

Sustainability Slide Decks: Usage Guide





Contents

Introduction	1
Background	2
What are the slides based on?	
What are the key topics?	
Why is it essential to integrate sustainability into the dental curriculum?	
Using the Slide decks: A step-by-step guide	5
Step 1: Accessing the slides and adding them to your presentation	
Step 2: Presenting the slides	
Step 3: Sharing the slides and resources	
Case scenarios for effective application of the slide decks	9
Sustainability statements and curriculum subject mapping	11
Resources - Learn more about Sustainability	17
References	19





Introduction



As part of the **Sustainability in Dentistry Project**, FDI World Dental Federation in collaboration with the University of Sheffield have developed **user-friendly slide decks** to help embed key concepts of sustainable practice in various courses.

To gain a deeper understanding of the project and intended purpose, please read the open-access article by Dixon et al.

Click here to access the article



The Sustainability in Dentistry Project

The FDI World Dental Federation's Sustainability in Dentistry project equips oral health professionals with resources and tools to minimize the environmental impact of dental practices. Recognizing that the healthcare sector contributes approximately 5% of global greenhouse gas emissions, with oral healthcare being a significant part, this initiative focuses on integrating sustainable practices into dental care through preventive approaches, resource-efficient practices, and collaboration across the global dental community.

The Sustainability Slide Decks

These customized slides are designed for seamless integration into undergraduate and postgraduate curricula at dental training institutions. Lecturers, curriculum developers, or practicing professionals interested in sustainability can use the slides to introduce the topic of sustainability to dental students.



Ready for use

Slide decks can be copied directly and used as final, sharable versions



Easily adaptable

Slides can be edited, built upon, and re-ordered with ease

This Guide delivers comprehensive information on these slide decks, providing context on their purpose and importance as well as practical guidance on their effective use.





Background

What are the slides based on?

The slides are based on a study conducted at the University of Sheffield in 2024.

"This study identifies for the first time a comprehensive strategy for the inclusion and delivery of environmental sustainability in the curriculum."

Dixon et al., 2024

A new method was used to map curriculum content and produce a comprehensive and robust list of evidence-based, subject-specific educational statements in the field of environmental sustainability in dentistry and oral healthcare.

In 2024, Dixon et al. released the paper 'Curriculum content for Environmental Sustainability in Dentistry'.

What are the key topics?

The available slide decks include both clinical and non-clinical oral healthcare topics that have environmental implications. You can access the full gallery of slide decks from the FDI webpage or directly from the links below.

Clinical	Non-clinical	
Cariology	Basic Sciences	
Conservative Dentistry	Dental Biomaterials	
Dental Public Health and Community Dentistry	Dental Practice Management	
Endodontology	Dental Technology	
Oral and Maxillofacial Radiology	Ethics, Professionalism, Information Literacy,	
Oral and Maxillofacial Surgery	Social Accountability and Behavioural Sciences.	
Oral Implantology		
Oral Medicine and Pathology		
Orthodontics	Click here to	
Paediatric Dentistry	access the full	
Periodontology	slide gallery	
Preventive Dentistry		
Prosthetic Dentistry		
Restorative Dentistry		
Special Care Dentistry		

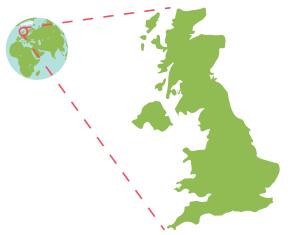




Why is it essential to integrate sustainability into the dental curriculum?

Oral healthcare has a significant impact on the environment. For example, take a look at the following graphic adapted from our course on the 'Practical Applications of Sustainability in Dentistry'².

The UK: A representative example of the environmental impact of oral healthcare



2.4 billion items of single-use plastic waste (27 tonnes) is generated from routine dental procedures annually

Dental practices generate 17 tonnes of CO₂e per year

Patient and staff travel accounts for **60% of greenhouse gas emissions** (675,706 tonnes of CO₂e per year) from NHS dental services in England

International Significance

The data presented serves as a representative example based on currently available evidence. While specific numerical values may vary across countries and regions, the types and sources of environmental impacts identified are broadly applicable and translatable to diverse healthcare systems healthcare systems.

