BDJ Team
MAY 2014

Emergency
oxygen therapy

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THE TEAM

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Publishing
Publisher: Rowena Milan
British Dental Journal
The Macmillan Building
4-6 Crinan Street
London N1 9XW

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DRAFT ORAL HEALTH GUIDANCE PUBLISHED

The National Institute for Health and Care Excellence (NICE) has published a draft guideline to help local authorities improve oral health. The draft guideline makes recommendations to help councils work with other local organisations (such as the NHS, nurseries, schools, community centres and voluntary groups) to develop a local strategy on oral health and deliver community-based activities to:

- Improve diet and reduce consumption of sugary food and drinks, alcohol and tobacco
- Improve oral hygiene
- Increase the availability of fluoride (such as using fluoride toothpaste - but water fluoridation is not within the scope of this guideline)
- Increase access to dental services.

Professor Mike Kelly, Director for the Centre of Public Health at NICE, said: 'Helping local authorities to improve oral health in their communities is vital in helping people live a healthier life overall. We are keen to receive comments on this draft version of this new guideline from anyone who is likely to be involved in making key decisions in their local area. We also keen to hear from those delivering frontline services in dentistry, health, social care and education.'

A copy of the draft public health guidance can be found at http://guidance.nice.org.uk/PHG/61.

FIONA IS OUTSTANDING STUDENT OF 2013

Dental nurse Fiona Cullen has received the British Dental Association (BDA) Outstanding Student of 2013 award for being the student who attained the highest standing in the BDA Education Radiography examination in 2013.

Fiona was presented with her award by Peter Ward, BDA CEO, and Alasdair Miller, BDA President, at the British Dental Conference and Exhibition 2014, held in Manchester in April.

This is the first time that this award has been given. The BDA launched its own qualifications in Radiography and in Oral Health Education in 2013, building on the success of its online courses in the same disciplines, which have been offered since 2006. BDA Education has helped over 1,000 dental care professionals (DCPs) gain nationally-recognised qualifications.

Fiona, who works at Finaghy Orthodontic Practice in Belfast, qualified as a dental nurse in 2011 and is actively engaged in further education to gain new skills.

For more information on the BDA's online courses, visit www.bda.org/dcps/course/.

Look out for a full conference report in the June issue of BDJ Team.

Do you have a news story that you would like included in *BDJ Team*? Send your press release or a summary of your story to the Editor at bdjteam@nature.com.

ORAL HEALTH PROMOTION TEAM HOLDS SPEED DATING EVENT

On 12 April 2014 the Oral Health Promotion Team from County Health Partnerships, part of Nottinghamshire Healthcare, held a networking event for dental health professionals.

Delegates from dental practices in Nottingham City, Nottinghamshire County and Bassetlaw were joined by Barry Cockcroft, Chief Dental Officer England, and Sandra Whiston, Dental Public Health Consultant for the East Midlands, who set the scene by presenting international, national and local data.

The theme for the conference was children and focussed on families with children under five-years-old. In Nottingham City 39% of five year olds had experience of dental disease (England average 28%) and in the County 20% have had active decay. This highlighted the importance of this agenda in the local area.

Julia Wilkinson, Head of Oral Health Promotion and 'Chief Tooth Fairy' said:

'Current oral health activities we are working on in Nottingham include The City Smiles and Incredible Mouths programmes which involve training to midwifery, health visiting and school health teams to ensure they are all delivering up to date key oral health messages at crucial developmental stages. New initiatives include a drive to increase dental access of families with two year olds through the "two year ticket scheme" with health visiting and dental practices.'

