BDJ Team
OCTOBER 2017

THE UNBEARABLE SWEETNESS OF SUGAR

©Brigitte Sporrer/Cultura/Getty Images Plus

BDA
British Dental Association

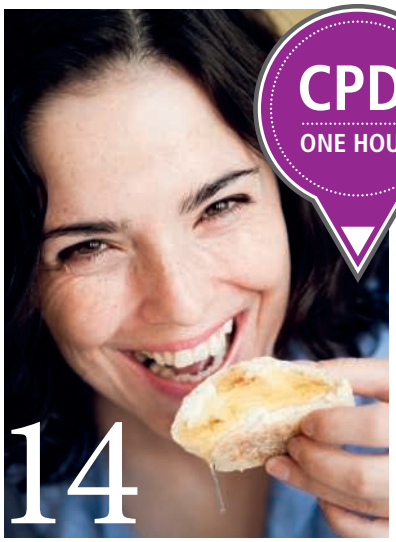
www.nature.com/bdjteam

October 2017

Highlights

Regulars

In this issue



©iStockphoto/Thinkstock

Ed's letter

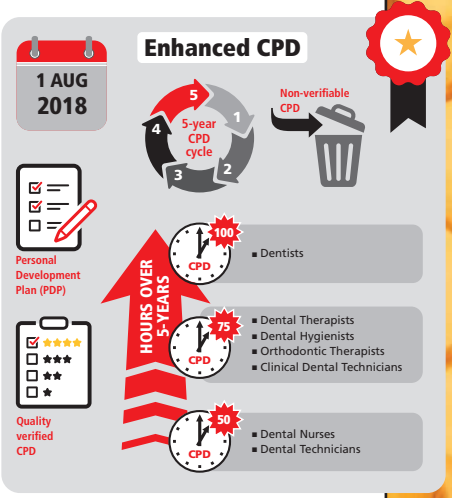
Navigating the minefield of food products on the market can be a regular challenge when it comes to sugar content, particularly when responsible for a small boy who would happily survive on a diet of chocolate spread on toast, sultanas and cake if given the chance.

Although I am not a dental professional myself, I regularly edit news stories about high levels of tooth decay and young children having rotten teeth extracted in hospital, which makes me particularly sensitive to the sugar issue. Reading the labels on food packaging and sorting fact from myth can be tricky. Do your patients know that grazing on dried fruit is bad for the teeth? Are all sweeteners tooth-friendly? What about honey - if it's natural and okay for the bees, can't we slather it on our bread? Read the cover story in this issue: it breaks down all the most common types of sugars and sugar alternatives and provides general and oral health advice for you and your patients. Even if you're already an expert on oral health education, it's useful revision.

Also this month we feature a guide to anaphylactic shock and acute allergic reaction, written by Emma Hammett, a first aid trainer from South London. We look forward to publishing further medical emergencies articles from Emma in future issues, to keep you up to date.

Also on the 'menu' is an article explaining the upcoming changes to CPD announced this year by the GDC; an interview with DCP Ruth Potterton about her experiences treating children in the Philippines; and we meet Paula Ennis, a dental nurse and oral health educator from Donaghadee in Co Down, who I'm sure is a whizz at dispensing dietary advice.

If you're at BDIA Dental Showcase later this month in Birmingham, pop along to the BDA/BDJ stand to meet the team!



Kate

Kate Quinlan
Editor
k.quinlan@nature.com

bdjteam2017147

©Ben Monk/DigitalVision/Getty Images Plus

THE TEAM

Cover
©Brigitte Sporrer/Cultura/Getty Images Plus

Editor-in-Chief
Stephen Hancocks OBE

Editor
Kate Quinlan

Production
Art Editor: Melissa Cassem
Production Editor: Betty Bohane
Digital Editions Production Controller: Natalie Smith

Advertising
European Team Leader – Academic Journals:
Andy May, +44 (0)20 7843 4785, a.may@nature.com

Publishing
Publisher: James Sleigh
British Dental Journal
The Campus
4 Crinan Street
London N1 9XW

© British Dental Association 2017. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the *British Dental Journal*.

The opinions expressed in this publication are those of the authors and not necessarily those of the British Dental Association or the editor. Appearance of an advertisement does not indicate BDA approval of the product or service.

©Echo/Juice Images/Getty Images Plus

NEW REGULATIONS ON X-RAY USE: LIKELY IMPLICATIONS FOR DENTAL PRACTICES

Professor Keith Horner, University of Manchester, Co-editor of FGDP(UK)'s *Selection criteria for dental radiography*, has reviewed the draft Ionising Radiation Regulations 2017 and draft Ionising Radiation (Medical Exposure) Regulations 2018 and what they mean for dental practices.

New regulations relating to the use of X-rays will come into force in early 2018. The Ionising Radiation Regulations 2017 ('IRR17') will take effect on 1 January 2018 and the Ionising Radiation (Medical Exposure) Regulations 2018 ('IRMER18') on 6 February 2018. They apply to England, Wales and Scotland. Separate regulations will be produced later for Northern Ireland.

At this stage, the regulations are still in draft format, but there are some changes that seem to be certain. In the past, a dental practice needed to *notify* the Health and Safety Executive (HSE), on a once-only basis, that it was using X-rays. Under IRR17, dental practices will be required to *register* with HSE using an online system (under development). It is understood that registration will require confirmation that certain actions have been taken, such as appointment of a Radiation Protection Adviser (RPA), risk assessments, adequate training of staff, amongst others. There will be a fee for registration which is understood to be at the 'tens of pounds' level. Re-registration will be required on a regular basis. Other changes under draft IRR17, which might have meant dental practices having to install additional barrier protection for staff, seem to have been successfully challenged.

Under IRMER18, dental practices will need to *appoint* a Medical Physics Expert. It is not expected that this will be a problem as the role will almost certainly combine with that of the RPA already required to be appointed. New procedures will be required relating to justification of exposures to 'carers and comforters' (eg a parent supporting a child undergoing an X-ray examination) and, if needed, for 'non-medical imaging' (eg exposures for medico-legal examinations). Other changes seem to have minimal impact on dentists.

You should expect your RPA to update you about the changes in the months ahead. Medical and dental guidance notes are planned for publication around May 2018, unfortunately after the regulations have come into force. There are no current plans to produce a specific dental guidance document. The FGDP(UK) will update their *Selection criteria for dental radiography* guidance to take account of the new regulations as soon as possible and may, if it is seen to be useful, develop some additional resources to help dentists understand the new regulations.

Diary

19-21 October 2017
BDIA Dental Showcase 2017
NEC Birmingham
http://www.dentalshowcase.com/

3 November 2017
FGDP(UK): Holistic Dentistry: Putting the Mouth Back into the Body
National Motorcycle Museum, Solihull
https://www.fgdp.org.uk/holistic-dentistry

3-4 November 2017
BSDHT Oral Health Conference & Exhibition 2017
Harrogate Convention Centre
http://www.bsdht.org.uk/oral-health-conference-and-exhibition

17-18 November 2017
National Dental Nursing Conference
Milton Keynes Hilton
http://badn.org.uk/conference

7 December 2017
BSG: Improving Mouth Care for Older People in Care Homes - Part 2
Royal College of Physicians, London
https://www.gerodontology.com/courses-and-events/

19 January 2018
BSDHT/BADT fundraising study day
Beales Hotel, Hatfield, Hertfordshire
http://bit.ly/2xACX8l

Dental hygienists and therapists encourage healthy first smiles

Twenty-eight dental hygienists and dental therapists got involved in the First Smiles campaign this year, visiting local schools and nurseries to spread the word on why oral health is so important. The campaign, organised by the British Society of Dental Hygiene and Therapy (BSDHT), provides an opportunity for professionals to reach out to young people in their communities.

Among the activities arranged were demonstrations on how to brush, role-playing a visit to the dentist, quizzes and games designed to highlight 'good' and 'bad' foods in terms of the amount of hidden sugars.

Joanne Martin commented: 'The feedback from parents was lovely and some of the children that hadn't been to the dentist before were asking their parents to take them. Hopefully by doing these sessions with our younger generation, the messages we are always promoting are getting out there. This is a fantastic opportunity for our dental profession to keep our kids smiling'.

Lynn Chalinder added: 'We carry out clinics weekly in an area of severe deprivation and lack of education and care, so the samples went down a storm! For some of the children, this was their first and only toothbrush and they had individual attention in how to use them. It went really well'.

BSDHT would like to thank all of those who got involved in this year's First Smiles campaign. For more information about the BSDHT, visit www.bsdht.org.uk.

STUDY DAY AIMS TO **BOOST CAMPAIGN FUNDS**

A fundraising study day is planned for Friday 19 January 2018 to help boost the British Society of Dental Hygiene and Therapy's (BSDHT's) and British Association of Dental Therapists' (BADT's) campaign for prescribing exemptions for dental hygienists and therapists.[1,2]

The BSDHT and BADT are pursuing exemptions to the Medicines Act meaning that dental hygienists and therapists will be able to provide prescription-only medicines, such as local anaesthetic, topical anaesthetic and fluoride varnish, to patients without first having to get a prescription from a dentist.

The upcoming study day, taking place at Beales Hotel in Hatfield, Hertfordshire, will consist of a series of presentations on topics, ranging from the new eCPD to new technologies. The aim of the day is to enhance learning and raise funds to support the exemptions campaign.

The speaker line-up includes some of the UK and Ireland's most respected dental professionals in the field of dental therapy and hygiene, including:

- Fiona Sandom, immediate past president of the BADT, who will deliver an update on the new eCPD and update the audience on the exemptions campaign
- Megan Fairhall, dental hygienist at Harley Street Dental Clinic, who will discuss 'Using social media to challenge the perception of dentistry', looking at the pros and cons and explaining how social media has elevated her business
- Juliette Reeves, dental hygienist and nutritionist, who will update delegates' knowledge on all things related to periodontal disease, including new technologies in the field of laser treatment
- Dental hygienist Siobhan Kelleher and dental hygienist and therapist Melonie Prebble, who will be providing a combined presentation on 'Scaling your business' and share 'start to finish' processes of key Cavitron techniques, with a view to building a business with effective communications and systems This session promises audience participation!

Event organiser Melonie Prebble (pictured), said: 'I decided to host the study to do my bit for the campaign and raise much-needed funds for the cause. This project has brought the hygiene and therapy community together and had such a positive impact on our profession.

'The aim of the day is to introduce a high calibre panel and blend traditional concepts with new technologies. I have some interesting caries diagnostic technology to share – pending approval – so watch this space!'

To reserve a place, visit http://bit.ly/2xACX8l.

1. Prescribing for patients: help us do our job. *BDJ Team* 2017; doi:10.1038/bdjteam.2017.135. Available at: https://www.nature.com/articles/bdjteam2017135.
2. BSDHT and BADT collaborate in mission to provide prescription-only medicines. *BDJ Team* 2017; doi:10.1038/bdjteam.2017.95. Available at: https://www.nature.com/articles/bdjteam201795.

DISPLAY YOUR COMMITMENT TO SEEING PRESCHOOL PATIENTS

The British Society of Paediatric Dentistry (BSPD) is calling on dental practices to join its new Dental Check by One (DCby1) campaign designed to get children seeing a dentist before their first birthday.

The campaign was launched this summer by BSPD in partnership with the Office of the Chief Dental Officer for England, Sara Hurley. It is part of Smile4Life, a programme being rolled out by local authorities around England in order to improve oral health and reduce the number of children needing extractions under general anaesthetic.

Practices which support the campaign may use the DCby1 logo on their website and in their literature to signal their door is open to young children, challenging the misconception that children should not visit the dentist before they reach school age.

Claire Stevens, Vice President of BSPD, said: 'The key purpose of this visit is to deliver key preventive messages and begin a positive lifelong relationship with NHS dentistry'.

To find out more and download the logo, visit http://bspd.co.uk/Resources/Dental-Check-by-One.

‘I enjoy being front line with the patients’

Paula Ennis, 45, is a dental nurse and oral health educator at WRE Livingston Dental Health Care at Bangor in County Down.

During the week I get up at 7am, shower, have breakfast and get my son organised for school. My home town is Donaghadee in Co Down, a lovely seaside town where I have lived for 40 years. I usually have cereal or toast with a cup of tea at home before taking my son to the bus stop and heading to work. I am fortunate that I only live six miles from work so it doesn't take long to drive there.

I am married to Mark who is a painter/decorator and we have two children: Hollie who is 18-years-old, has just left school and is hoping to study history at university, and Thomas who is 13-years-old and in year 9 at school.

I work three days a week at the practice at the moment and do one late night a week. My responsibilities include the day to day running of a busy surgery and I have my own oral hygiene session once a week, where I advise patients on their oral health. I have my NEBDN Diploma in Dental Nursing and my Oral Health Education Certificate.

While I was at school I chose to do work experience at the local orthodontic practice as I had attended the surgery a lot while wearing a brace for two years. I thought dental nursing looked like a good, interesting job and the staff were always very nice to me.

After completing my GCSEs at high school I enrolled in a dental nursing course at the local further education college. I studied all aspects of dental nursing and spent time out gaining experience in dental surgeries. I also attended night classes and completed a GCSE then an A-level in sociology.

I always like helping people and how different each day can be; I enjoy meeting people and am always eager to learn new tasks and challenges, working as an individual or as a team. I also enjoy the responsibility of helping run a busy surgery: setting it up for the day, maintaining dental equipment, responding to requests from the dentist working chairside, decontamination control and reception duties.

I enjoy being front line with the patients, showing them compassion and empathy to help make their dental experience better - especially nervous patients. There is nothing more rewarding than helping someone get over their fears of the dentist or restoring someone's smile, giving them back their confidence and self-esteem.

The most stressful element of my job can be dealing with very nervous patients or patients with complex needs: this requires patience and knowledge and skill in dealing with different individuals and their needs.

In our dental team there are two dentists, three dental nurses, a dental hygienist and an oral health nurse. We see a wide variety of patients of all ages and walks of life including private care, NHS and Denplan care. We as a team work hard to provide a good caring service for all our patients to meet their expectations and dental needs.

As the oral health nurse I go out to different venues to educate people on their oral health. It can be local schools, youth groups or children's play groups, giving out advice and practical help to everyone, hoping that this will help improve their oral health.

We all usually bring our lunch in to work. Lunch is time out to catch up with each other when things are not so busy. If the weather is good we go for a walk to clear our heads.

I am lucky that my boss is very supportive in regards to CPD; he appreciates it is important for all members of the team and allows us to attend and book courses even if sometimes it requires time off. Most courses are available online or can be attended after work. It is important to keep up to date with recent developments and changes in the dental field enabling us as professionals to gain new knowledge and skills that can be passed on to our patients.

I also help out at the dental nursing examinations that take place several times a year. It is always encouraging to see new students prepare to gain their qualifications to start on their dental career. It takes me back to when I started 27 years ago ... how time flies!

I think if you are busy in work it is very important to have interests and hobbies to do in your free time. I enjoy walking, yoga classes, reading, socialising with friends and family and church life. It is important to let off steam and relax as much as possible and also to take a step back every now and then and appreciate all that you have in life.

