

# Letters to the editor

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## Sustainable dentistry

### Plastic waste with clear aligner therapy

Sir, clear aligner therapy (CAT) has been on the rise for both adult and paediatric patients for many reasons but mainly to improve aesthetics without the use of conventional metal braces.<sup>1,2</sup> In the current climate, more of us are looking to become sustainable and reduce our carbon footprint. A lot of people fail to realise the carbon footprint attached to CAT which uses a digital scan uploaded onto software; the treatment plan is made where a small increment of tooth movement is predicted on a computer and study models are printed for each movement. Using the vacuum-formed method, heated plastic which has softened is moulded around the 3D study model which is then trimmed, polished, packaged and shipped to the patient.<sup>2,3</sup> The study models, the aligner and, most of the time, the packaging are all made out of plastic. Patients can have as many as 40 sets (top and bottom) per course of treatment with some companies offering unlimited aligners until the treatment is completed.<sup>4</sup> During treatment, the tooth movement may not have been as predicted and so a new set of study models and aligners are made and then packaged and shipped to the patient. This amounts to a lot of plastic and a large carbon footprint. Conscious effort by dentists and manufacturers is required to reduce this by possibly using recycled plastic for study models and perhaps only printing a certain number of aligners and then reviewing if the treatment is going as planned. Furthermore, patients need to be encouraged to recycle the aligners and packaging. This can be done at the dental practice offering the CAT where a bin is set up for recycling aligners.

Further technological advancements could mean that the aligner is designed on the computer and printed directly as opposed to printing the study models first.

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## Artificial intelligence

### Can AI replace dentists?

Sir, we are writing to commend the interesting insights shared in a recently published letter.<sup>1</sup> While artificial intelligence (AI) has undoubtedly improved the dental field, the question remains as to whether it can replace dentists? AI tools, with a high degree of accuracy, can diagnose caries,<sup>2</sup> periodontal disease,<sup>3</sup> and oral cancer<sup>4</sup> through dental images and radiographs. This can be proven useful for dentists, in providing effective treatments by accelerating the diagnosis process.

Nevertheless, it is critical to identify the limits of AI in the dental field; it is a valuable tool, not a substitute for human skills. Dentists communicate, empathise, and provide individualised care for patients, not only diagnose and provide treatment. They build confidence with their patients and offer emotional care, whilst providing services that are

commonly conceived as stressful. While AI is dominant in its technical abilities, it lacks the basic human touch that allows it to bond with patients personally. Moreover, dentists form treatment plans taking several factors into consideration apart from the facts of oral health. These include the patient's socioeconomic status, environmental conditions, preferences and overall health. AI lacks the ethical judgement and concern needed for such decisions to be made, making it unfit to totally replace dentists. According to Bornstein,<sup>5</sup> while dentists cannot be replaced by AI, those who take advantage of it will replace those who do not.

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## Dental education

### Amalgam discrepancies

Sir, I read with interest the recent paper published by the *BDJ* entitled 'Dental amalgam teaching phase-out – a step too soon? Foundation trainees' experience of amalgam use in dental school compared to practice: a mixed-methods survey' (*Br Dent J* 2023; **235**: 329–334).

As an intern dentist who recently graduated from a Jordanian dental school,