The drive to mitigate this impact is increasing across stakeholders in oral healthcare, including oral health professionals, lecturers, students, and policymakers. Some of the driving forces in sustainable oral healthcare education in recent years are described below.

International organizations

FDI World Dental Federation is actively promoting environmental sustainability through education in all settings with a wide range of impactful resources and publications. These include two Massive Open Online Courses (MOOCs) on Sustainability in Dentistry^{2,3}.









The Association for Dental Education in Europe (ADEE) 'Sustainability in Dentistry' Special Interest Group published two consensus reports^{4,5}, which recommend:

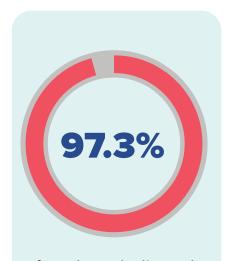
- 1 Embedding environmental sustainability within the oral healthcare curriculum.
- Implementing specific recommended learning outcomes and methods of learning, teaching, and assessment of environmental sustainability.

National level implementation and regulations

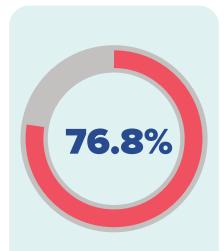
Many institutions worldwide now require and mandate the inclusion of environmental sustainability in the dental curriculum. For example, the UK now mandates that environmental sustainability is taught and assessed in UK dental schools from September 2025 and that all graduates must demonstrate that they meet the learning outcomes from 2030^{1,6}. Additionally, learning outcomes for environmental sustainability have been added to the Graduating European Dentist curriculum framework^{5,7}.

Interest from lecturers and students

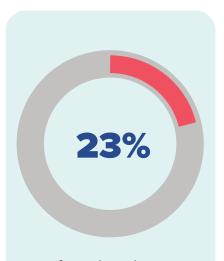
Students currently have very little exposure to environmental sustainability in dentistry at an undergraduate level⁸. The support of lecturers and students for the introduction of sustainability into undergraduate education has been demonstrated in multiple surveys¹.



of students believe the dental profession should be more actively engaged in environmental sustainability⁸



of students expressed concern about the impact of oral health care provision on the environment⁸



of student have independently researched environemental sustainability in dentistry⁸





Using the slide decks: A step-by-step guide

Step 1: Accessing the slides and adding them to your presentation

Access the slide decks either from this document or from the FDI slide gallery at the following link:

https://fdiworlddental.org/education-resources-sustainable-dentistry

2 Download the slides by clicking the button shown below: 🔀







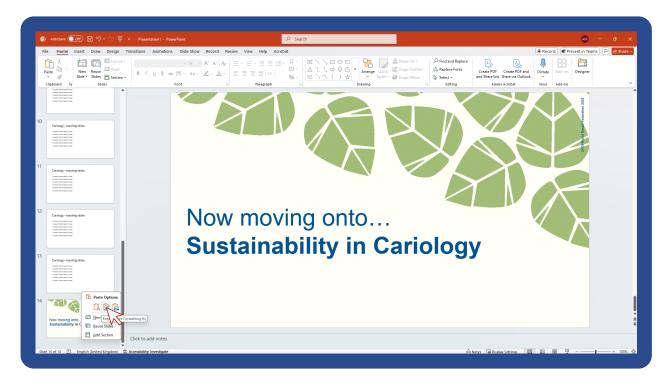
3

Select and copy all slides from the selected sustainability slide deck:

- Select the first slide in the navigation bar on the left hand side
- Click Ctrl-A
- Click 'copy'



- Paste these slides into your own presentation:
 - Access your own slide deck for the lecture
 - Select the final slide
 - Click 'paste'







5

Adapt the slides as your lecture requires. The text can be easily edited as appropriate. Whilst we recommend covering all the topics in the slide decks, you have the flexibility to edit or remove any sections to ensure they align with your lecture content and preferences. This way, you can create a presentation that resonates with your audience.



Step 2: Presenting the slides

We recommend that when presenting the slides, you...



Encourage discussion

For example, when you reach a new topic, consider asking the students "What do you think we can do to mitigate the impact of oral healthcare related to travel?"



Add a personal touch

If you have implemented some of the sustainability measures in your own experience as an oral health professional, consider mentioning this during your presentation. Hearing about the benefits and potential challenges of different measures can be really helpful for students to understand the practicalities of implementation.