I am careful with what my family and I eat. ‘Everything in moderation’ can be difficult at times with two teenagers in the house but on the whole we try our best to have a healthy balanced diet. I am careful about oral health and try to pass my knowledge and experiences on to my family, ensuring they have a good dental regime.

If I hadn't gone into dentistry I think I would have liked to be a teacher. I enjoy the dental education teaching that I do and also having an influence, however small, on people's oral health.

©yelet/iStock/Getty Images Plus

bdjteam2017153

All change please... Enhanced CPD

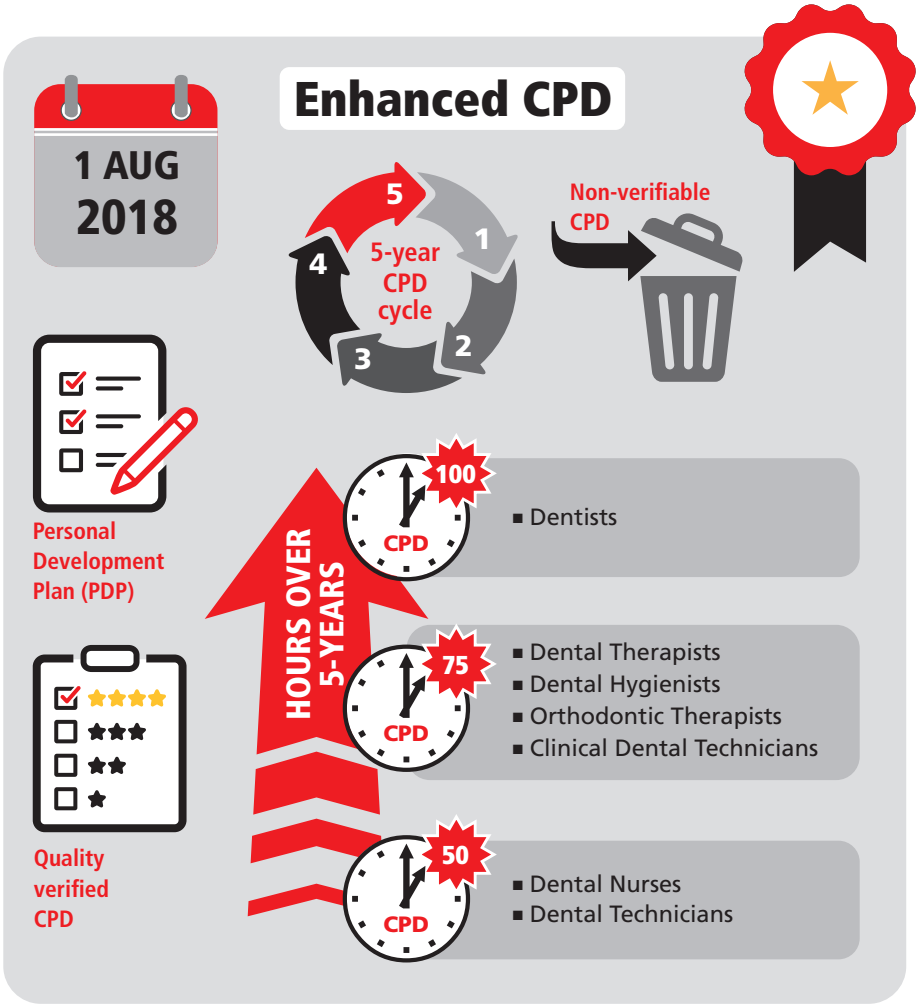
Priya Sharma[1] explains the GDC's new CPD scheme due to start on 1 August 2018 for DCPs.

Embedded in your life

Recently much attention has focused on enhanced continuing professional development (ECPD). According to the General Dental Council (GDC) this new scheme 'will ensure CPD activity is firmly embedded in the professional life of dental professionals. It is intended to support registrants in doing CPD regularly, in accordance with our standards and within their current scope of practice'. The Chief Executive of the GDC, Ian Brack, said that 'Having a better system for continuing professional development – with a much clearer emphasis on planning development, reflecting on learning and embedding that learning into current practice – ties in with prevention of patient harm element which was one of the principles set out in *Shifting the balance*.'[1]

Quality not quantity

The restructuring of professional learning will focus on the quality of CPD as opposed to the quantity. It will move away from doing CPD for the sake of meeting requirements and progress to engaging registrants to take charge of their learning needs in order to improve their skills and abilities throughout their professional life. It is an evolving process and the learning is part of the journey.



The ECPD requirements will begin on 1 January 2018 for dentists and 1 August 2018 for dental care professionals (DCPs). Many DCPs will be commencing their new five-year cycle in August hence will not be caught in the conversion from the old to the new. For those registrants who find themselves mid-cycle there are transitional arrangements. In simple terms a pro-rata scheme will apply and a simple transitional tool may be found on the General Dental Council (GDC's) website.[2] If a registrant is unsure as to where they are in their cycle it is easy to determine on egdc-uk.org.

This article will highlight what ECPD is and how to comply with the GDC's new requirements.

The new requirements

Only verified CPD quality assured by the provider will be accepted by the regulator in order to demonstrate credibility. It is the hope that this will increase public confidence in those that are on the register whilst ensuring

[1] *Priya Sharma BA (Dist.), BSc (Pharm.), RDN, FRSA, FRSPH is a dental nurse and dental practice manager in London and a GDC fitness to practise panellist. Priya graduated as a pharmacist and sociologist in Canada. Her work experience includes pharmacy, medical information, pharmacovigilance, teaching at university, presenting at national conferences and medical writing.*

Composite: ©antfoholo/Getty Images Plus; ©ulimi/DigitalVision Vectors

all dental professionals are keeping their knowledge and skills current.

There has been an overall reduction in the actual number of hours that registrants need to carry out in light of the removal of non-verifiable CPD, however, an increase in the number of hours of verifiable CPD. The hours of verifiable CPD required in each five year cycle are:

- 50 hours to be carried out by dental nurses and dental technicians
- 75 hours to be carried out by dental therapists, dental hygienists, orthodontic therapists and clinical dental technicians
- 100 hours to be carried out by dentists.

Verifiable CPD is a learning activity which has clear documented aims, outcomes and objectives along with rigorous quality control measures. In addition, documentary evidence such as a certificate will serve as proof that the activity was completed. There will also be a requirement to make annual declarations of the CPD that has been carried out and that the registrant is meeting the requirements. It is imperative that CPD is carried out regularly: at least ten hours in two years. Failure to comply with the requirements of ECPD can result in the removal of your name from the GDC register.

Personal development plans

All dental professionals will need to create a personal development plan (PDP) outlining their personal learning needs encouraging professional development and lifelong learning. At this stage it is important for dental professionals to analyse their own practice and their specific learning requirements. It also would be helpful to speak to the wider dental team and colleagues to help enrich your PDP. The GDC suggests 'patient feedback, complaints, audits, significant event analysis and peer review processes, or dental practice evaluations' may assist the individual in creating their PDP. A PDP is a useful learning tool that can be created in a simple easy to use table format. It may be useful to have the following as part of your PDP:

- Aims and objectives
- Planned activities/learning
- Timeframe
- Verifiable CPD undertaken
- Number of hours
- Reflection
- The meeting of at least one of the GDC's learning outcomes.

Ensure that you complete your PDP as various CPD activities are completed and do so consistently throughout the five-year cycle.

Learning outcomes

The next step is to identify verified CPD that will meet the needs of your PDP. Each CPD activity will need to meet at least one of the GDC's learning outcomes and these should be noted on your PDP. The GDC has set four learning outcomes that are generally derived from the *Standards for the dental team*[3] and you must clearly document which outcome the CPD is related to. These are outlined below:

1. Effective communication with patients, the dental team, and others across dentistry, including when obtaining consent, dealing with complaints, and raising concerns when patients are at risk
2. Effective management of self, and effective management of others or effective work with others in the dental team, in the interests of patients at all times; providing constructive leadership where appropriate
3. Maintenance and development of knowledge and skill within your field of practice
4. Maintenance of skills, behaviours and attitudes which maintain patient confidence in you and the dental profession and put patients' interests first.

Once the verified CPD is completed the registrant must reflect. The GDC states: 'Following the CPD activity the registrant can reflect on its impact by considering how it has or will enable them to maintain and develop their skills. It would enable them to evaluate how their CPD contributes to supporting them to practise in accordance with our standards and how it has contributed positively to the wider context of patient care'. This allows for critical thinking skills, incorporating the newly acquired knowledge into practice and determining if there is still the potential to further expand a registrant's knowledge base. Indeed, this will directly impact an individual's awareness and understanding of their own thought processes.

You will find that the 'thinking about thinking' approach will further raise awareness of the full cognitive process. Learning is individually unique to each person and each registrant will have their own position of knowledge. Newly acquired knowledge must be related to knowledge prior to the learning activity and what changes have and can be implemented. Therefore the introspective processes should be succinctly documented in your PDP. In fact, we continuously reflect in our personal and professional lives without us realising the fine details of the process. Under ECPD registrants just need to make this a conscious, recognised, intentional and recorded process.

Impact on practice

Finally, the registrant must record their learning activity, outlining the impact that the integration and application of newly acquired knowledge has had on their clinical practice. In turn they may still identify gaps and the need for further learning; subsequently these can be added to a PDP leading to cyclic lifelong comprehensive learning.

Therefore the CPD record should consist of the PDP, a log of completed learning including date, number of verifiable hours and which learning outcome it covered, and evidence, such as a certificate, that the activity was completed. The ECPD record should be kept for a minimum of ten years as the GDC can audit your learning at any time and up to five years following a cycle.

Essentially the ECPD cycle will allow dental professionals to tailor to their own personal learning needs while reflecting. It is important not to get discouraged at the beginning and that making the initial efforts is progress within itself. As with all change it may seem a bit overwhelming at first but once registrants begin the process it will most certainly enrich knowledge and clinical abilities.

1. General Dental Council. *Shifting the balance: a better, fairer system of dental regulation*. Updated 9 March 2017. Available at: https://www.gdc-uk.org/about/what-we-do/regulatory-reform (accessed September 2017).
2. General Dental Council. Enhanced CPD transition tool. Available at: https://gdc.onlinesurveys.ac.uk/ecpdtool (accessed September 2017).
3. General Dental Council. *Standards for the dental team*. Updated 14 August 2017. Available at: https://www.gdc-uk.org/professionals/standards/team (accessed September 2017).

Editor's note: BDJ Team *will continue to offer registered DCPs ten free hours of verifiable CPD a year. To access the CPD Hub, visit https://cpd.bda.org/login/index.php.*

bdjteam2017154

‘I have never experienced patients so keen to receive dental care’

An insight into the work of UK dental volunteers in the Philippines and interview with volunteer **Ruth Potterton**, a dental hygienist and therapist.

This summer a team of dental professionals travelled to the Philippines where they treated hundreds of children in a joint mission with two other UK charities.

Four Dentaid volunteers joined teams from Team Rubicon and Serve On for the trip to Umapad Elementary school in Cebu. Many of the pupils at the school live on or near the city’s dump site and have to scavenge to help provide for their families. The area is also affected by earthquakes and recent tremors have damaged buildings and infrastructure.

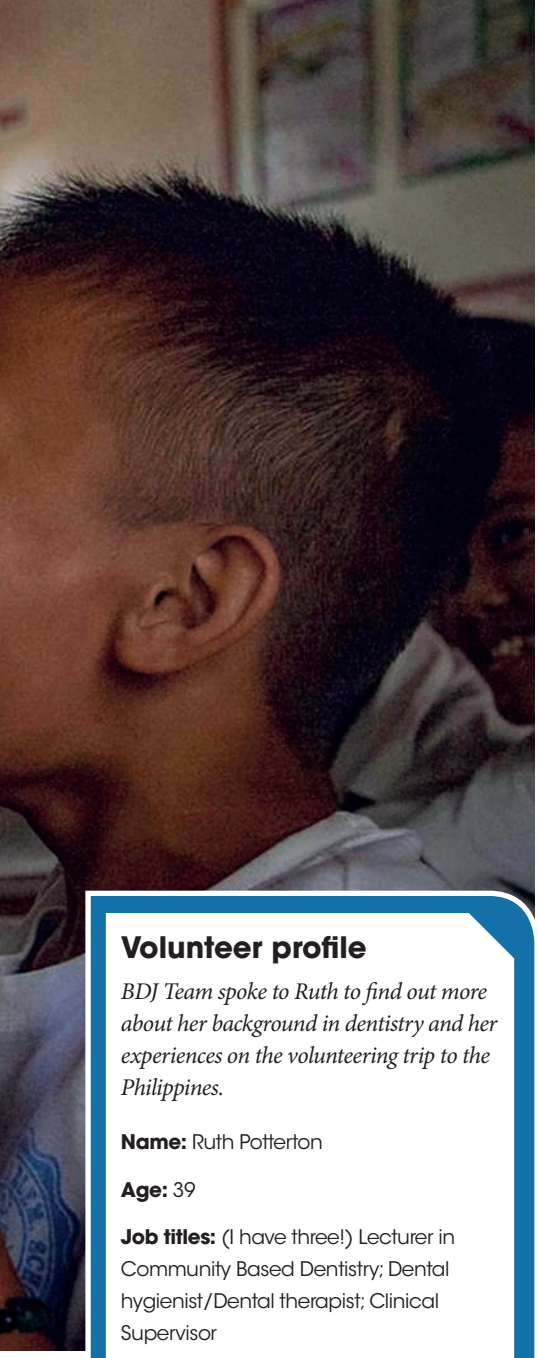
The Dentaid team of Mark Inman, Rob Witton, Ruth Potterton and Joy Baker treated 383 children including many who had been suffering long-term dental pain and needed extractions. They also applied fluoride varnish to 185 children’s teeth and gave oral health education presentations to 532 youngsters. Sadly many of the children had severe decay and long queues formed to see the dental team as access to dental care in the area is very limited.

The team also visited Cebu University to meet students learning English and went to a dental school to establish links with a new generation of dentists in the Philippines.

Operation Katimbang – taken from the local word for unity – saw the three British charities working alongside each other for the first time. Serve On provided training and support for the emergency services in Cebu and taught children and staff what to do if a natural disaster strikes. Volunteers from Team Rubicon rebuilt and refurbished classrooms that were damaged during a recent tremor, transforming them into bright, cheerful spaces.

The dental team had to rely on basic hand instruments, plastic chairs and headtorches as they screened and treated hundreds of children but said they had never seen patients so keen to receive dental care.

Dentaid volunteer Ruth Potterton, a dental hygienist and therapist, said: ‘We were totally in love with the children from Umapad school who were so polite and well mannered. The levels of decay were high and sadly lots of teeth had to be extracted. The country and the people were wonderful and 21 people from three different organisations have worked together selflessly towards one goal. I would highly recommend volunteering; it has been a wonderful experience’.



Volunteer profile

BDJ Team spoke to Ruth to find out more about her background in dentistry and her experiences on the volunteering trip to the Philippines.

Name: Ruth Potterton

Age: 39

Job titles: (I have three!) Lecturer in Community Based Dentistry; Dental hygienist/Dental therapist; Clinical Supervisor

Hometown: Cheltenham, Gloucestershire

Current town: Okehampton, Devon

Places of work: (Again there are three!) Plymouth University Peninsula Schools of Medicine & Dentistry, Oasis Dental Care and Harwood Dental Practice

How did you first become involved in dentistry?

