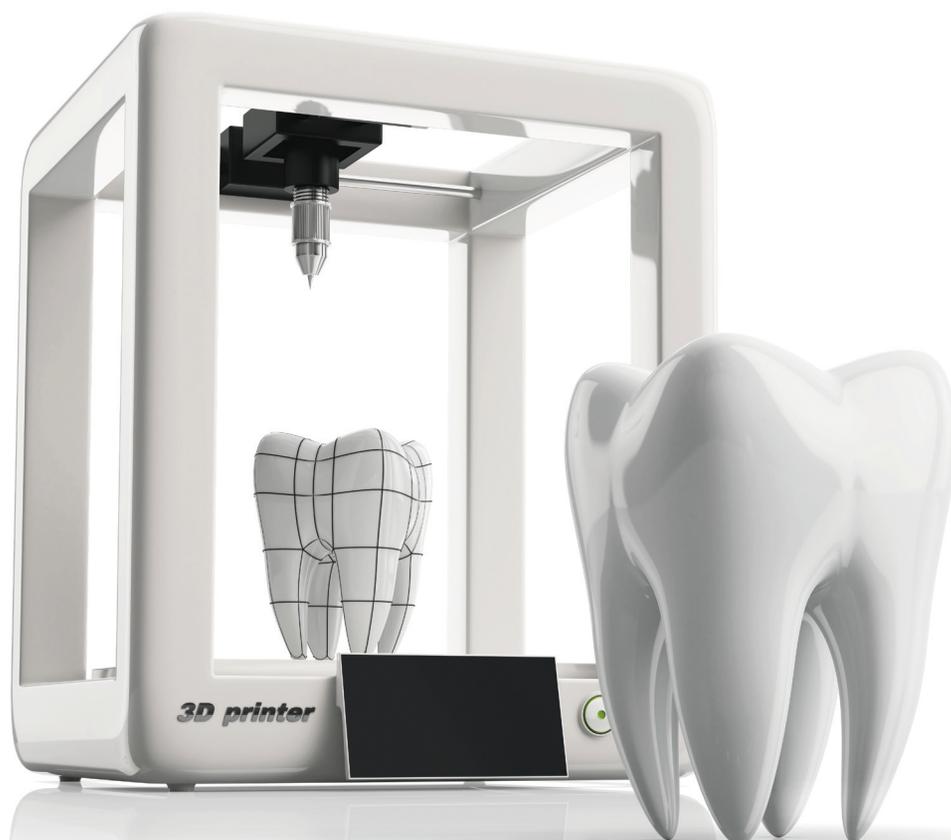
The HS Symposium focuses on education, and attendees can see experts using digital equipment, learn about how it's changed the way they work, and how they are using it to improve their practices and the patient experience.

Hopefully, those who attended my 3D printing presentation will have the confidence to start using the technology in their practices. If not, I hope they will be inspired by what 3D printing can do for them.

## How did you become involved with 3D printing?

This technology has been around since the early 1980s, but its application in dentistry has risen exponentially in the past few years.

I've been active in digital dentistry for nearly 20 years now, starting off with Cerec



3 and adopting guided surgery in 2005. As guided surgery has evolved, there has been a greater need to provide custom-designed surgical guides, and 3D printing gives you the ability to design and print custom devices.

A few years ago, a group of my like-minded colleagues and I formed a teaching academy, the Digital Dental Academy, which has expanded to an international body of digital dental education, the International Digital Dental Academy.

This support network, with more than 12,000 members, serves to help members to gain confidence in digital workflows, and encourages them to adopt these workflows and technologies/tools to make dentistry more predictable for themselves and their patients.

## Is price a barrier to dentists embracing this technology?

Actually, 3D printing is becoming more

affordable. You can start off from as little as £400 for a decent entry-level resin printer, ranging up to £20,000.

Every practice is unique and will have unique needs, but for surgical guides and implant dentistry it's very affordable.

Some 'plug and play' printers, such as Formlabs 3, are great as there's no setting up or worrying about parameters. It's all pre-programmed with pre-designated parameters, and all you have to do is process it. In my opinion, it's well worth the investment.

## How is 3D printing improving the patient experience?

The phenomenal benefit about 3D printing and digital dentistry is the experience for patients.

Patients absolutely love the fact that we, as a practice, are involved at the cutting edge of dentistry.



**Chris Lefkaditis BChD BSCDent**

**PgDiDent** is the principal of a private practice in Norwich. He qualified as a BSC dental scientist in 1989, and later joined dental school, graduating as a dental surgeon with honours in 1995 from the University of Pretoria in South Africa. He has extensive experience in implant dentistry, and his special interests include cosmetic and implant dentistry. Chris has been placing implants since 1999.

Previously, you had to verbally explain the workflow to the patient, but now with these new technologies we can show them virtual treatments and the expected progress of their treatments.

Patients love engaging in the treatment journey, and the consent process is more intact.

#### **What is more important for practitioners: speed or control?**

The technology provides the ability to have full control at every stage of treatment, from

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planning right through to placement of the implant. The printing can be done overnight or in half an hour, depending on the printer. But actually, in the case of surgical guides, speed is not the essence. The important aspect is to have control and high predictability. With this technology, we can control every stage of the workflow.

#### **What about speed versus accuracy?**

There is still a tension between speed and accuracy. In my opinion, speed is less relevant, unless you need to print temporary crowns or bridges in one patient visit.

As far as accuracy goes, it's possible to print to 25 microns in high-end printers versus an average of 100 to 140 microns for cheaper desktop printers; this isn't relevant in a surgical guide, but will be of greater relevance in prosthodontic treatments.

#### **Should dentists wait to invest in this technology?**

I'm certain this technology is not something one should wait for. It's a proven technology from the 1980s, which has become very much integrated in dentistry in the past few years.

Dentistry is one of the fastest growing 3D printing markets and now is absolutely the right time to get started, because you will be developing skills that are absolutely essential as printers become mainstream dentistry and the norm in chairside workflows.

#### **What does the future hold for 3D printing in dentistry?**

The technology is already integrated in digital dentistry. The current limitation is the materials, and the more these evolve, the more the applications will increase.

I believe 3D printers will become an essential part of every dental practice in the near future. **IDT**

Henry Schein offers a wide choice of 3D printing solutions and is able to help practitioners navigate the rapidly changing world of digital dentistry. For more information, visit [hsdequipment.co.uk/formlabs](https://www.hsdequipment.co.uk/formlabs).

Henry Schein Dental runs a variety of regional training courses, hands-on discovery days and post-purchase training courses. For further details, visit [www.hseducation.co.uk](https://www.hseducation.co.uk) or speak to your sales consultant to find out about courses in your area.