Step 3: Sharing the slides and resources

We recommend that, whenever appropriate, you share the sustainability slides and resources with students.

For example, this may include:



Sharing your lecture slide deck after the lecture, including the sustainability slides.

Sharing the link to the FDI sustainable resources webpage

Sharing the links to the FDI MOOCs on Sustainability in Dentistry

FDI sustainable resources webpage:

https://fdiworlddental.org/education-resources-sustainable-dentistry

MOOC 1 - Sustainability in Dentistry

https://elearning.easygenerator.com/1c5f6712-1bf9-4702-9924-b323211d1057/

MOOC 2 - Practical Applications of Sustainability in Dentistry

https://elearning.easygenerator.com/f05bd6a3-ae67-4172-8825-65ac003f0aae/

This can help reinforce learning and encourage students to recognize the importance of considering sustainable measures and engaging with available resources.





Case scenarios for effective application of the slide decks

How might this translate into practice? We've put together several common scenarios below that can provide valuable insight.

Scenario 1: Last minute changes



You have a lecture tomorrow based on oral surgery. You want to highlight relevant sustainability measures but don't have time to develop comprehensive slides and need guidance on key topics.

Remember, our slides are premade and ready to go!

Simply download the slide deck on Oral and Maxillofacial Surgery from the FDI website and follow Step 1: Accessing the slides and adding them to your presentation to insert the relevant topics and slides as determined by our expert team.

Scenario 2: Adapting the content



You are keen to discuss sustainable measures in your next lecture on orthodontics. Having looked at the FDI slides, there are a few extra points you would like to add, some that you would like to change the wording of, and a couple of topics you don't plan to discuss.

Remember, our slides are easy to adapt!

As above, use our step-by-step guide to access and copy over the slides covering sustainable measures relating to orthodontics. Then feel free to edit as you see fit, whether that relates to the wording or the topics covered.





Adapting slides to specific scenarios

Further modification by discipline experts is expected as educators become more comfortable in embedding environmental sustainability in their teaching. An example of some statements being tailored to individual disciplines can be found below¹:

Original Statement	Subject	Modified Statement
It is imperative to promote and maintain good oral health through the prevention of caries, periodontal disease, pulpal disease and oral cancers. An effective preventive regime carries an environmental burden, but this is much smaller than a disease-driven interventive treatment approach. We can mitigate the environmental impact of oral healthcare through effective preventive strategies.	Oral Medicine and Pathology	It is imperative to promote and maintain good oral health through the prevention of oral cancers. An effective preventive regime carries an environmental burden, but this is much smaller than a disease-driven interventive treatment approach such as tumour resection. We can mitigate the environmental impact of oral healthcare through effective preventive strategies and early identification and referral.
Selecting evidence-based fit-for-purpose materials, instruments, equipment and sundries will mitigate the environmental impacts of the care you provide.	Dental Biomaterials	Selecting evidence-based fit-for-purpose dental materials will mitigate the environmental impacts of the care you provide.
The single most effective strategy to improve environmental sustainability in oral healthcare is to focus on disease prevention. This will result in less travel, resource use and waste generation.	Paediatric Dentistry	The single most effective strategy to improve environmental sustainability in oral healthcare is to focus on disease prevention. This will reduce a lifetime of oral disease burden and will result in less travel, resource use and waste generation.
Aligned and integrated healthcare services with patient co-management of care mitigates environmental impacts.	Dental Public Health and Community Dentistry	Aligned and integrated oral healthcare services, including its commissioning, contracting, and monitoring, should consider their environmental impact.





Sustainability statements and curriculum subject mapping

Table: Content statements and curriculum subject mapping results

The slides were based on the following table, adapted from 'Curriculum content for Environmental Sustainability in Dentistry' (2024)¹.

Please note this is the original subject mapping from the paper. Several subjects have been adjusted for the slide decks provided.