I was dentally phobic as a child and when as a family we moved to Devon and changed dental practice, I was inspired by my new dentist. I knew from the age of seven years I wanted some form of career in dentistry. I began full time hospital training in London as a dental nurse aged 18.

When did you qualify as a dental hygienist and therapist?

In 2004 from Queen Mary University of London, Barts & The London School of Medicine & Dentistry.

What appealed to you about being a dental hygienist and therapist?

I had worked as a dental nurse within an Oral & Maxillofacial Surgery department and had successful career progression over four years post qualification. I found myself as a Dental Nurse Manager for the department and quickly realised being office based was not my passion and I wanted to get back to patient care and the practical aspects of a career I loved. I was working in a large dental teaching hospital, surrounded by dedicated dental undergraduates and I was eagerly wanting to be the person undertaking the treatment, not the observer. I decided it would be a step backwards relinquishing my managerial position to return to practical dental nursing and decided I should expand my horizons. Training as a dental hygienist and therapist was the obvious career step for me.

What do you enjoy about your job?

The fabulous people I get to meet, treat and work alongside. I am extremely privileged in that my working week is varied due to having three part time positions. I am still very much hands-on and work clinically in two dental practices and am passionate about working to try and improve the oral health of the patients within my care. I am also fortunate to be part of a team teaching undergraduate dental hygienists/therapists and dental students in my roles as lecturer and clinical supervisor. Sharing knowledge and supporting the development of future dental professionals is extremely important to me.

How did you get involved in volunteering with Dentaid?

Purely by chance. My undergraduate colleagues will back me when I say volunteering with Dentaid had been on my bucket list since dental hygiene and therapy school, however, there had always been reasons not to act upon it: finances and timing being the two main reasons. Fast forward 15 years and I found myself being introduced to Andy Evans, CEO of Dentaid. At Peninsula Dental School our undergraduates undertake community based health intervention projects with local community organisations, supporting and aiming to improve the health and oral health of marginalised groups, and as a Lecturer in Community Based Dentistry I am involved with this teaching. In April each year our students get to present their work during a Symposium and Andy was a member of our expert panel assessing the student projects. During a coffee break he mentioned to me the forthcoming mission to the Philippines, that there was one space left for a hygienist/therapist and without hesitation I jumped at the chance to put my name forward. Before I knew it, it was confirmed and I didn't look back!

What did you have to do to prepare for the trip?

The Dentaid team couldn't have been any more supportive. Formalities such as registration, occupational health assessment, paying for flights and obtaining a visa to work overseas were quickly undertaken. Obviously you have to evidence your identity, professional status and experience but this is very quickly achieved securely online and Dentaid lead you through this process. I had to request time off from my three employers and I couldn't have asked them to be any more supportive than they were! Additionally my patients were 100% behind me and were overly generous in their kindness and support.

'VOLUNTEERING HAD BEEN ON MY BUCKET LIST SINCE DENTAL HYGIENE AND THERAPY SCHOOL, HOWEVER, THERE HAD ALWAYS BEEN REASONS NOT TO ACT UPON IT…'

The most important thing I needed to do was fundraise as the cost of volunteering quickly adds up, especially when it is your first mission.

Costs incurred included: obtaining the required vaccinations for the country, anti malarials, flights, personal kit, personal insurance and professional indemnity, UK transfers and in-country expenses (although these are usually fairly inexpensive) transport, food, licence/visa to work etc.

Flights are booked for you, and consideration is given to the most suitable UK airport, although it is highly recommended that the team fly together as it is a perfect bonding opportunity.

As a volunteer you are also asked to collect donations of dental consumables and materials for the mission. In our case aside from gloves,

the most valuable item was toothbrushes and we took over 1,000 with us to hand out during our oral health education sessions.

This mission, I was told, was slightly different to most traditional Dentaid trips in that our small dental team of four (two dentists, a dental nurse and myself) would be working with two other UK charities: Team Rubicon UK [TRUK] and Serve On, to help Umapad Elementary School which serves a slum area that has been devastated by earthquakes, large fires and damage from recent typhoon activity. The three charities would work in partnership to carry out vital repairs to the school, support students and teachers with training in English and earthquake survival skills, work with local emergency first responders to improve their search and rescue expertise and provide much needed dental care and oral health education. Due to this collaborative nature, our Dentaid team was invited to the Team Rubicon UK HQ in Wiltshire for a training day. This was a perfect opportunity to meet other members of the whole team (21 people in total), receive briefings on deployment, operational support, safety, medical training, security and communications. TRUK also provided us with their kit list so another shopping trip was required!

Had you travelled to this area before?

No, the Philippines is the furthest I have travelled.

How did you find the experience?

Without hesitation truly amazing and thoroughly rewarding. Or mission was called Operation Katimbang (Cebuano for 'unity') and there honestly was a coming together of three teams within this unit. Every member of the volunteer team I worked with was totally amazing. All 21 people, likeminded and selflessly working for the same end goal despite representing three different organisations.

I have never experienced patients so keen to receive dental care, literally crowding at the doorway and pushing to get in, all day long, every day. We found long queues formed from before 7 am once word had spread within the community that we were there and these people waited patiently for us to arrive just before 9 am and start work. Some would wait all day with the hope of being treated and then return the next day to do it all again if they hadn't been treated or even if they had and they had more painful teeth remaining (350 permanent teeth were extracted by the two dentists).

The children from Umapad school were so polite and well mannered. The levels of tooth decay were extremely high and unfortunately many teeth had to be extracted (179 deciduous teeth) but they were keen to learn and accept advice and education on how to improve oral health and diet (532 received OHI and 185 received topical fluoride application).

The Filipino people were wonderfully gracious and respectful towards us. Every morning the staff and school children greeted us with a cheery 'good morning', the children all keen to receive a high five and wanting to watch us work or talk to us. Those that had mobile phones or saw ours wanted selfies taken!

Truthfully I also rediscovered myself and my love for a career that I had chosen as a child. We can quite easily get caught up in the mundane of daily life and the challenging issues we are faced with day to day whilst trying to do our jobs. This experience allowed me to take a step back and re-evaluate.

How long were you there?

Fourteen days (including four days travelling.)

What challenges did you face?

That we couldn't do enough. So much more is needed to support and improve the oral health of just this one school, let alone looking wider afield.

Our makeshift clinic was a classroom that we had to clear and prepare before work could commence. Dental chairs were plastic patio chairs and a dustbin became a spittoon. A dental light is a head torch (which drains batteries, so take multiple spares!) and whilst we had some instruments, it was quite a limited range so be prepared to work in challenging conditions without adequate moisture control. Posture and correct positioning on multiple occasions goes out of the window so on many evenings back at base you would find members of the dental team laid out straight on the floor, stretching out their backs.

Some of our equipment was shipped out and hence there when we arrived, but the vast amount of instruments and consumables we had to carry ourselves, so allow space in hold luggage weight allowance for this.

Depending on the country you work in, the weather plays a part too. We were working in 35+ degree heat and humidity of 95% so even the simplest of activities is tiring. Luckily the roof in our classroom didn't leak, like so many others, because when it rained it really rained!

It was also challenging in that we had to rely on locals to support us in some instances (for example transportation to and from locations) and this would happen in 'Philippine time' so be patient and respectful of cultural differences.

We also couldn't have achieved as much as we did without a translator, but even learning basic greetings, please and thank you, open, close and pain helped greatly.

'EVERYONE WAS INTERESTED IN EACH OTHER'S ROLES, CHARACTERISTICS AND REASONS FOR BEING ON THE MISSION. THERE WAS A REAL TEAM SPIRIT AND WE ALL COMPLEMENTED EACH OTHER.'

What were your impressions of the people you met?

Truly wonderful. So humble, polite and respectful. The school children were so trusting, engaged and willing to learn. There is a cultural respect as well as a respect for elders and visitors which made our mission easier to undertake. Aside from the local people, the whole volunteer team was amazing. Everyone was interested in each other's roles, characteristics and reasons for being on the mission. There was a real team spirit and we all complemented each other. Evidence suggests when you combine different interventions you actually create greater impact. The sum is greater than the individual parts and that really is a great example in this case.

Would you like to volunteer in the future?

Definitely, I am already saving for the next Dentaid trip! Additionally I hope to return to the Philippines again; provisional plans are to return in the future to enhance the prevention programme in order to improve oral health and we made some good links with staff at one of Cebu's dental schools in order to achieve this.

Would you encourage other DCPs to volunteer?

I would sincerely highly recommend volunteering; it has truly been a wonderful experience and personally I cannot wait for the next trip. I would advise anyone considering it to have at least a year or two's experience post qualification before putting yourself forward and don't go expecting a 'jolly' (382 patients were treated, not including those receiving OHI and topical fluoride). It is hard work which is physically and emotionally taxing, but the rewards most definitely outweigh any negatives. You will laugh and cry and return with a head full of memories you will cherish forever.

I certainly couldn't have undertaken this without the financial and emotional support of friends, family, colleagues and patients that helped get me there and benefit from this enriching experience.

Dentaid has spaces left on its volunteering trips to Uganda, Zambia, Kenya and Cambodia in 2018. If you are interested, find out more at www.dentaid.org/volunteering.

bdjteam2017155

Denplan from Simplyhealth Professionals

Young DEPPA

The first online patient assessment tool for patients under 17 years.

What is DEPPA?

Denplan Previser Patient Assessment (DEPPA) is the only evidence-based, online individual risk assessment tool to help patients understand their current oral health and future disease risk.

With over 85,000 adults having benefited from DEPPA already, you can now engage and motivate younger patients and their parents/carers.

- Support communication with patients about their oral health
- Personalised biofeedback in a young patient friendly manner
- Monitor the success of care plans for young patients over time
- Adds value to your practice, especially if offering young patient plans, such as Denplan for Children


Your Oral Health

Prepared For: Jane Banks
Exam Date: 22/12/2016
Prepared by: Denplan Corporate
Denplan Court Victoria Road Winchester, SO23 7RG
Tel: 0800 838 951
Website: www.denplan.co.uk/patients/members/employees

PREVISER

How you feel	You told us you sometimes have pain in your mouth You told us that you can eat what you want You are happy with how your teeth look
Tooth decay	Your teeth are healthy and you have no fillings/extractions due to decay We have not identified any concerns for tooth decay in your diet You are using the correct strength of toothpaste at least 2x daily You are cleaning your teeth well
Tooth wear	You have normal tooth wear for your age We have not identified any concerns for tooth wear in your diet
Tooth defects	Your teeth are developing normally
Tooth injury	You have had no accidents that have affected your teeth
Gum health	You have some bleeding from your gums
Soft tissues	The soft parts of your mouth look healthy
Orthodontics	We have no concerns about the position of your teeth

93 out of 100 — Total Oral Health Score

Please note: ALL types of screening can produce false negatives/positives and NO algorithms are 100% effective.

"Quick and simple to carry out with an easy to understand print out. Very child-friendly too."*

Visit us at the BDIA on stand L30

Do you have Denplan Excel certification?

DEPPA and YDEPPA is available free of charge and provides you with unlimited access.

For all Simplyhealth Professionals member dentists without Excel, DEPPA subscription costs are:

Up to two member dentists at a practice:
£100 per month (inc VAT)
Three to four member dentists at a practice:
£150 per month (inc VAT)

To find out more or arrange a FREE TRIAL,
go to **www.denplan.co.uk/excel**
or call **0800 3283223**

*Comment taken from YDEPPA pilot feedback survey Oct-Nov 2016.

CAM2263 09-17

Denplan Ltd trading as Simplyhealth Professionals, Simplyhealth House, Victoria Road, Winchester, SO23 7RG, UK. Tel: +44 (0) 1962 828 000. Fax: +44 (0) 1962 840 846.
Denplan Ltd is registered in England No. 1981238. The registered offices for these companies is Hambleden House, Waterloo Court, Andover, Hampshire SP10 1LQ.

CPD: ONE HOUR

CPD questions

*This article has four CPD questions attached to it which will earn you one hour of verifiable CPD. To access the **free** BDA CPD hub, go to **http://bit.ly/2e3G0sv***

The unbearable sweetness of sugar

(and sugar alternatives)

There is a lot of confusion among the general public around sugar, sweeteners, 'no added sugar', 'naturally occurring sugars', 'free sugars' and sugar alternatives such as Xylitol. We commissioned **Elaine Gardner**[1] of the British Dietetic Association [the other BDA!] to sort fact from fiction and provide advice that you can share with your patients on the effects of sugars and alternative sugars on general and oral health

1 Xylitol

What is it? A polyol (sugar alcohol) that looks and tastes like sugar (can be used in equal measurement).

Found in? Available to purchase in granular form and in a range of specialist food products like honey, jams and chocolate. Medications and oral health products (mouth rinses, toothpaste, lozenges) can contain xylitol. It is found naturally in very small amounts in some fruits like berries, but the most common source of xylitol is from sugar-free chewing gum.

Effect on general health: Xylitol has a lesser effect on blood sugar levels than sugar, due to its slow absorption rate (low glycaemic index of 7). It can be useful as an alternative to reduce sugar consumption for people with diabetes as it does not raise blood glucose or insulin levels.

[1] *Registered Dietitian, British Dietetic Association*

©Brigitte Sporrer/Cultura/Getty Images Plus

©PeterHermesFurian/iStock/Getty Images Plus

It has a reduced caloric value which can be helpful in weight control. One spoon of sugar contains 16 calories versus ten calories from xylitol. This is a small saving, but not very much.

Xylitol is slowly and only partially absorbed in the intestine and too much can cause water retention, resulting in diarrhoea. It is not recommended to consume more than 50 g xylitol per day.

Oral health impact: Xylitol is not metabolised by bacteria in the mouth and so it does not contribute to tooth decay. It also helps remineralise tooth enamel.

Chewing sugar free gum stimulates the flow of saliva through the chewing action; stimulated saliva helps to reduce acidity in the mouth by washing away plaque acids and contributes to their neutralisation by providing an important buffer, bicarbonate. Stimulation of saliva flow through the use of sugar-free gum results in a 10-12 fold increase over a resting saliva rate, which helps wash away debris of food particles and sugars from the mouth and restore optimum pH levels in the mouth faster than without sugar-free gum.

Saliva also has an important role in the maintenance of tooth mineralisation as it provides the calcium and phosphate ions used to repair damaged enamel and it encourages the remineralisation of early caries.

Chewing gum sweetened with xylitol also helps reduce oral *Streptococcus mutans* levels, a key pathogen responsible for dental caries.

©JannHuizenga/iStock/Getty Images Plus

of xylitol vehicles to address public health needs. *Adv Dent Res* 2009; **21:** 10.1177/0895937409335623.

2. Söderling E. Controversies around xylitol. *Eur J Dent* 2009; **3:** 81-82.

2 Agave nectar

What is it? A sweet syrup traditionally produced from a cactus-like plant. New methods of processing mean that it now bears little resemblance to the traditional product that, anecdotally, had health benefits. The product, including those claiming to be 'raw', is now a highly-refined syrup high in fructose. It is very similar to high fructose corn syrup, which is commonly found in carbonated drinks.