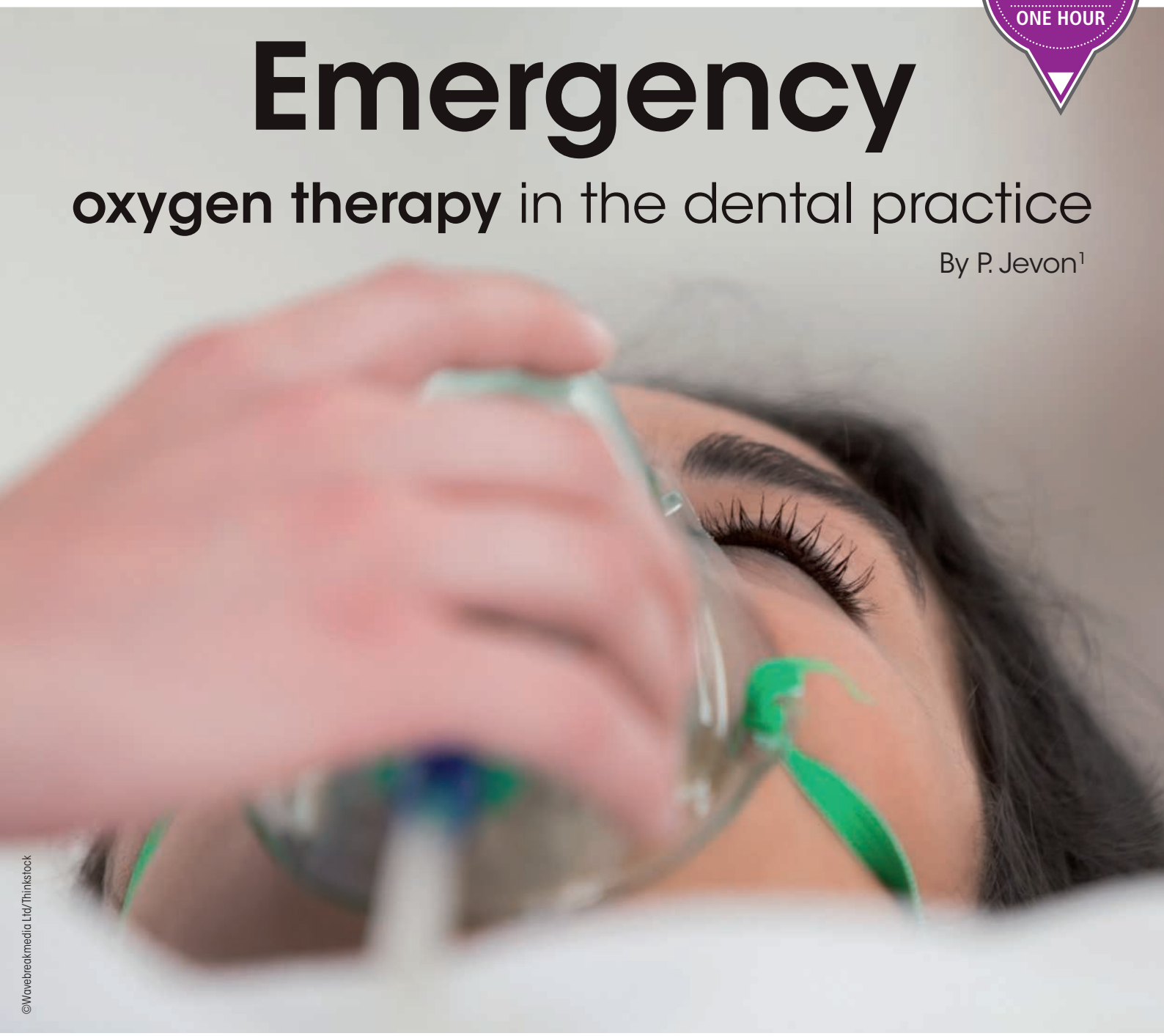
The event included speakers, dental reps, a raffle, goody bags, workshops and 'speed dating' - an opportunity for local services to liaise with dental practices for the first time.

The next conference, on older children and young people, is planned for October.

CORE CPD: ONE HOUR

Emergency oxygen therapy in the dental practice

By P. Jevon[1]



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Saving lives

Dental practices should have facilities to administer high flow oxygen to a patient who is critically ill.[1] Although oxygen can save lives by preventing severe hypoxaemia, if it isn't administered and managed appropriately, there is potential for serious harm and even death.[2]

The aim of this article is to provide an overview to the administration and management of emergency oxygen in the dental practice.