Green = Clinical subjects

Blue = Statements linked to a small number of subjects

Code	Content statements	Subject Applicability	
	Raise awareness		
A1	The delivery of oral healthcare is currently environmentally unsustainable. We need to take responsibility as a profession to mitigate these impacts.	Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences	
A2	The environmental impacts of oral healthcare cannot be eliminated but they can be mitigated.	Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences	
АЗ	The provision of professionally delivered oral healthcare results in significant environmental impacts from: (i) Staff commute and patient travel; (ii) the product supply chain and management of waste from the dental practice.	All clinical subjects	
Д4	Personal oral hygiene regimes have inevitable 'baseline' environmental impacts. These impacts arise from the product supply chain and disposal of oral hygiene products and devices.	ALL clinical subjects Less relevant to: Oral and Maxillofacial Radiology	
A5	It is imperative to promote and maintain good oral health through the prevention of oral diseases. An effective preventive regime carries an environmental burden that is much smaller than a disease-driven interventive treatment approach.	ALL clinical subjects Less relevant to: Oral and Maxillofacial Radiology	





А6	There is a need to influence and educate the profession and the public on strategies to mitigate environmental impacts of oral healthcare.	ALL clinical subjects and Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences Less relevant to: Oral and Maxillofacial Surgery, Oral Medicine and Pathology, Oral and Maxillofacial Radiology
A7	The single most effective strategy to improve environmental sustainability in oral healthcare is through disease prevention. This will result in less travel, less use of resources and less waste generation.	ALL clinical subjects Less relevant to: Oral and Maxillofacial Surgery, Oral Medicine and Pathology, Oral and Maxillofacial Radiology
	Behaviour Change	
B1	Environmental sustainability requires a culture change across the profession and supply chain.	Dental Public Health & Community Dentistry, Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management
B2	Effective patient education will benefit their oral health and mitigate environmental impacts.	ALL clinical subjects and Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences Less relevant to: Oral and Maxillofacial Radiology
В3	The formulation of action plans and policies will result in more environmentally sustainable practice.	Dental Practice Management
B4	Avoid waste: high-quality and efficient patient care will mitigate environmental impacts.	ALL clinical subjects and Dental Technology, Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management
4 Rs - Reduce, Reuse, Recycle, Rethink		
C1	Delivering a prevention-focused, patient-centred high quality oral health care service will reduce treatment need and the resultant environmental impact.	ALL clinical subjects Less relevant to: Oral and Maxillofacial Radiology





C2	Consider using reusable options where appropriate.	ALL clinical subjects and Basic Sciences, Dental Technology, Dental Practice Management	
C3	A shift from a wasteful linear economy to a more sustainable circular economy in oral healthcare is possible by proactively seeking and implementing recycling opportunities.	Basic Sciences, Dental Practice Management	
C4	Rethink - how can you optimize existing systems and processes to be more environmentally sustainable?	Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management	
	Good Quality Oral Healthca	are	
D1	Good oral healthcare is good for the patient, good for the profession and good for the environment.	ALL clinical subjects and Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management	
D2	A reduction in the need for professional-led interventions is achieved through disease prevention. This is the single most environmentally sustainable measure.	ALL clinical subjects Less relevant to: Oral and Maxillofacial Radiology	
D3	High quality operative care reduces repair, replacement and waste.	ALL clinical subjects and Dental Technology Less relevant to: Oral and Maxillofacial Radiology	
D4	Integrated healthcare services with patients as co-managers of their care mitigates environmental impacts.	ALL clinical subjects and Dental Technology	
D5	There is a need to take ownership of the care that you provide through lifelong learning to deliver high quality clinical outcomes. Evidence-based procedures provide environmentally sustainable care.	ALL clinical subjects and Dental Technology, Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management	
	Knowledge Exchange - Research		
E1	Developing a research curiosity will increase your levels of knowledge and awareness and may help to mitigate the environmental impacts of oral healthcare.	Basic Sciences, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences	