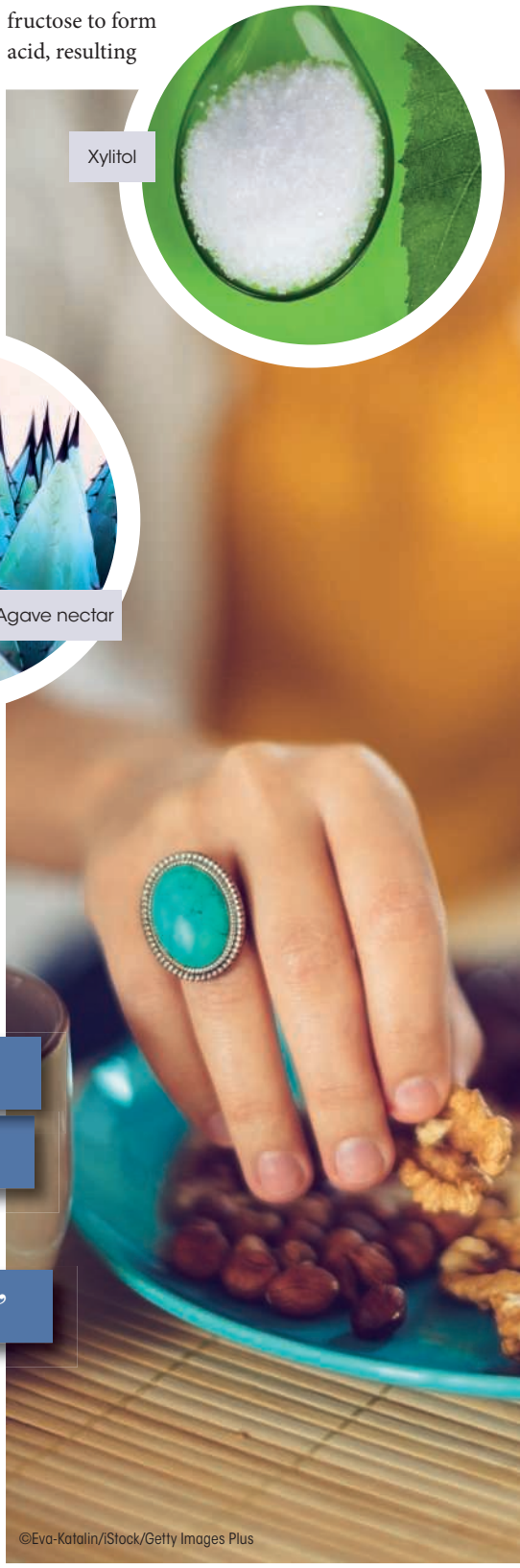
Found in? Available to purchase in a light or dark syrup, from health food shops and supermarkets.

Effect on general health: Agave is commonly marketed as a slow-release carbohydrate with a low glycaemic index. This is true as it contains mainly fructose and only low amounts of glucose. Although fructose doesn't raise blood sugar levels in the short-term, it can contribute to insulin resistance when consumed in large amounts. This can cause major increases in long-term blood sugar and insulin levels, strongly raising the risk of metabolic syndrome and type 2 diabetes.

The liver metabolises fructose, but when overloaded it starts turning the fructose into fat globules, which raise blood triglycerides. Having a high level of triglycerides in your blood can increase your risk of heart disease.

Agave contains more calories than sugar (60 vs 48 calories), but as it is sweeter you should use less.

Oral health impact: Fructose like sucrose is detrimental to oral health. Bacteria on tooth surfaces metabolise fructose to form acid, resulting in a fall in plaque pH and demineralisation. When the pH rises again to above 5.5 due to the dissipation of acid after about 20-30 minutes, enamel can be reformed and repaired with calcium and phosphate released from the saliva.



©Eva-Katalin/iStock/Getty Images Plus

'SUGAR-FREE CHEWING GUMS USING XYLITOL ARE A CONVENIENT, SIMPLE AND EFFECTIVE MEANS OF IMPROVING DENTAL HEALTH THROUGH THE STIMULATION OF SALIVA WHEN USED REGULARLY'

Advice for patients: Xylitol is a useful alternative to sugar but moderation in the quantity consumed is important.

Sugar-free chewing gums using xylitol are a convenient, simple and effective means of improving dental health through the stimulation of saliva when used regularly throughout the day.

Further reading

1. Milgrom P, Ly K, Rothen M. Research findings on xylitol and the development

Advice for patients: The promotion of agave nectar as a natural and healthy product is unfounded. Its cost is much higher than sugar and there are no advantages in using it instead of sugar.

Agave is a sweetener to avoid as it has negative implications on health outcomes (both general and oral). If used, patients should be advised to maintain optimum oral hygiene through toothbrushing twice daily with fluoridated toothpaste and plaque control measures.

Further reading

1. Stanhope K L, Schwarz J M, Havel P J. Adverse metabolic effects of dietary fructose: results from the recent epidemiological, clinical, and mechanistic studies. *Curr Opin Lipidol* 2013; **24:** 198-206.

3 Stevia[1] (steviol glycosides)

What is it? A sweetener, extracted from the stevia plant. It is 250-300 times sweeter than sugar.

Found in? It can be purchased in granular, tablet and liquid form from supermarkets. Stevia is approved for use in numerous products, for example: sugar-free soft drinks, jams, flavoured milks, yoghurts, cakes, desserts, chocolates and beer. When used as a table-top sweetener, stevia can be mixed with other artificial sweeteners to improve their texture and aftertaste.

Stevia

Stevia can also be found in combination with sugar to reduce the sugar (and calorie) content of products without losing sweetness. For example, Coca-Cola Life and Sprite use stevia. Tate and Lyle produce 'Sugar with Stevia' that is approximately half the calories of pure sugar.

The stability of stevia under high temperatures means it can be useful for cooking.

Effect on general health: Stevia has no calories, no carbohydrates, a glycaemic index of 0 and does not raise blood sugar levels. It is safe to use by diabetics and is also suitable for children, pregnant women and those with allergies.

For those trying to reduce weight it is a useful tool to help cut calories. Replacing six teaspoons of sugar with stevia sweetener provides a 100 kcal reduction. Some products, however, do also contain sugar alongside stevia (see above) so it is important to read ingredient labels carefully to find out whether the product is sugar-free or simply 'reduced'.

Dates

Oral health impact: Stevia is tooth friendly as it does not contain any fermentable carbohydrate.

In a study by Brambilla *et al.*,[2] 20 volunteers rinsed for one minute with sucrose or stevia extract solutions, and plaque pH was measured. After five, ten, 15 and 30 minutes, the sucrose rinse produced a statistically significantly lower pH value compared to the stevia extracts, meaning that more acid was formed with sucrose. The authors conclude that stevia extracts can be considered non-acidogenic and therefore appropriate to support dental health.

Advice for patients: An excellent alternative to sugar, but it's important to check ingredient labels to ensure the sweetness is from only stevia and it is not mixed with a percentage of sugar.

1. Boileau A, Fry J C, Murray R. A new calorie-free sugar substitute from the leaf of the stevia plant arrives in the UK. *Nutr Bull* 2012; **37:** 47-50.
2. Brambilla E, Cagetti M G, Ionescu A, Campus G, Lingström P. An in vitro and in vivo comparison of the effect of stevia rebaudiana extracts on different caries-related variables: a randomized controlled trial pilot study. *Caries Res*; **48:** 19-23.

4 Dates (and other dried fruits)

What is it? Fruit that has been dried to remove water and so concentrates the sugars already present in the fruit. Fruits such as raisins, dates, prunes and apricots are dried in the sun or in heated wind tunnel dryers.

Many fruits such as cranberries, blueberries, mango and pineapple are infused with a sucrose syrup or apple juice and then heated or dried, which further increases their sugar content.

Found in? Available in most shops and supermarkets. The fruit retains much of its original flavour and is widely used by the confectionery, baking, and sweets industries. As ingredients, dried fruits and their juices, purées and pastes impart sweetness and texture and are also often used in home baking.

The raw food trend has seen an increase in the number of products such as cereal bars that contain high proportions of dried fruits. For example products in the Nakd range can contain 49% dates, and 17% raisins with nuts and flavourings.

Effect on general health: Dried fruits are a good source of iron and fibre in the diet. The glycaemic index (GI) of traditional dried fruit is low to moderate (29-62) and the insulin response is proportional to their GI. However, as the sugar content of fruit (mainly fructose) is concentrated when the fruit is dried, they do contain, weight for weight, more sugar than fresh (64 g sugar per 100 g raisins). The key is

©Flowerphotos/Contributor/Universal Images Group/Getty Images Plus

©chengyuzheng/iStock/Getty Images Plus

portion size - a portion of dried fruit is around 30 g (one tablespoon of raisins, three dried apricots). It is, however, easy to overeat dried fruit and so the sugar and calories can add up.

Sulphur dioxide is used in some dried fruits, such as dried apricots, to protect their colour and flavour. Sulphur dioxide, while harmless to healthy individuals, can induce asthma when ingested by sensitive people.

Oral health impact: Dried fruit contains large amounts of fermentable carbohydrate (mainly glucose and fructose) which is detrimental to oral health. The current recommendation from NHS England is to consume dried fruit with a meal and never as a snack due to its 'sticky' nature. This has been challenged in a review by Sadler[1] which suggests that the evidence base is weak and there are positive attributes for dental health, such as the need to chew dried fruits which encourages salivary flow, and the presence of anti-microbial compounds. It must be noted that the review was funded by the California Prune Board.

Advice for patients A good product but should be eaten in moderation. While more work is establishing the extent of the effects of eating dried fruit on teeth, dried fruits and products containing them are best enjoyed as part of a meal , not as a between meal snack. Oral hygiene needs to be maintained.

1. Sadler M J. Dried fruit and dental health. *Int J Food Sci Nutr* 2016; **67:** 944-959.

5 Honey

What is it? Honey is produced by bees.

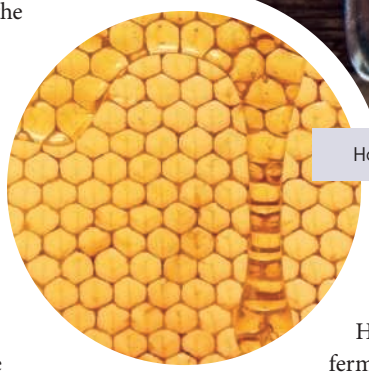
Found in? Available in most shops and supermarkets. The texture and flavour depends on which flowers the bees collect nectar from, but its composition is relatively standard.

Effect on general health: Honey is a sugar and is a mix of glucose and fructose. Although it has a lower glycaemic index than sugar, it is still calorie-containing and has a similar impact on blood sugar levels. For diabetics or those trying to manage blood sugar levels there is no advantage in substituting honey for sugar. It is included in the category of 'free sugars' (alongside table sugar).

Honey is reputed to contain a wide range of minor constituents that act as antioxidants and it also contains anti-bacterial agents. This is why Manuka honey from New Zealand is supposed to be beneficial, but there is insufficient evidence currently to substantiate its use in practical applications. While it certainly has bactericidal properties, the transfer to improvements in clinical conditions is limited. Additionally, table honeys that we buy generally possess lower antibacterial activity than the Medical Grade Honey that is used in research.

Honey (and any products containing it) should never be given to babies under one year. Occasionally honey contains the bacteria that causes infant botulism, which is life threatening.

Syrup



Honey

Oral health impact: Honey is composed of fermentable carbohydrate which is cariogenic.[1]

A recent study examined the antibacterial activity of Manuka honey against plaque-associated bacteria *in vitro* in order to evaluate the potential application as an adjunct to periodontal treatment.[2] It found that Manuka honey is antimicrobial towards some oral bacteria but *Streptococcus mutans*, a key pathogen responsible for dental caries, is most resistant. The authors state that Manuka honey should not be used in the treatment of periodontal disease due to the high concentrations of fermentable carbohydrates and the direct demineralising effect.

Advice for patients: Honey is just another form of sugar and should be consumed in moderation. Oral hygiene needs to be maintained.

1. Bowen W H, Lawrence R A. Comparison of the cariogenicity of cola, honey, cow milk, human milk, and sucrose. *Pediatrics* 2005; **116:** 921-926.

©showcake/iStock/Getty Images Plus

©Ben Monk/DigitalVision/Getty Images Plus

2. Safii S H, Tompkins G R, Duncan W J. Periodontal application of Manuka honey: antimicrobial and demineralising effects in vitro. *Int J Dent* 2017; **2017:** 9874535.

6 Syrup

What is it? A variety of different sugary liquids such as maple syrup, black treacle (molasses), golden syrup, date syrup and pomegranate molasses can fall under this heading. These are produced as by-products of the sugar industry (black treacle, golden syrup), from natural sources (maple syrup is the sap of the maple tree) or made from fruits (dates, pomegranate juice).

Syrup shots used to produce a wide range of flavoured coffee drinks, teas and smoothies, commonly seen in coffee shops in the UK, are most often sugar (sucrose) syrup with added flavourings, although some sugar-free versions are becoming available.

Found in? Available in many shops and health food stores. Some products like maple syrup can be expensive, so cheaper imitations are made out of flavoured high fructose corn syrup (the sweetness commonly used in processed foods and drinks).

The different syrups are used instead of sugar for the different flavours they bring to products like cakes (eg black treacle in gingerbread), biscuits (eg golden syrup in flapjacks) and desserts (eg maple syrup and pancakes). Some products can also be used as a dressing on salad and vegetables, to sweeten stews, to drizzle over yoghurt or porridge, or used in marinades or dips.

©Manuta/iStock/Getty Images Plus

Effect on general health: Some syrups contain iron (black treacle, date syrup) but as they have a strong taste and concentrated sweetness only small amounts are used. This makes their contribution as a source of iron in the diet very limited.

All syrups contain a mixture of glucose, fructose and sucrose in varying proportions, with golden syrup and treacle containing approximately a third sucrose. As a result, if eaten in excess they have the same problems as sugar, ie obesity, diabetes.

Date syrup contains concentrated date sugar (mainly fructose) with the pulp (fibre content) removed. It has been suggested that it has antibacterial effects (similar to honey), but the evidence to date is from laboratory experiments and there have been no trials in humans.

There are claims regarding the benefits of the fruit/tree based syrups due to their antioxidant content, but these are based on the actual fruits and there is no robust evidence base concerning the benefits of the syrups.

Oral health impact: They are all harmful to teeth due to the high levels of fermentable carbohydrates.

Advice for patients: Syrups should be used sparingly for flavour. Oral hygiene needs to be maintained.

7 Yacon syrup (nectar)

What is it? Made from the roots of the Yacon plant, it has a caramel taste and is about half as sweet as honey.

Found in? Available from health food stores and online.

Yacon syrup

©Gary Ombler/Dorling Kindersley/Getty Images Plus

Effect on general health: Yacon syrup is composed of fructo-oligosaccharides (FOS), inulin and a small amount of glucose and fructose.

FOS is a soluble fibre virtually undigested by the human digestive system and by forming a gel, it provides beneficial bulk helping the movement of waste through the intestine.