Related anatomy and physiology

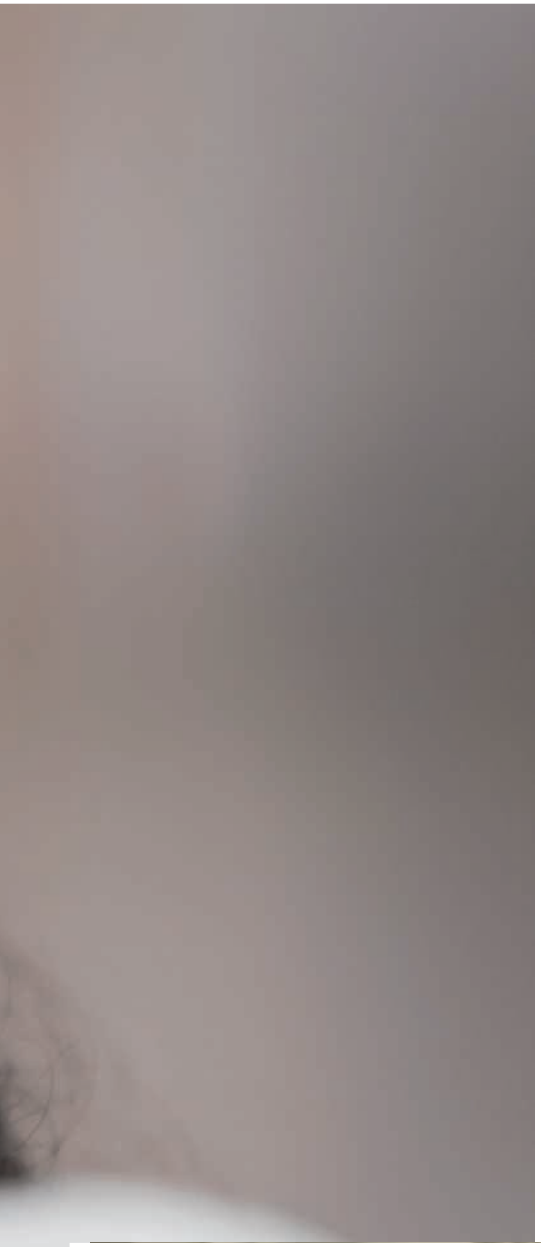
Oxygen is a colourless, odourless gas that forms about 21% of the Earth's atmosphere and is essential for plant and human life. Tissue oxygenation is dependent upon inspired oxygen, the concentration of haemoglobin and its ability to saturate with oxygen, as well as the circulation of blood.

Evidence of harm associated with oxygen therapy

Up to June 2009, the National Patient Safety Agency (NPSA) had received 281 reports of serious incidents relating to inappropriate administration and management of oxygen; of these incidents, poor oxygen management appears to have caused nine patient deaths and may have contributed to a further 35 deaths.[2] Common themes identified from the review of these incidents, local investigations and other sources are:

- Prescribing: failure to or wrongly prescribed
- Monitoring: patients not monitored, abnormal oxygen saturation levels not acted upon
- Administration: confusion of oxygen with medical compressed air, incorrect flow rates, inadvertent disconnection of supply
- Equipment: empty cylinders, faulty and missing equipment[2]
- Dental practitioners must therefore

[1] *Resuscitation Officer/Clinical Skills Lead, Manor Hospital, Walsall*



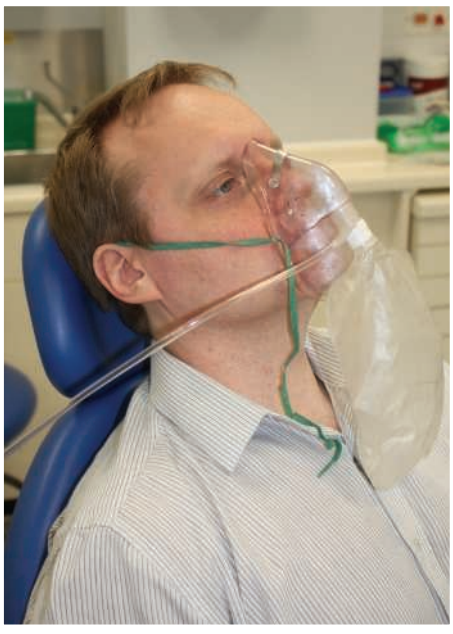


Fig. 1 Oxygen face mask with reservoir bag and tubing

'IDEALLY, THE PATIENT'S OXYGEN SATURATION LEVELS SHOULD BE MONITORED BEFORE, DURING AND FOLLOWING OXYGEN THERAPY.'

understand when and how to safely and effectively administer oxygen. An understanding of the hazards associated with the use and storage of oxygen is also important.[3]

Indications for oxygen therapy in the dental practice

Oxygen is prescribed to treat hypoxaemia.[4] Oxygen therapy is therefore aimed at supplementing the inspired oxygen concentration to prevent tissue hypoxia and resultant cellular dysfunction that can occur in the acutely ill patient.[5]

Indications for administration of emergency oxygen in the dental practice include:

- Syncope
- Acute asthma attack
- Anaphylaxis
- During an epileptic fit
- Cardiopulmonary resuscitation.[1]

It is no longer recommended to routinely administer oxygen to a patient with chest pain who is suspected of having a myocardial infarction. High flow oxygen may be administered (15 litres per minute) if the patient is cyanosed (blue lips) or if the level of consciousness deteriorates.[1]

Oxygen therapy equipment

The Resuscitation Council (UK)[1] recommends that, as a minimum, each dental practice should have:

- An oxygen face mask with oxygen reservoir and tubing (Fig. 1)
- A portable oxygen cylinder (Fig. 2) of sufficient size to enable the delivery of adequate flow rates, for example, 15 litres per minute, until the arrival of an ambulance or the patient fully recovers. A full 'D' size cylinder contains 340 litres of oxygen and will allow a flow rate of 10 litres per minute for up to 30 minutes. It may be necessary to have two such cylinders in the dental practice to ensure the supply of oxygen does not run out during a medical emergency
- An oxygen cylinder key (if appropriate). Some oxygen cylinders require a special key to unlock the cylinder – it is most important that the key is kept with the cylinder
- Ideally, the patent's oxygen saturation levels should be monitored before, during and following oxygen therapy. If a pulse oximeter is available, it should be used.[2] However, usually only dental practices that administer sedation will have a pulse oximeter. [Editor's note: A correspondent wrote to the *BDJ* advising that pulse oximeters are an essential piece of kit for dental practices and can be purchased for as little as £35 on the Internet.]

Oxygen face mask with oxygen reservoir

An oxygen face mask with oxygen reservoir (sometimes called an oxygen non-rebreathe mask) (Fig. 1) has a one-way valve that diverts the oxygen flow into the reservoir bag during expiration; the contents of the reservoir bag together with the high flow oxygen (15 litres per minute) result in minimal entrainment of air and an inspired oxygen concentration of approximately 90%.[1] The valve also prevents the patient's exhaled gases from entering the reservoir bag. The use of the oxygen reservoir bag helps to increase the inspired oxygen concentration by preventing oxygen loss during inspiration.

To ensure the mask is functioning correctly and is effectively used, it is important to follow the manufacturer's recommendations for simple basic checks before use.[6]

Fig. 2 Portable oxygen cylinder. Reproduced with kind permission of BOC Lifeline

Portable oxygen cylinder

Portable oxygen cylinders are black with white shoulders.[7] There are many different types of portable cylinders available. A commonly used one is shown in Figure 2. This cylinder has:

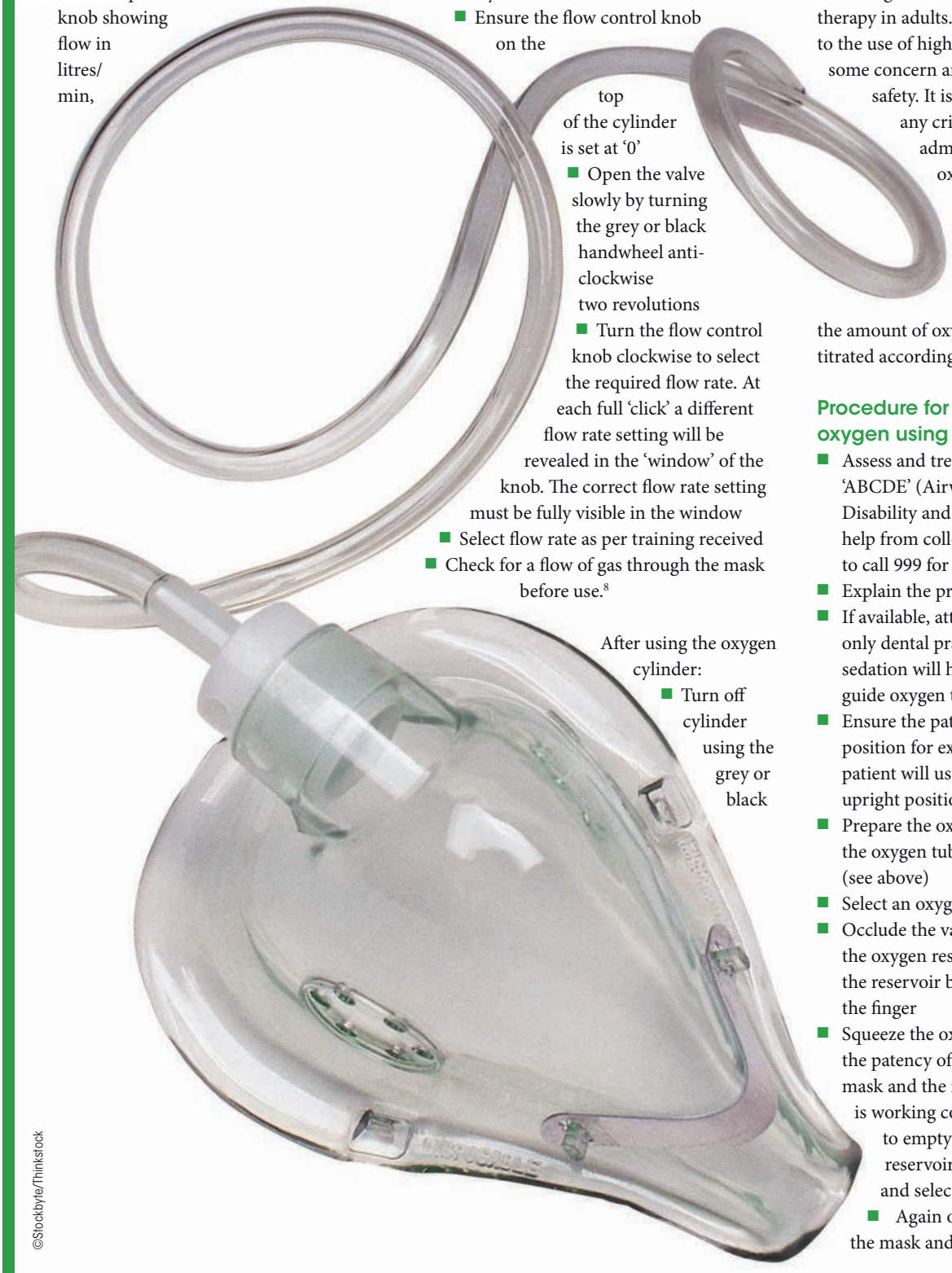
- A regulator integrated with the cylinder valve
- A gauge that shows 'live' contents at all times, even when the cylinder is turned off
- Simple on-off handwheel (no tools needed)
- Click-stop flow control knob showing flow in litres/min, ranging from 1 to 15 litres per minute
- Sufficient capacity to last approximately 30 minutes at highest flow rate of 15 litres/min.[8]

Always follow the manufacturer's recommendations when using an oxygen cylinder. Before using the oxygen cylinder, as shown in Figure 2:

- If necessary, remove the protective cap
- Attach the oxygen tubing and mask to the fir tree outlet (the oxygen outlet) of the cylinder
- Ensure the flow control knob on the top of the cylinder is set at '0'
- Open the valve slowly by turning the grey or black handwheel anti-clockwise two revolutions
- Turn the flow control knob clockwise to select the required flow rate. At each full 'click' a different flow rate setting will be revealed in the 'window' of the knob. The correct flow rate setting must be fully visible in the window
- Select flow rate as per training received
- Check for a flow of gas through the mask before use.[8]

After using the oxygen cylinder:

- Turn off cylinder using the grey or black handwheel by turning it clockwise
- Remove tubing and mask from the fir tree outlet and allow residual oxygen in the regulator to vent
- Turn flow control knob to '0'
- Check the cylinder contents gauge to ensure adequate supply for next administration.[8]



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Guidelines on the administration of oxygen

The British Thoracic Society (BTS) has issued detailed guidance on emergency oxygen therapy in adults.[9] The guidance relating to the use of high flow oxygen has caused some concern and confusion regarding its safety. It is emphatically clear that in any critically ill patient the initial administration of high flow oxygen (15 litres per minute) is the correct course of action. When oxygen saturation levels can be accurately measured using a pulse oximeter, the amount of oxygen administered can be titrated accordingly.