E 2	Evidence-based dentistry must consider the triple bottom line of clinical effectiveness, cost effectiveness and environmental sustainability.	ALL clinical subjects and Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences
E3	It is important to guard against misinformation and disinformation that may influence the objectivity of your decision-making.	Basic Sciences, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences
	Policy and Regulations	
F1	Active engagement with environmental policies and regulations in oral healthcare will mitigate your environmental impact.	ALL clinical subjects and Dental Biomaterials, Dental Technology, Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management
F2	Active engagement and collaboration with policymakers will lead to the development of more environmentally sustainable oral healthcare policies.	Dental Public Health and Community Dentistry, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management
	Environmental Impact - Trav	rel
G1	Adopting more sustainable travel options will	Baseline Environmental Sustainability
	mitigate your environmental impact.	lecture
G2	mitigate your environmental impact. Planning patient care to reduce the number of appointments will mitigate the environmental impact of the care you provide.	· ·
G2 G3	Planning patient care to reduce the number of appointments will mitigate the environmental	lecture
	Planning patient care to reduce the number of appointments will mitigate the environmental impact of the care you provide. Facilitating care delivery in multi-professional health centres will mitigate the environmental	Dental Practice Management ALL clinical subjects and Dental
G3	Planning patient care to reduce the number of appointments will mitigate the environmental impact of the care you provide. Facilitating care delivery in multi-professional health centres will mitigate the environmental impact of the care you provide. Optimizing dental practice administration will mitigate the environmental impact of the care	Dental Practice Management ALL clinical subjects and Dental Practice Management Dental Practice Management





H2	Engaging and challenging stakeholders across the supply chain will support environmentally sustainable practices.	Basic Sciences, Dental Public Health and Community Dentistry,Professionalism, Information Literacy, Social Accountability and Behavioural Sciences, Dental Practice Management	
Н3	Selecting fit for purpose dental materials, clinical items (PPE and products) and equipment will mitigate the environmental impacts of the care you provide.	ALL clinical subjects and Dental Biomaterials, Dental Technology, Dental Practice Management	
	Environmental Impact - Energy and Wat	er Consumption	
11	Reducing energy and water consumption at all levels of oral healthcare is key to mitigating the environmental impacts of oral healthcare.	ALL clinical subjects and Basic Sciences, Dental Biomaterials, Dental Technology, Dental Practice Management	
12	The use of energy from renewable sources will mitigate your environmental impacts.	Dental Practice Management	
	Environmental Impact - Waste Mar	nagement	
J1	Developing and implementing a local environmentally sustainable waste management plan will mitigate your environmental impacts.	Basic Sciences, Dental Practice Management	
J2	Engaging and challenging all stakeholders will result in more environmentally sustainable waste disposal procedures.	Basic Sciences, Dental Public Health and Community Dentistry, Dental Practice Management	
J3	Reducing medicinal waste through evidence-based prescribing will mitigate the environmental impacts of the care you provide.	ALL clinical subjects and Basic Sciences (specifically Microbiology and Pharmacology)	
J4	Reducing and recycling plastic waste will mitigate the environmental impacts of the care you provide.	ALL clinical subjects and Basic Sciences, Dental Biomaterials, Dental Technology, Dental Practice Management	
	Dental materials		
K1	Managing amalgam waste through safe practices will mitigate the environmental impacts of the care you provide.	Cariology, Conservative Dentistry, Prosthetic Dentistry, Special Care Dentistry, Dental Public Health and Community Dentistry, Dental Biomaterials, Dental Practice Management	
K2	Reducing the use of nitrous oxide will mitigate the environmental impacts of the care you provide.	ALL clinical subjects Less relevant to: Orthodontics, Oral and Maxillofacial Radiology	





K3	Reducing gypsum use for dental casts will mitigate the environmental impacts of the care you provide.	ALL clinical subjects and Dental Technology Less relevant to: Endodontology, Preventive Dentistry, Oral Medicine and Pathology, Oral and Maxillofacial Radiology
К4	Recovering and recycling dental materials, clinical items (PPE and products) and equipment will mitigate the environmental impacts of the care you provide.	ALL clinical subjects and Dental Technology, Dental Practice Management
K5	Using digital radiography will mitigate the environmental impacts of the care you provide.	Oral and Maxillofacial Radiology, Oral Medicine and Pathology, Dental Practice Management
К6	Using environmentally sustainable disinfectant procedures will mitigate the environmental impacts of the care you provide.	Dental Practice Management





Resources Learn more about Sustainability

Curriculum content for Environmental Sustainability in Dentistry

https://www.sciencedirect.com/science/article/pii/S030057122400191X?via%3Dihub

Review the original paper the slide decks were based on, which identifies a comprehensive strategy for the inclusion and delivery of environmental sustainability in the curriculum.

Key FDI resources

MOOC 1: https://elearning.easygenerator.com/1c5f6712-1bf9-4702-9924-b323211d1057/

Discover the impact of oral healthcare on the environment and the basic concepts of sustainable practice.