Both FOS and inulin are prebiotics which means they provide a food source for the fermentation of beneficial bacteria in the gut. These friendly bacteria play a significant role in regulating the immune system, inhibiting the growth of disease-causing bacteria, digesting food and producing valuable vitamins.

Yacon syrup provides only about one third the calories of sugar, but as it is less sweet potentially more may be used. It has a very low glycaemic index, so beneficial in the regulation of blood sugar and insulin levels.

In the popular press it has been claimed to be a new 'miracle food' in weight loss treatment due to its lower calorie content, as

well as its bulky nature making people feel fuller and satisfied. It also increases bowel transit time and increases defecation frequency, which may also play a role. Human trials are so far very limited and evidence is scarce.

If Yacon syrup is taken in excess it can lead to abdominal pain, gas, bloating and diarrhoea. Maximum recommended daily consumption of Yacon syrup is about 20 g per day.

The quantity of beneficial constituents obtained by using Yacon syrup is limited by the amount consumed which means there may be minimal health benefits in everyday use.

Oral health impact: There have been no specific studies on Yacon syrup and oral health in humans. FOS are not cariogenic, but Yakon syrup also contains small amounts of the fermentable carbohydrates glucose and fructose.

There have also been reports of some of the FOS from Yacon being converted to fructose during food processing and when exposed to high temperatures (such as when baking). This increases the potential for cariogenicity.

Advice for patients: The adverse bowel effects of Yakon syrup limits its potential benefits. Although evidence is limited, it seems prudent to advise patients to pay full attention to oral hygiene if they are using the product.

Further reading

1. Caetano B F, de Moura N A, Almeida A P, Dias M C, Sivieri K, Barbisan L F. Yacon (*Smallanthus sonchifolius*) as a food supplement: health-promoting benefits of fructooligosaccharides. *Nutrients* 2016; **8:** pii: E436.

8 Coconut (palm) sugar

What is it? It is made from the sap of the coconut palm tree and looks like brown, granulated sugar. Palm Sugar is similar but made from a different type of palm tree.

Jaggery is a concentrate of date, sugar cane juice and/or palm sap without separation of the molasses. It has a fudge-like consistency and is used extensively by the Asian population (particularly those from India) to sweeten foods, breads and sweets.

All these products are similar and are mainly composed of sucrose (table sugar) with smaller quantities of glucose and fructose. Coconut sugar can contain 70-80% sucrose and jaggery about 50% sucrose.

Found in? Available from shops, health food stores and online.

Effect on general health: Coconut palm sugar (and palm sugar and jaggery) is essentially a fairly pure form of sugar and like ordinary sugar it can contribute to obesity, diabetes and heart disease.

Coconut sugar undergoes little processing so it retains some of the natural vitamins, minerals (notably iron, zinc, calcium and potassium), fibre (inulin) and antioxidants. The nutrients in coconut sugar are likely to have a minimal effect unless you eat large amounts, when any benefit will be outweighed by all the sugar you're eating.

Coconut sugar has the same number of calories as table sugar (16 calories per teaspoon).

Oral health impact: All these products contain high levels of fermentable carbohydrates so are cariogenic.

Advice for patients: Treat these products in the same way as table sugar and use sparingly. Oral hygiene needs to be maintained as they are harmful to teeth.

Coconut (palm) sugar

9 Lactose (milk sugar)

What is it? The sugar found in animal milks and dairy products. It has 20% the sweetness of table sugar.

Found in? As a powder, it is available from health food stores and online. In the pharmaceutical industry, lactose is a filler when forming tablets. It is also used widely by the food manufacturing industry and in home brewing. Lactose is most commonly consumed within milk and dairy products.

The quantity of lactose in animal milks remains similar at about 4.7% lactose, whether the milk is from a cow, goat or sheep and whether it is semi-skimmed or skimmed. Flavoured milks (such as strawberry, chocolate) can have sugary additions.

Effect on general health: If you are lactose intolerant, you cannot digest milk sugars because the body cannot produce the enzymes needed to digest lactose. There are now a number of lactose-free milks available.

Oral health impact: Lactose is a non-fermentable sugar so is not cariogenic and is not harmful to teeth. Milk and the associated dairy foods also tend to be high in protein, calcium and phosphates which help neutralise the effects of acid production which is beneficial to oral health.

©Steve Lupton/Corbis/Getty Images Plus

Dairy products without added sugar or a small piece of cheese can be advised as snacks or as after-meal desserts for positive oral health. It is noted, however, that eating a piece of cheese may not be a practical solution and that this may have a detrimental impact on overall dietary intakes, especially if eaten frequently.

Dairy based foods such as fruit yoghurts may also have free sugars added to sweeten them. On average, three teaspoons of free sugars can be added to a small pot (125 g) of yoghurt. Likewise flavoured milks can contain over 5% sucrose and as such have cariogenic potential.

Advice for patients: Plain milk and dairy based choices with no added sugars, such as

©Michelle Arnold/EyeEm/Getty Images Plus

Lactose (milk sugar)

©James Ross/DigitalVision/Getty Images Plus

natural yoghurt, are the best options to choose. While lactose is not harmful to teeth, patients are often unaware of the additional sugars added to dairy products that can impact on oral health. Oral hygiene should always be maintained.

Further reading

1. Al-Jobair A, Khounganian R. Evaluating the cariogenic potential of flavored milk: an experimental study using rat model. *J Contemp Dent Pract* 2015; **16:** 42-47.
2. Telgi R L, Yadav V, Telgi C R, Boppana N. In vivo dental plaque pH after consumption of dairy products. *Gen Dent* 2013; **61:** 56-59.

'THE POPULATION COULD BE ENCOURAGED TO CONSUME FEWER "SWEET SNACKS AND DRINKS", RATHER THAN SIMPLY REPLACING THOSE CONTAINING SUGAR WITH THOSE CONTAINING ARTIFICIAL SWEETENERS'

10 Sucralose

What is it? Sucralose is an artificial sweetener. Although the name Sucralose ends in -ose, it is not a sugar like fructose or sucrose, so the name is rather misleading. It is a modified form of ordinary sugar (sucrose). It is also known under the E number E955.

Sucralose

Found in? It is commonly found in granular, liquid or mini-tablet form and sold under the trade name of 'Splenda' or as the individual yellow packets of Canderel (not other versions of Canderel as they contain different sweeteners).

Sucralose-based products are in a broad range of lower-calorie foods, including table top sweeteners, fizzy drinks, chewing gum, baking mixes, breakfast cereals and salad dressings.

Effect on general health: Sucralose itself contains no calories but because it is very sweet (approximately 600 times as sweet as sugar), sucralose in the granulated format is often mixed with other sweetening ingredients such as maltodextrin. This dilutes its intense sweetness and provides volume and texture. These, however, are not calorie-free, so a teaspoon contains about 2-4 calories. This is about 20% of the calories of sugar which the granulated product is intended to replace.

The claim that 'Sucralose has less of an impact on blood glucose than sugar' has been validated by the European Food Safety Authority.[1]

Oral health impact: Sucralose has no effect on tooth decay (again validated by EFSA[1]). Any other sweetening ingredients included in the Sucralose-based table top sweeteners are not harmful to teeth. Sucralose is commonly found in oral health products, such as chewing gum.

Advice for patients: Sucralose is one of many artificial sweeteners that can be used as an alternative to sugar. These can be useful for weight reduction and for helping diabetics reduce their sugar intakes. Sucralose is not cariogenic, but, as always, good oral hygiene should be maintained.

As part of a healthy diet, the population as a whole could also be encouraged to consider consuming fewer 'sweet snacks and drinks', rather than simply replacing those containing sugar with those containing artificial sweeteners.

1. European Food Safety Authority (EFSA). Scientific Opinion on the substantiation of health claims related to the sugar replacers xylitol, sorbitol, mannitol, maltitol, lactitol, isomalt, erythritol, D-tagatose, isomaltulose, sucralose and polydextrose and maintenance of tooth mineralisation by decreasing tooth demineralisation and reduction of post-prandial glycaemic responses pursuant to Article 13(1) of Regulation (EC) No 1924/20061. *EFSA J* 2011; **9:** 2076. Available from: http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2011.2076/epdf (accessed September 2017).

©adventtr/iStock/Getty Images Plus

Find out more about the British Dietetic Association at: www.bda.uk.com

BDA The Association of UK Dietitians

CPD questions

This article has four CPD questions attached to it which will earn you one hour of verifiable CPD. To access the ***free*** *BDA CPD hub, go to* ***http://bit.ly/2e3G0sv***

bdjteam2017156

‘Have you packed your toothbrush?’

Few people planning trips abroad consider a dental check-up before they go, says **Sandra Grieve**.[1] What help and advice can dental professionals provide?

Travelling abroad

When people are travelling abroad from the UK, especially to rural or remote locations, they may seek advice on immunisations. However, they often fail to consider a dental check-up before they go.

When you Google ‘dental health of travellers’ you get thousands of hits referencing the Gypsy/Traveller population. Similarly, a search on ‘dental health of travellers abroad’ focusses on people going abroad for dental treatment, ie ‘Medical Tourism’, a growth industry, particularly for dentistry in Eastern Europe.[1] A literature review saw this as an area of increasing travel.[2] High costs in the UK private sector and limited availability in the public sector together with low costs in Eastern Europe were cited as the motivation.

In spite of global insecurity and Brexit uncertainties, travellers from the UK made 70.8 million visits abroad in 2016, travelling for a variety of reasons, mostly for holidays.[3] Europe is the top destination with Spain and France the most popular. Cruising, eco-tourism and ‘micro-adventures’ to remote areas are increasingly popular.[4] More direct flights from the UK to, for example, Chile and Vietnam, have made long-haul travel more accessible and affordable.

Travel health services

Most travel health services in the UK are provided in general practice settings and delivered by nurses. Private travel clinics are increasingly common, many led by pharmacists. Delivering travel health advice is becoming more complex. Age is no barrier and with travellers of all ages looking to experience different countries and cultures, an individual pre-travel risk assessment is essential.[5] This is an in-depth evaluation, exploring the individual, their itinerary and potential health risks. Identifying pre-existing medical conditions or disabilities is important especially if activities are to be undertaken in a remote destination far from medical assistance, importantly for solo travellers. Vaccination advice is important but a wider conversation needs to be had and tailored advice offered.

Travel associated disease

Schlagenhauf *et al.* identified sex and gender differences in travel associated disease.[6] Men and women presented with different profiles of travel-related morbidity: women were proportionally more likely than men to present with oral and dental conditions.

Major sporting events encourage people to visit countries they’d never otherwise consider, for example the 2018 FIFA World Cup in Russia, where there are 11 match destinations, some with vast distances between them.[7] Student and volunteer groups often work in remote locations with little or no access to medical facilities. Sending agencies, for example Voluntary Services Overseas (VSO), will assess the risk for their groups but unidentifiable providers on the Internet may offer wrong, or no advice.

Travel kits

Commercial medical kits from basic to advanced are widely available and can be customised to specific needs. General kits may fail to mention or include how to deal with dental emergencies, although specific dental kits are available. Toothache, losing a filling or a crown during an expedition is likely to cause misery for the individual and can lead to travel disruption for the extended group. For adventurous travellers going off the beaten track carrying a comprehensive medical kit is recommended. Such travellers would be advised to have a pre-departure dental check-up but if travel is imminent this may not always be practical or possible. More serious oral or dental emergencies may require hospital treatment abroad. If the destination is a resource-poor country where blood-borne viruses are endemic and skills, equipment and hygiene lacking, there is a risk of more serious harm, eg Hepatitis B, Hepatitis C or HIV infection. Travelling to a reputable centre or returning home may be indicated.

[1] *Sandra Grieve RGN RM BSc (Hons) Dip. Trav. Med. FFTM RCPS(Glasg) is an Independent Travel Health Specialist Nurse and RCN Public Health Forum Committee member for travel health.*

Treatment costs incurred abroad can be high. Comprehensive travel insurance covering repatriation is essential for all travellers and is the individual's responsibility. The Foreign & Commonwealth Office (FCO) provides advice (FCO Travel Aware).[8]

How can dental team staff help?

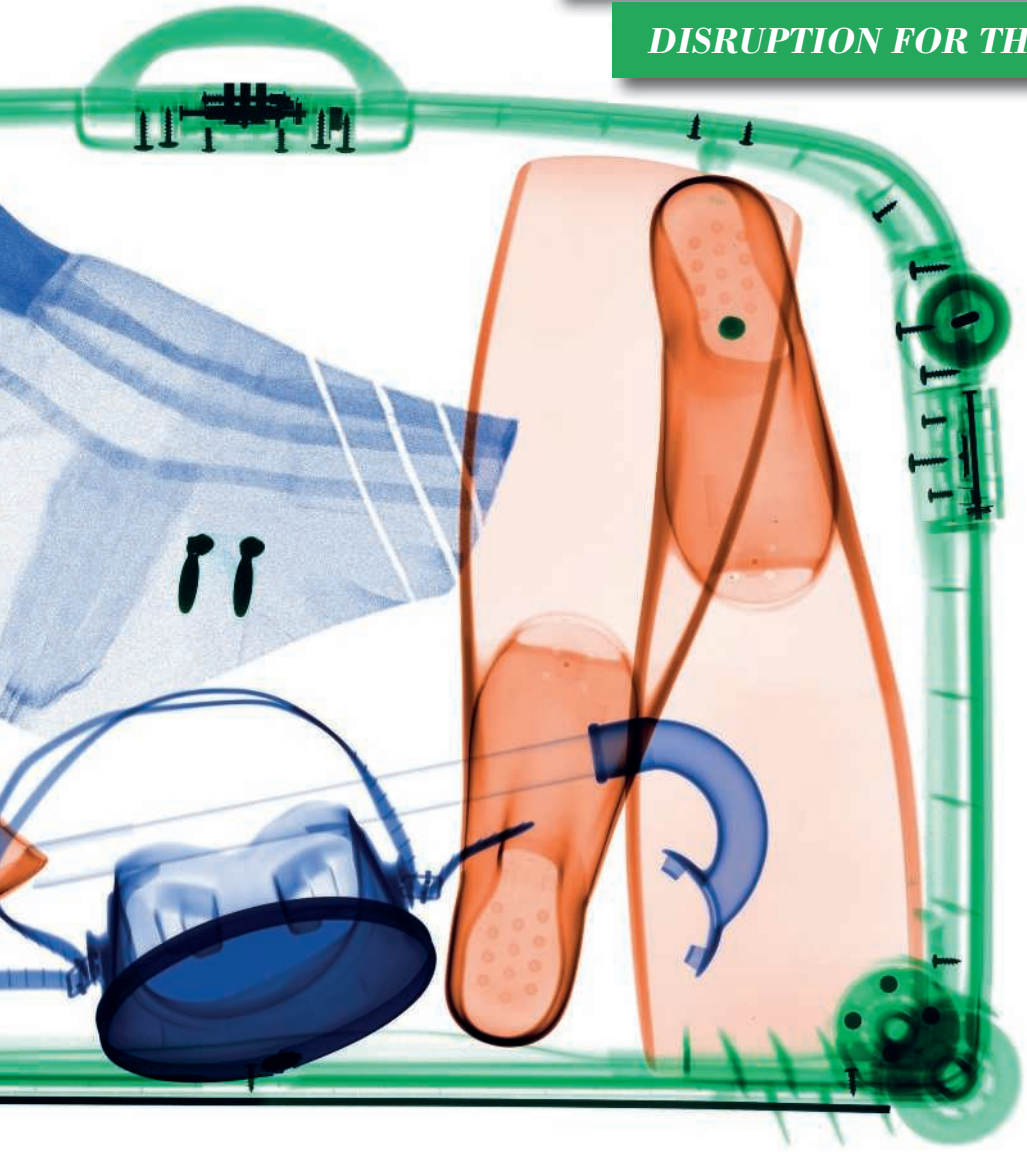
Dental teams can provide help and advice to individuals planning to travel abroad in a number of ways:

- Raising awareness of the importance of having a dental check-up before travelling abroad
- Posters and leaflets in the waiting room and through sending e-messages
- Opportunistic conversations about possible travel plans
- Advising local school/university groups going on foreign field trips
- Reminding patients about taking out comprehensive insurance for trips abroad, ensuring dental health provision is included
- Ask patients to consider carrying a dental kit overseas
- Consider holding a few dental travel kits for purchase
- Recommend websites for information on dental health abroad.

A neglected area

Dental health would appear to be a somewhat neglected area for overseas travellers. Information is sparse and mostly related to expedition medicine. Even those with medical experience in this area may not be familiar with or adept at treating dental problems. As prevention is key, alerting travellers to the possibility of a dental problem during their travels and how to deal with it will go a long way to making their trip problem free and may limit the risk of more serious health problems.

'TOOTHACHE, LOSING A FILLING OR A CROWN DURING AN EXPEDITION IS LIKELY TO CAUSE MISERY FOR THE INDIVIDUAL AND CAN LEAD TO TRAVEL DISRUPTION FOR THE EXTENDED GROUP.'



1. NHS Choices. Dental treatment abroad. Available at: http://www.nhs.uk/Livewell/Treatmentabroad/Pages/Dentistryabroad.aspx (accessed September 2017).
2. Hanefield J, Smith R, Horsfall D, Lunt N. What do we know about medical tourism? A review of the literature with discussion of its implications for the uk national health service as an example of a public health care system. *J Travel Med* 2014; **21:** 410-417.
3. Office for National Statistics. Travel trends: 2016. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/articles/traveltrends/2016 (accessed September 2017).
4. ABTA Travel Trends Report 2017. Available at: https://abta.com/assets/uploads/general/ABTA_Travel_Trends_Report_2017.pdf (accessed September 2017).
5. Chiodini J, Boyne L, Stillwell A, Grieve S. *Travel health nursing: career and competence development, RCN guidance*. London: RCN, 2012. Available at: https://www.rcn.org.uk/professional-development/publications/pub-003146 (accessed September 2017).
6. Schlagenhauf P, Chen L H, Wilson M E *et al.* Sex and gender differences in travel-associated disease. *Clin Infect Dis* 2010; **50:** 826-832.
7. Foreign & Commonwealth Office. Be on the Ball: World Cup 2018. Guidance and tips for fans travelling to the 2018 FIFA World Cup in Russia. 23 June 2018. Available at: https://www.gov.uk/guidance/be-on-the-ball-world-cup-2018 (accessed September 2017).
8. FCO Travel Aware Campaign. Preparing for safe and healthy travel abroad. Available at: https://travelaware.campaign.gov.uk/ (accessed September 2017).

©Nick Veasey/Untitled X-Ray/Getty Images Plus

bdjteam2017157

Medical emergencies: anaphylaxis

Emma Hammett[1] provides an up to date guide on anaphylactic shock and acute allergic reaction.

What is an allergic reaction?

Anaphylactic shock is an extreme allergic reaction. Allergic reactions occur because the body's immune system reacts inappropriately in response to the presence of a substance that it wrongly perceives as a threat. In order to develop an allergic response the body has to be exposed to something in order to trigger the immune response – this can be touched, inhaled, swallowed or injected – during a routine vaccination or by an insect sting.

The body doesn't react to the irritant directly, but reacts to the histamine released by cells damaged through the immune response on subsequent exposure.

Everyone makes IgE, but people with allergies produce more of it. When someone with an allergic predisposition is initially exposed to an allergen, they produce a lot of IgE antibodies that bind to the mast cells in the tissues or basophils in the blood. When the IgE line up next to each other, the reaction affects the membrane and causes the cell to break down (degranulation). The breaking down of these cells releases histamine and other chemicals. Histamine dilates blood vessels and makes them more permeable so that they lose fluid causing swelling in the tissues.

This mechanism is so sensitive that minute quantities of the allergen can cause a reaction. The released chemicals act on blood vessels to cause the swelling in the mouth and anywhere on the skin. There is a fall in blood pressure and in asthmatics the effect may be mainly on the lungs, causing a severe asthma attack which their inhaler is unable to help.

We have small amounts of histamine in our system normally and it is important for various vital functions of the body including regulating stomach acid and as a neurotransmitter in our nerve cells. However, larger amounts of histamine being released leads to symptoms such as sneezing, blocked nose, itching… the sort of symptoms often associated with hayfever and mild allergies. Antihistamine medication can work effectively at resolving these symptoms. However, antihistamine medication typically takes around 15 minutes to work.

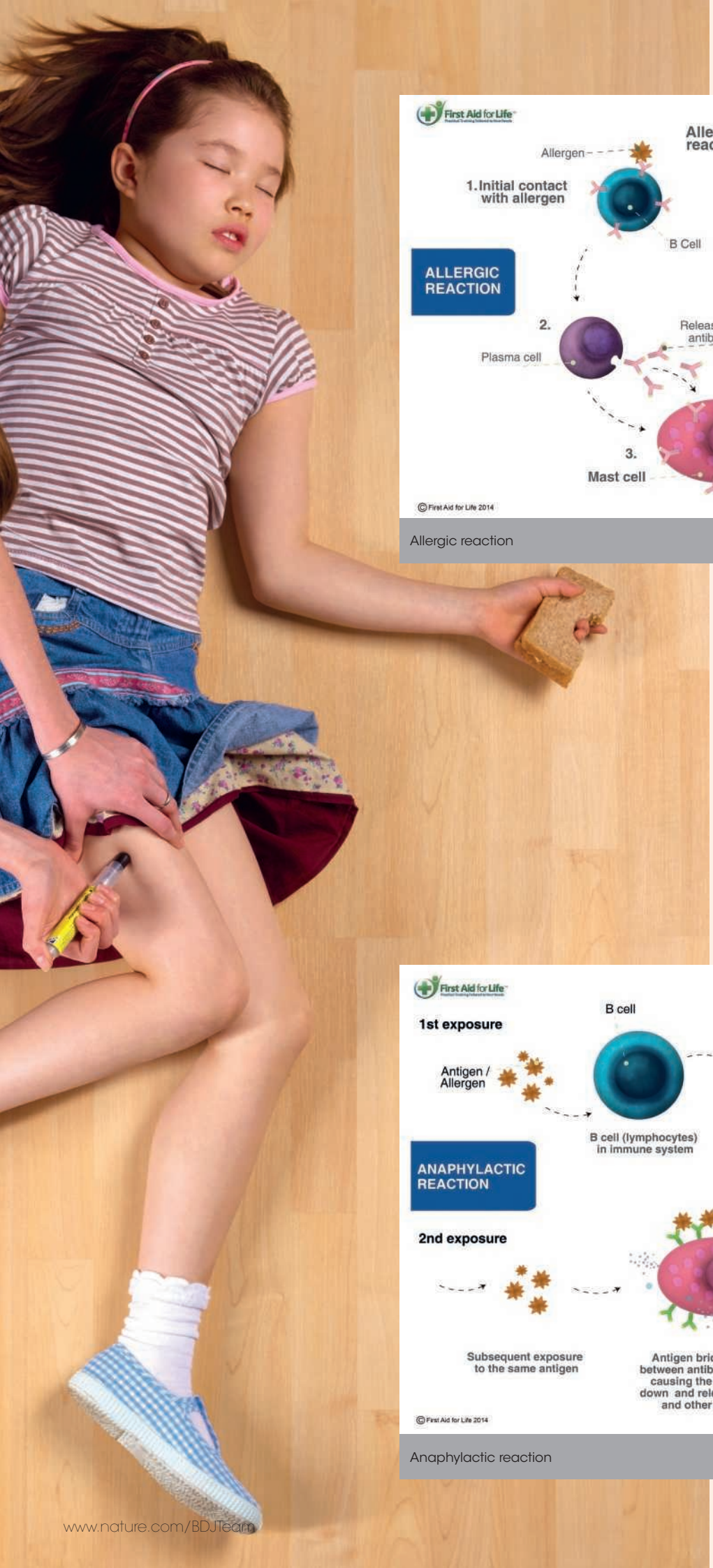
Life threatening and systemic allergic reactions are caused by the body producing

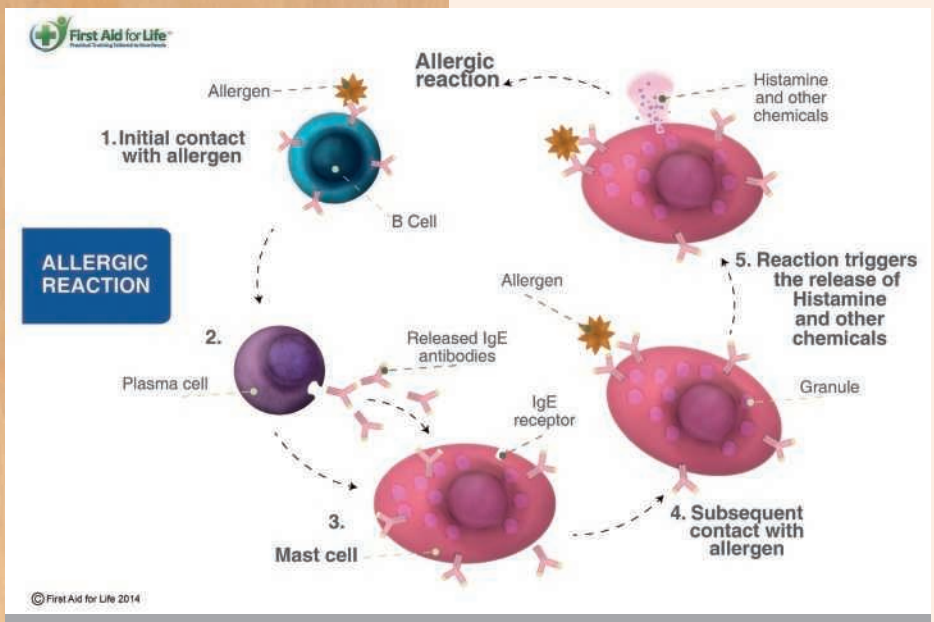
---

[1] *Emma Hammett RGN of First Aid for Life is an experienced nurse, trainer, first aid expert and published writer. Emma provides the information in this article for guidance and it is not in any way a substitute for medical advice. First Aid for Life is not responsible or liable for any diagnosis made, or actions taken based on this information.*

Emma says: 'First Aid for Life is an Award Winning and fully regulated first aid training provider and our trainers are highly experienced medical and emergency services professionals. We run practical courses for medical professionals throughout London: training in Emergency Life Support, choking, fitting, anaphylaxis and AED. Our training is always tailored to the needs of those attending and we are more than happy to cover any additional medical concerns as well. The course qualifies as verifiable CPD. We also have online first aid courses to update and refresh knowledge between the practical training.' http://www.firstaidforlife.org.uk emma@firstaidforlife.org.uk Tel: 020 8675 4036

©Peter Dazeley/Photographer's Choice/Getty Images Plus



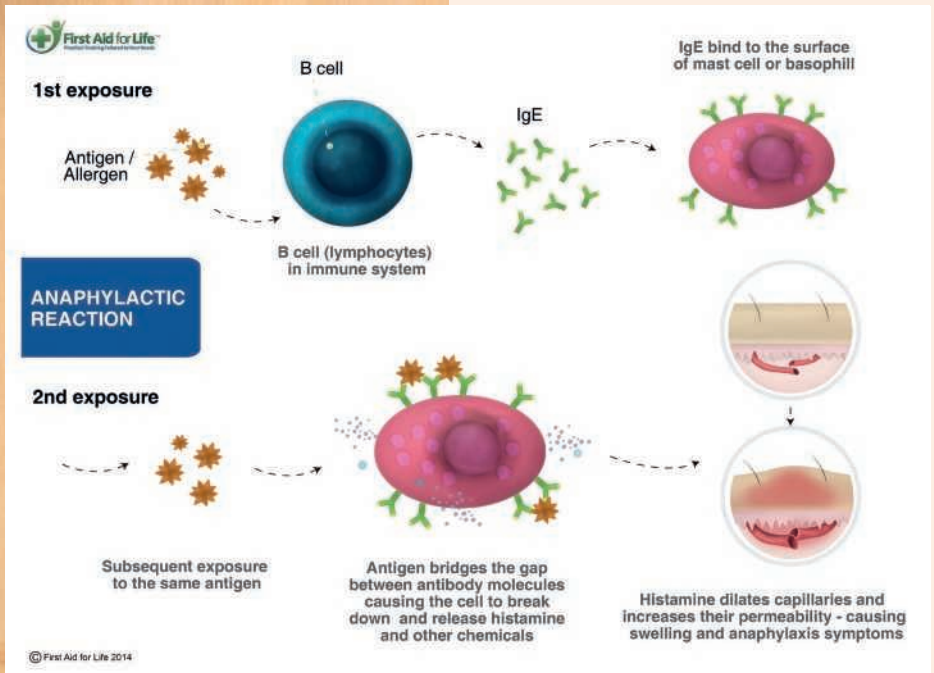


Allergic reaction

even more histamine, which dilates small blood vessels and causes them to leak, resulting in swelling in areas such as the lungs – leading to breathing problems. Sufferers may have a rash and be flushed due to the increased blood supply to the skin. Their blood pressure could drop dramatically and they may collapse.

The more times someone is exposed to the substance they react to, the quicker and more severe the reactions may be.