MOOC 2: https://elearning.easygenerator.com/f05bd6a3-ae67-4172-8825-65ac003f0aae/

Understand how to implement sustainable practices using the FDI Sustainability Toolkit and other resources and guidance.

Pledge for Sustainable Dentistry: https://www.fdiworlddental.org/pledge-sustainable-dentistry

Sign this online pledge designed for all members of the dental profession and supporting industry willing to support environmental sustainability within oral healthcare.

Sustainability in Dentistry toolkit: https://sustainability-platform.fdiworlddental.org/

The Sustainability in Dentistry interactive toolkit aims to help dentists and their teams drive their activities towards more sustainable practices.

Sustainability Award: https://sustainability-platform.fdiworlddental.org/sustainability-award

The FDI Sustainability Award promotes sustainability in dental practice by providing the opportunity for individuals or dental practices to receive global recognition.





Supporting commentary from international dental journals

International Dental Journal: Environmental Sustainability Through Good-Quality Oral Healthcare: https://pmc.ncbi.nlm.nih.gov/articles/PMC9275203/

Journal of Dentistry: The environmental consequences of oral healthcare provision by the dental team

https://www.sciencedirect.com/science/article/pii/S0300571224000125?via%3Dihub

Association for Dental Education in Europe (ADEE) outputs

Embedding environmental sustainability within the modern dental curriculum – Exploring current practice and developing a shared understanding:

https://pubmed.ncbi.nlm.nih.gov/33230919/

Embedding environmental sustainability within oral health professional curricula – Recommendations for teaching and assessment of learning outcomes: https://onlinelibrary.wiley.com/doi/10.1111/eje.12852

Environmental Sustainability in Oral Health Professional Education: Approaches, Challenges, and Drivers – ADEE Special-Interest Group Report: https://onlinelibrary.wiley.com/doi/10.1111/eje.13033

Current practice, barriers and drivers to embedding environmental sustainability in undergraduate dental schools in the UK and Ireland:

https://www.nature.com/articles/s41415-024-8011-6

For more resources, visit the FDI Sustainability in Dentistry webpage: https://www.fdiworlddental.org/sustainability-dentistry









- 1. Dixon J, Field J, Gibson E, Martin N. Curriculum content for Environmental Sustainability in Dentistry. *J Dent.* 2024;147:105021. doi: https://doi.org/10.1016/j.jdent.2024.105021.
- 2. Martin N, Hackley D, Mulligan S, Jamal H, Ilhan D, Armstrong M. MOOC: Practical Applications of Sustainability in Dentistry. FDI World Dental Federation. 2025. Available from: https://elearning.easygenerator.com/f05bd6a3-ae67-4172-8825-65ac003f0aae/.
- 3. Martin N, Hackley D, Mulligan S, Jamal H, Ilhan D, Armstrong M. MOOC: Sustainability in Dentistry. FDI World Dental Federation. 2023. Available from:

https://elearning.easygenerator.com/1c5f6712-1bf9-4702-9924-b323211d1057/.

- 4. Duane B, Dixon J, Ambibola G, et al. Embedding environmental sustainability within the modern dental curriculum Exploring current practice and developing a shared understanding. Eur J Dent Educ. 2021;25(3): 541-549. doi: https://doi.org/10.1111/eje.12631.
- 5. Field J, Martin N, Duane B, et al. Embedding environmental sustainability within oral health professional curricula Recommendations for teaching and assessment of learning outcomes. *Eur J Dent Educ.* 2023;27(3): 650-661. doi: https://doi.org/10.1111/eje.12852.
- 6. General Dental Council, The Safe Practitioner: A framework of behaviours and outcomes for dental professional education. 2023.
- 7. Field J, Vital S, Dixon J, Murphy D, Davies J. The Graduating European Dentist Curriculum Framework: A 7-Year Review. *Eur J Dent Educ.* 2024; 29(1): 155. doi: https://doi.org/10.1111/eje.13058
- 8. Durnall O, Martin N, Mulligan S, Dixon J. Environmental sustainability: the attitudes and experiences of UK students in the oral health care profession. *Br Dent J.* 2024. doi: https://doi.org/10.1038/s41415-024-7135-z.