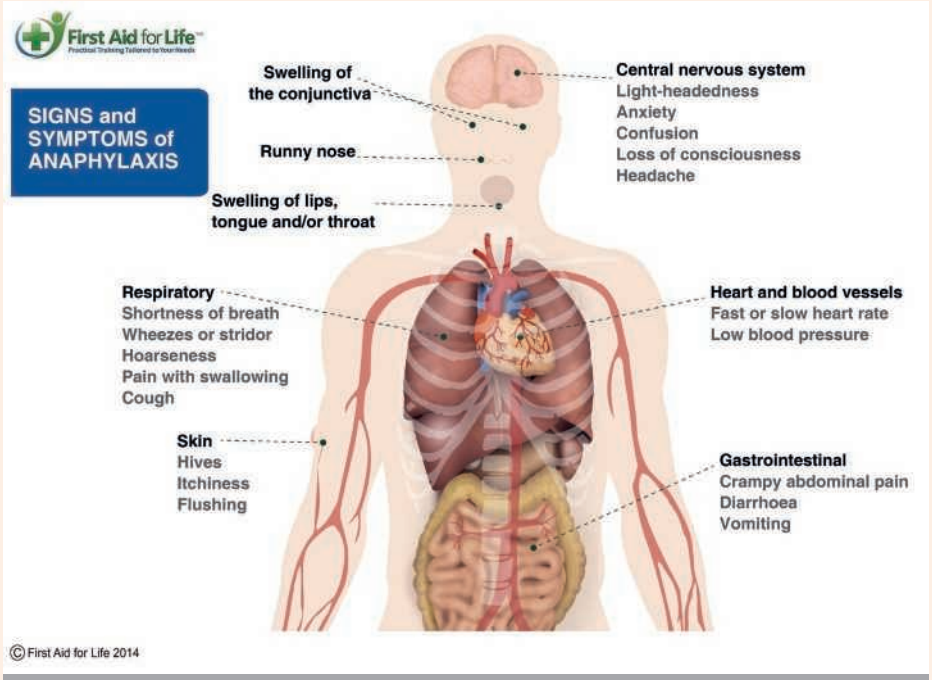
If they don't have a rash associated with the symptoms, it could still be an anaphylactic reaction. If they have a rapid onset of symptoms and may have been exposed to an allergen, treat as an anaphylactic reaction.



Anaphylactic reaction

Common anaphylaxis triggers

'PEOPLE WHO HAVE REACTED ONE WAY WHEN EXPOSED TO A PARTICULAR ALLERGEN CAN REACT COMPLETELY DIFFERENTLY ON ANOTHER OCCASION TO THE SAME THING.'



Signs and symptoms of anaphylaxis

Common triggers for reactions

Individuals can react to absolutely anything. However, most common causes include foods such as those below:

- Peanuts
- Tree nuts (eg almonds, walnuts, cashews, and Brazil nuts)
- Sesame
- Fish
- Shellfish
- Dairy products
- Eggs.

Non-food causes include:

- Wasp or bee stings
- Natural latex (rubber)
- Penicillin or any other drug or injection
- Exercise can also trigger a delayed allergic reaction following exposure to an allergen.

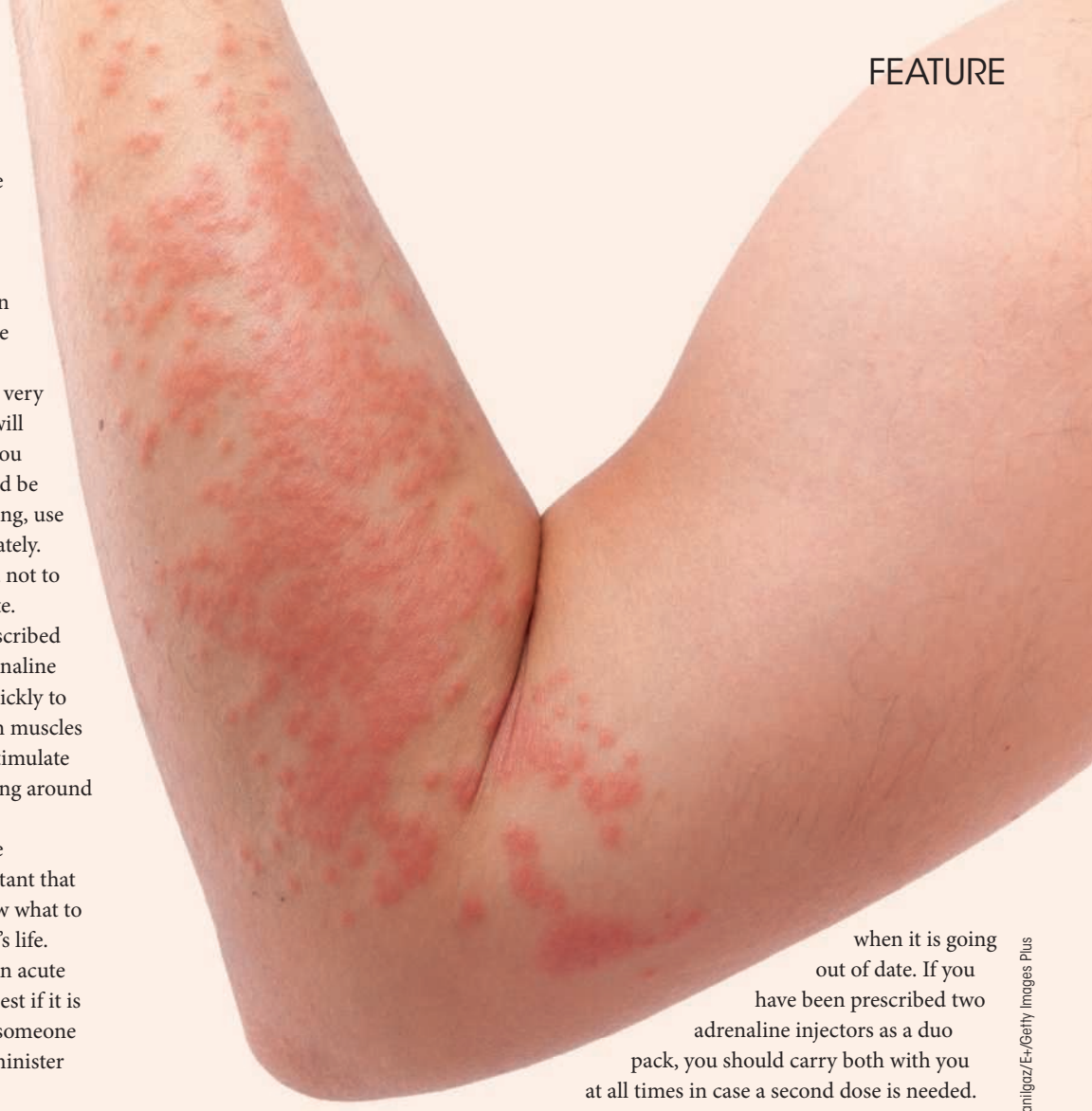
How to recognise an acute allergic reaction

A reaction can take many forms and people who have reacted one way when exposed to a particular allergen can react completely differently on another occasion when exposed to the same thing. It is therefore extremely difficult to predict what a reaction might look like. The above picture is a very classic reaction and easily recognisable as anaphylactic shock.

Common symptoms include:

- Generalised flushing of the skin
- A rash or hives anywhere on the body
- A feeling of anxiety or 'sense of impending doom'
- Swelling of throat and mouth and difficulty in swallowing or speaking
- Alterations in heart rate – usually a speeding up of the heart
- Severe asthma attack which isn't relieved by their inhaler
- Acute abdominal pain, violent nausea and vomiting
- A sudden feeling of weakness followed by collapse and unconsciousness.

©susandaniels/E+/Getty Images Plus



©gokhanilgaz/E+/Getty Images Plus

A patient is unlikely to experience all of the above symptoms.

How to treat anaphylaxis

The key advice is to avoid any known allergens if at all possible. If someone is having a mild allergic reaction, an antihistamine tablet or syrup can be very effective. However, the medication will take at least 15 minutes to work. If you are concerned that the reaction could be systemic (all over) and life-threatening, use an adrenaline auto-injector immediately. It is far better to give adrenaline and not to have needed it, than to give it too late.

Adrenaline auto-injectors are prescribed for those believed to be at risk. Adrenaline (also known as epinephrine) acts quickly to constrict blood vessels, relax smooth muscles in the lungs to improve breathing, stimulate the heartbeat and help to stop swelling around the face and lips.

Acute allergic reactions can be life threatening and it is crucially important that you recognise the problem and know what to do quickly in order to save someone's life.

Adrenaline is the first choice for an acute anaphylactic reaction and it works best if it is given as soon as you recognise that someone is having a reaction. You should administer the injector, or help the sufferer to administer it themselves, as quickly as possible and call for an ambulance stating clearly that the person is having an acute anaphylactic reaction.

'ACUTE ALLERGIC REACTIONS CAN BE LIFE THREATENING AND IT IS CRUCIAL THAT YOU RECOGNISE THE PROBLEM AND KNOW WHAT TO DO IN ORDER TO SAVE SOMEONE'S LIFE.'

Adrenaline should rapidly treat all of the most dangerous symptoms of anaphylaxis, including throat swelling, difficulty breathing, and low blood pressure. However, the patient is likely to need additional medication in hospital to control the reaction.

Adrenaline is metabolised very quickly – it is very important that you call an ambulance as soon as an auto-injector has been given as its effects can wear off within about 15 minutes. Another injector can be given 5-15 minutes after the first if necessary.

Phone for an ambulance.

How to use an adrenaline auto-injector

Types of auto-injectors

There are currently three makes of adrenaline auto-injectors on the market in the UK: Epipen, Jext and Emerade. They all contain adrenaline and are all given in a similar manner. Epipen is by far the most popular in the UK.

More information:
http://www.epipen.com/
http://www.jext.co.uk/
http://www.emerade.com/adrenaline-auto-injector

If you are prescribed an adrenaline auto-injector you should carry it with you at all times and register to receive a reminder when it is going out of date. If you have been prescribed two adrenaline injectors as a duo pack, you should carry both with you at all times in case a second dose is needed. Those with adrenaline injectors should teach friends and family what to do if they need to help them or someone else having an anaphylactic reaction.

Videos showing how to use adrenaline auto-injector are available on the drug company websites:

http://www.youtube.com/watch?v=CjgbwmQy2r8 – shows how to use a Jext auto-injector

http://www.youtube.com/watch?v=pgvnt8YA7r8 shows how to use an Epipen.

Hold the injector in your dominant hand; with the other hand remove the safety cap. Put the injector firmly into the upper outer part of the casualty's thigh and hold it there for ten seconds. Remove it carefully and they should begin to feel better quite quickly. If they continue to get worse, you may need to give another injection.

The auto-injector can be given through clothes.

Always phone an ambulance.

Medical professionals and anaphylaxis administration

Medical professionals are generally encouraged to draw up adrenaline rather than use auto-injectors if they feel confident

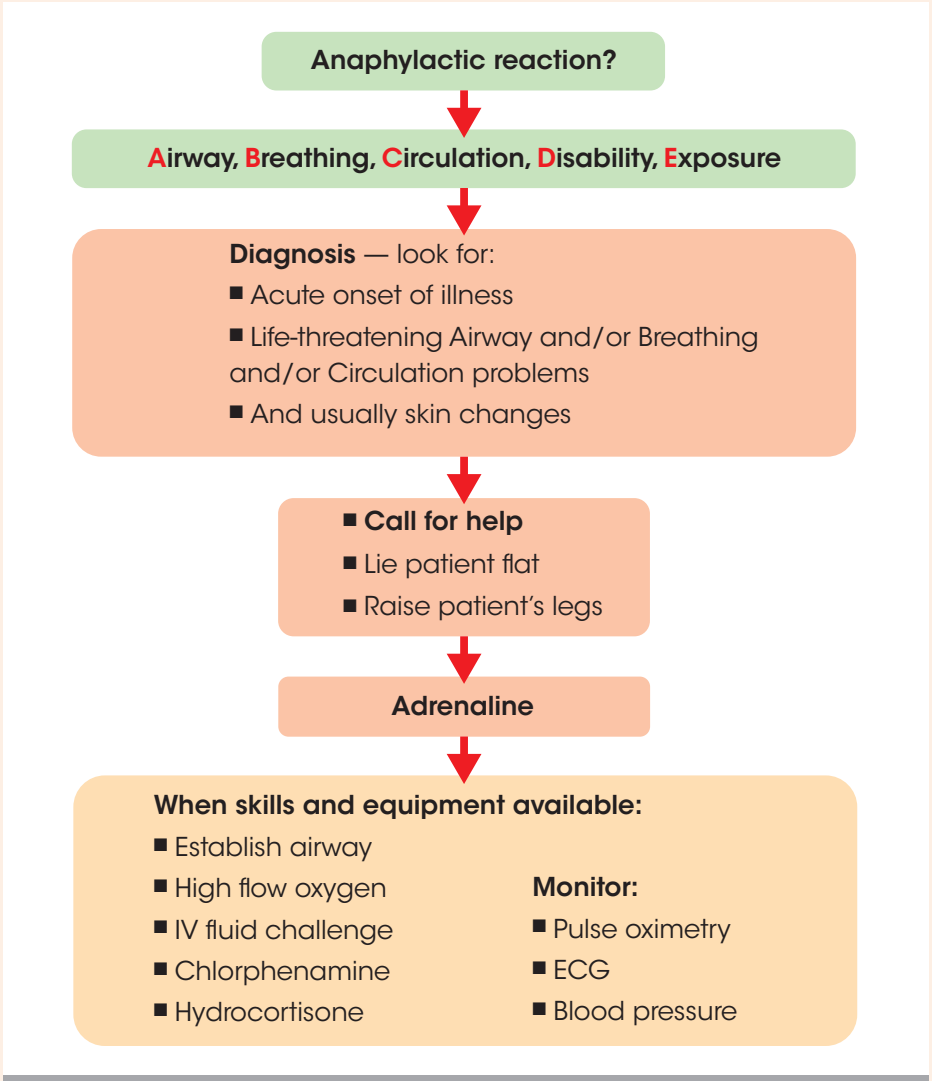


Fig. 1 Anaphylactic reaction algorithm, with thanks to the Resuscitation Council (UK)[1]

and competent to do so. The key steps for the treatment of an anaphylactic reaction are shown in the algorithm from the Resuscitation Council (UK) in Figure 1.[1]

Adrenaline dosage if drawing up

Adrenaline (give IM)
IM doses of 1:1000 adrenaline (repeat after five minutes if no better)

- Adult 500 micrograms IM (0.5 mL)
- Child more than 12 years: 500 micrograms IM (0.5 mL)
- Child 6-12 years: 300 micrograms IM (0.3 mL)
- Child less than six years: 150 micrograms IM (0.15 mL).

The incidence of acute severe anaphylaxis following a vaccination is extremely rare: about 1:1 million.

Patients with an allergy to egg or gelatine may be more likely to react to the flu vaccine and other vaccines containing derivatives of these substances.

The preferred needle length for an IM injection

A standard blue needle (25 mm and 23 G) should be used to inject intramuscular adrenaline.

The best site for an intramuscular injection of adrenaline for the treatment of an anaphylactic reaction is the anterolateral aspect of the middle third of the thigh. The needle needs to be long enough to ensure that the adrenaline is injected into muscle. The current Resuscitation Council (UK) guidance states that a 25 mm length needle is best and suitable for all ages.

In the UK, a standard blue needle (25 mm and 23 G) is therefore best. In obese patients a longer needle may be needed (38 mm length).

The standard orange needle that is most commonly available in the UK is only 16 mm in length. This shorter length needle can result in injecting the adrenaline subcutaneously. A 25 mm length orange needle is less commonly available.

The decision to use ampoules or an auto-injector

The Resuscitation Council (UK) guidance on anaphylaxis is aimed at healthcare professionals and does not recommend the use of auto-injectors by this group for several reasons such as shelf life, needle length, cost, and dose.

The decision whether to use Emerade adrenaline auto-injector (a brand of auto-injector with a 0.5 dosage and a longer needle option), or an ampoule, needle and syringe is a local decision. The decision should factor in the ease of implementation and the likelihood of anaphylaxis.

Resuscitation Council advice concerning the length of time patients should be observed following immunisation

The Department of Health guidance on this issue[2] does not state a specific time but does not recommend long periods of observation. The risk of severe life-threatening reactions after immunisation is extremely small. This rate in the UK (approximately one per million vaccine doses) is similar to that reported from other countries.[3]

Based on the information available a short period of observation (5-10 minutes) should be used to detect immediate problems. Patients (and carers) should be provided with advice on possible local and systemic reactions and what to do if they occur.

In *Immunisation against infectious disease - 'The Green Book'* (2006),[2] the Department of Health states:

[Chapter 4, Immunisation procedures]: 'Recipients of any vaccine should be observed for immediate ADRs. There is no evidence to support the practice of keeping patients under longer observation in the surgery.'

[Chapter 8, Vaccine safety and the management of adverse events following immunisation]: 'Onset of anaphylaxis is rapid, typically within minutes, and its clinical course is unpredictable with variable severity and clinical features. Due to the unpredictable nature of anaphylactic reactions it is not possible to define a particular time period over which all individuals should be observed following immunisation to ensure they do not develop anaphylaxis.'

Patient positioning for anaphylaxis

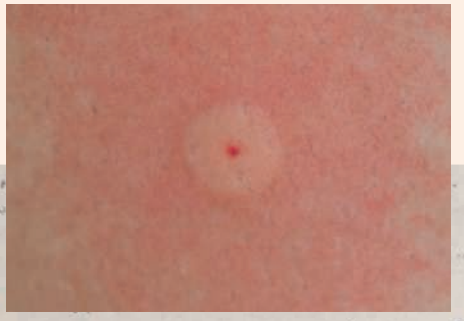
Someone suffering from acute anaphylaxis is also likely to be showing signs of clinical shock. Reassuring the casualty and positioning them appropriately can make a major difference to their treatment. They should also be kept warm and dry.

If someone is very short of breath, they should be encouraged to sit in an upright position to help their breathing; putting something under their knees to help increase their circulation can be very helpful – into the 'lazy W' position.

If they are not having difficulty breathing, but are feeling sick, dizzy and could be going into shock – they should lie down with their legs raised to help increase the circulation to their vital organs. Encourage them to turn their head to one side if they are likely to vomit. They should be covered to keep them warm and kept in this position until the paramedics arrive.

Do not get them up until they have been medically assessed.

Treat for shock if the patient is showing symptoms of shock and is not having breathing problems.



Top photo: A bee sting; Above: Adrenaline autoinjectors

After an anaphylactic reaction

An ambulance should always be called if someone is showing the signs of anaphylaxis and they will usually be admitted overnight for observation. This is because some people have a second reaction some hours after the first.

Don't forget to replace the used adrenaline auto-injector.

Storage of auto-injectors

Auto-injectors should be quickly and easily accessible and stored in a suitable container (specifically designed containers are available from the relevant drug companies).

The container should be clearly marked with the patient's name and include an instruction leaflet on how to use the adrenaline auto-injector and the patient's personal treatment plan should also have been read by all relevant staff and be easily accessible should it be needed.

Auto-injectors should be stored at room temperature and kept away from direct sunlight.

Make sure that the expiry date is adhered to – auto-injectors have a relatively short shelf life and once they have expired the adrenaline content diminishes. If the auto-injector is registered with the appropriate drug company they will send automatic email and text alerts to warn when the adrenaline injector is about to expire.

Legislation concerning the administration of adrenaline in a life threatening emergency

'Medicines legislation restricts the administration of injectable medicines. Unless self-administered, they may only be administered by or in accordance with the instructions of a doctor (eg by a nurse). However, in the case of adrenaline there is an exemption to this restriction which means in an emergency, a suitably trained lay person is permitted to administer it by injection for the purpose of saving life. The use of an Epipen to treat anaphylactic shock falls into this category. Therefore, first aiders may administer an Epipen if they are dealing with a life threatening emergency in a casualty who has been prescribed and is in possession of an Epipen and where the first aider is trained to use it.' Health and Safety Executive Guidance, 25 January 2008

Useful links

The Anaphylaxis Campaign: http://www.anaphylaxis.org.uk/

First Aid for Life: http://www.firstaidforlife.org.uk

1. Resuscitation Council (UK). Emergency treatment of anaphylactic reactions. Guidelines for healthcare providers. January 2008, annotated with links to NICE guidance July 2012. Available at: https://www.resus.org.uk/anaphylaxis/emergency-treatment-of-anaphylactic-reactions/ (accessed September 2017).
2. Department of Health. *Immunisation against infectious disease - 'The Green Book'* 2006, modified 2008. Available via: https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book (accessed September 2017).
3. Bohlke K, Davis R L, Marcy S M *et al.* Risk of anaphylaxis after vaccination of children and adolescents. *Pediatrics* 2003; **112:** 815-820.

'AFTER TREATING SOMEONE FOR AN ANAPHYLATIC REACTION DON'T FORGET TO REPLACE THE USED ADRENALINE AUTO-INJECTOR.'

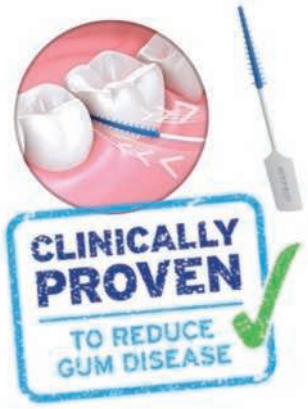
bdjteam2017158

©Krugrace-kanoksak/iStock/Getty Images Plus

Product news

Product news is provided as a service to readers using text and images from the manufacturer, supplier or distributor and does not imply endorsement by *BDJ Team*. Normal and prudent research should be exercised before purchase or use of any product mentioned.

CLEANING BETWEEN TEETH FOR OVER 200 YEARS



Do you recommend the Wisdom Clean Between Rubber Interdental Brushes to your patients?

Wisdom Toothbrushes has been a trusted brand for oral health solutions for more than 235 years. Among the highlights of its portfolio are the Wisdom Clean Between Rubber Interdental Brushes, which are clinically proven to reduce gingival disease.

Speak to the team at the BSDHT Oral Health Conference and Exhibition to find out how the flexible, tapered brushes provide an effective yet comfortable interdental clean. They'll show how the super soft micro-fine rubber filaments slide easily between the teeth and why the wire-free brushes are perfect for patients who have previously found wire interdental brushes difficult or uncomfortable to use.

You'll also discover the new Proflex Interdental Brushes with a unique, flexible neck and curved handle. Improving access to all areas of the mouth while reducing pressure on the wire for extended product life, these brushes ensure a comfortable patient experience.

Plus, don't miss the opportunity to find out more about the Wisdom Super Slim Interspace Brush, Wisdom Clean Between Easy Slide Y Shaped Floss with PTFE tape, the Wisdom Easy Flosser with PTFE tape and the Wisdom Interproximal Brush.

Visit www.wisdomtoothbrushes.com or call 01440 714800.

CREATE AN EXCEPTIONALLY DRY SALIVA FIELD

We all want our patients to feel comfortable and secure when they enter our practice. The real test of ensuring their comfort comes when they take their seat in the dental chair.

In addressing the issue of saliva control during treatment, NeoDrys Saliva Absorbents ensure a more relaxing environment for your patient and an exceptional working area for you. Say goodbye to awkward fitting cotton absorbents; the super absorbent core creates an exceptionally dry field and protects from parotid saliva contamination with control of up to 15 minutes.

NeoDrys Saliva Absorbents, available exclusively from Dental Express, a trading division of Surgery Express LLP, are also ideal to treat patients who find dental treatment uncomfortable because of a pronounced gag reflex.

Available in large and small sizes, NeoDrys Saliva Absorbents are also available with reflective backing to assist you in your intraoral procedures. There is no danger of distracting leakage during treatment.

Take saliva control in hand with NeoDrys Saliva Absorbents, and discover why it outperforms all other absorption products on the market. Visit www.dental-express.co.uk or call 0800707 6212.

EASY, EFFECTIVE PROPHYLAXIS

Young Dental, the product line for professional dental cleaning, presents new polishing cups, disposable prophy angles as well as pastes for polishing and the removal of discolorations. They are so effective thanks to the remarkable efficiency of baking powder, an excellent brightening effect, a neutral pH value and they are less abrasive than comparable products.

The 'Mint' and 'Berry' flavoured pastes are vegan, as well as sugar and gluten free. They are available in colourful single doses and are therefore easy to identify. The accompanying, sterilisable holder simplifies holding the paste while polishing.

Disposable Prophy Angles by Young Dental make dental polishing more convenient because they have a small, round head and are designed to be particularly narrow, granting the therapist greater visibility and accessibility. The single-use products reduce the risk of infection and save time and costs as no sterilisation or preparation is required and the handpiece is less susceptible to wear and tear. The two-coloured DPAs in the Elite Cup and Petite Web Cup designs, either in straight design or with ergonomic 17 degree contrangle, help to reduce muscle fatigue.

The Young Dental Prophy Cups are made of special in-house rubber, offering greater flare, reducing splatter and helping achieve an excellent polishing result. The two-coloured cups come in various lengths and degrees of hardness, from firm to extra soft. They are free from latex and available with either a latch/RA or screw type attachment. Five different designs are offered, so that the user can meet patients' individual requirements. The Elite-Cup also has additional external ridges, which aid in the polishing of the interdental spaces. The cups are individually blister packed to avoid cross-contamination.

www.youngdental.eu

KILL 99.9999% OF PATHOGENS

Are you looking for a comprehensive range of top quality cleaning and disinfectant products you can trust to protect your team and your patients from harm? Then look no further than the new Steri-7 Xtra range from Initial Medical.

A breakthrough in the fight against infection, this innovative solution will kill 99.9999% of a huge array of pathogens, including *Clostridium difficile*, *E.Coli*, Hep C, HIV, Influenza, Legionella, MRSA Mycobacterium terrae (TB), Norovirus, Parvovirus, Salmonella and Streptococcus, to name but a few.

The Steri-7 Xtra High Level Surface Disinfectant Cleaner is available as a concentrate solution, a ready to use spray and as a surface wipe. Totally non-corrosive, it is suitable for use on nearly all surface materials.

The Steri-7 Xtra Personal Care Range includes a dermatologically tested, clinical grade hand wash and a hand rub, both with re-moisturising properties that are kind to the skin. Highly effective against a huge range of pathogens and active for up to three hours after application, these products bring an extraordinary high level of hygienic protection to your everyday protocols.

For further information visit www.initial.co.uk/medical or call 0870 850 4045.

HEADLINING THIS YEAR'S EVENT

Oral-B is once again the Headline Sponsor at this year's Dental Showcase (19-21 October 2017).

Much interest is expected in the company's flagship power toothbrush, Oral-B Genius. By combining motion sensor technology located in the brush, and video recognition using a smartphone's camera, all areas of the user's mouth can be tracked so that they know exactly where they've brushed and where they've missed! Patients receive instant feedback on the brushing of each zone of the mouth via the Oral-B App 4.1, including guidance on pressure applied and brushing duration.

The mechanical benefits of Oral-B's power toothbrushes complement the chemical efficacy afforded by their toothpaste. The new Oral-B Gum & Enamel Repair Toothpaste will help patients address the increasing prevalence of gum or enamel issues. Featuring unique ActivRepair technology (with two sources of stannous: stannous fluoride and stannous chloride), it is the best clinically-proven toothpaste from Oral-B to help restore gum health and prevent enamel erosion.

Oral B will be on stands L2 and K10 at this year's BDIA Dental Showcase.

COME AND EXPERIENCE THE DIFFERENCE YOURSELF

Dürr Dental will be exhibiting a range of their equipment at this year's BDIA Dental Showcase. Their panoramic device is so easy to use you won't need a second take, as the first one will almost certainly be perfect. Unlike other devices this unit does not rely on experience or expertise. Come and experience the difference yourself. You'll also get a chance to experiment with a totally new piece of imaging equipment!

Visitors might also be interested in the latest networking systems that can be used with your compressor and suction system. By linking them to the network, practices can see the performance of each piece of equipment at a glance. Linking the compressor, for example, to the digital network yields numerous benefits: current status, faults or messages, such as for filter changes, are immediately displayed.

Visit Dürr Dental on stand D30.

CARE AND PROTECTION FOR ORTHODONTIC APPLIANCE WEARERS

During orthodontic treatment patients will experience difficulty keeping their mouths clean and are prone to high levels of plaque accumulation. This can result in tooth decay, gum disease, bad breath and ulcers.

The VITIS Orthodontic range contains a unique combination of four active ingredients which helps patients achieve exceptional all-round protection:

Cetylpyridinium chloride (CPC) is a broad spectrum oral antiseptic which reduces dental bio-film formation by eliminating bacteria. CPC is active against pro-inflammatory toxins released by bacteria, thereby preventing gingivitis

Fluoride prevents caries by increasing enamel resistance to demineralisation and by increasing remineralisation of initial lesions. VITIS Orthodontic mouthwash and toothpaste contain the recommended level for adult teeth

Allantoin stimulates cell proliferation, helping to produce rapid tissue regeneration of damaged tissues as well as protecting and exerting an anti-irritant effect on oral mucosa.

Aloe vera soothes inflamed gums and helps to alleviate gum pain associated with moving teeth.

For more information call 0208 459 7550 or email marketing@dentocare.co.uk.

If you would like to promote your products or services direct to the dental industry in *BDJ Team*, call Andy May on 020 7843 4785 or email a.may@nature.com.

BDJ Team CPD

CPD questions: October 2017

CPD: ONE HOUR

The unbearable sweetness of sugar (and sugar alternatives)

1. Select the **correct** statement:
A) a spoonful of xylitol has 6 more calories than sugar
B) xylitol has a higher effect on blood sugar levels than sugar
C) agave has a high glycaemic index
D) agave contains fewer calories than sugar

2. Why is it unwise to snack on dried fruit throughout the day?
A) this is fruit that has been dried which concentrates the sugars already present in the fruit
B) some dried fruits are infused with a sucrose syrup which increases their sugar content
C) they contain large amounts of fermentable carbohydrate which is detrimental to oral health
D) all of the above

3. Which is **true**?
A) there is strong evidence to substantiate Manuka honey's use as an antioxidant to improve clinical conditions
B) honey has a higher glycaemic index than sugar
C) all syrups contain glucose, fructose and sucrose in varying proportions
D) excess consumption of Yacon syrup can cause constipation

4. Select the **incorrect** statement:
A) lactose is not harmful to teeth
B) plain milk and unsweetened dairy products tend to be high in protein, calcium and phosphates
C) Sucralose is a sugar like fructose and sucrose
D) Sucralose has no effect on tooth decay

BDJ Team is offering all readers **10 hours of free** *CPD a year on the BDA CPD Hub! Simply visit* **https://cpd.bda.org/login/index.php** *to take part!*

How to take part in *BDJ Team* CPD

BDJ Team CPD is available through the BDA CPD Hub. This site is user-friendly and easy to use. There are now **20** hours of **free** BDJ Team CPD on the CPD Hub: **10** hours from 2016 and **10** hours from 2017!

To take part, just go to https://cpd.bda.org/login/index.php.

To send feedback, email **bdjteam@nature.com.**