Procedure for administration of oxygen using a non-rebreathe mask

- Assess and treat the patient following the 'ABCDE' (Airway, Breathing, Circulation, Disability and Exposure) approach; call for help from colleagues. It may be necessary to call 999 for an ambulance
- Explain the procedure to the patient
- If available, attach pulse oximetry (usually only dental practices that administer sedation will have a pulse oximeter) to guide oxygen therapy
- Ensure the patient is in an appropriate position for example, if breathless, the patient will usually prefer to be in an upright position
- Prepare the oxygen cylinder and attach the oxygen tubing (see above)
- Select an oxygen flow rate of 15 litres/min
- Occlude the valve between the mask and the oxygen reservoir bag and check that the reservoir bag is filling up. Remove the finger
- Squeeze the oxygen reservoir bag to check the patency of the valve between the mask and the reservoir bag. If the valve is working correctly it will be possible to empty the reservoir bag (if the reservoir bag doesn't empty discard it and select another mask)
- Again occlude the valve between the mask and the oxygen reservoir bag,

'HANDLE OXYGEN CYLINDERS WITH CARE. IF THE CYLINDER IS DROPPED OR KNOCKED IN USE IT MUST BE CHECKED BEFORE FURTHER USE.'

allowing the reservoir bag to fill up
- Place the mask with a filled oxygen reservoir bag on the patient's face, ensuring a tight fit
- Reassure the patient
- Closely monitor the patent's vital signs. In particular, assess the patient's response to the oxygen therapy for example, respiratory rate, mechanics of breathing, colour, oxygen saturation levels (if pulse oximetry available), level of consciousness
- Discontinue/reduce the inspired oxygen concentration as appropriate following advice from a suitably qualified dental practitioner
- Await the arrival of the ambulance.

Chronic obstructive pulmonary disease (COPD) patients

Although oxygen should be administered with extreme caution in patients with COPD,[9] in critical illness high flow oxygen as described above should be administered.[1]

Care, handling and storage of oxygen cylinders

The Medicines and Healthcare products Regulatory Agency (MHRA)[10] has issued guidance on the care and handling of oxygen cylinders and their regulators. It recommends that healthcare staff should:

- Be fully trained in the use of oxygen cylinders
- Be aware of all the related risks such as fire and manual handling
- Carry out full checks on oxygen cylinders and their regulators before each use, ensuring that they contain enough oxygen for the required therapy
- Check the label on the oxygen cylinder ensuring it is not out-of-date
- Ensure their hands are clean before handling an oxygen cylinder; there is a risk of combustion from oils and grease. It is also important to ensure their hands are adequately dried after the use of alcohol gel
- Ensure that the oxygen cylinder outlet and oxygen regulator inlet are clean before attaching a regulator
- Always open the cylinder slowly and check for leaks. Close cylinder valves when not in use
- Handle oxygen cylinders with care. If the cylinder is dropped or knocked in use it must be checked before further use; cylinders with integral valves should be returned to the supplier; separate regulators should be sent to the service department for inspection.

The MHRA[10] recommends that oxygen cylinders should be stored in a secure area that is well ventilated, clean and dry, as well as being free from any sources of ignition such as patients/staff smoking or machinery.

BOC Medical[9] advises that it is important to:

- Keep the oxygen cylinder away from naked flames and sources of heat. Oxygen is a non-flammable gas, but it does strongly support combustion
- Ensure the oxygen cylinders are stored in a safe and secure area where they cannot fall over and cause injury
- Ensure the oxygen cylinder is stored in a well-ventilated area
- Never use excessive force when opening or closing the cylinder using the grey or black handwheel
- Not paint the cylinders as all labels and markings must remain clearly visible
- Refrain from using oil or grease (or any oil-based products, which includes hand creams) in the vicinity of the oxygen cylinder. High velocity oxygen and oil/grease could cause spontaneous combustion.[9]

Defective oxygen cylinders should be reported to the Defective Medicines Reporting Centre (DMRC) and defective detachable regulators to the Adverse Incident Centre (AIC), both at the MHRA (www.mhra.gov.uk).

Conclusion

Critically ill patients should receive high flow oxygen. Dental practitioners should understand when and how to safely and effectively administer oxygen. An overview of the hazards associated with the use and storage of oxygen has been provided together with the procedure for administering it.

GLOSSARY

- Dyspnoea: difficult or laboured breathing (derived from Latin and Greek words: *dus* – bad or difficult, *pnoe* –breathing)
- Cyanosis: blue discoloration of the skin due to poor circulation or inadequate oxygenation of the blood (derived from the Greek word *kuanosis* – blueness)
- Haemoglobin: a red protein containing iron, responsible for transporting oxygen in the blood; the normal haemoglobin (HB) count in men is 13-18 g per 100 ml and in women is 1216 g/100 ml
- Anaemia: condition characterised by inadequate red blood cells and/or haemoglobin in the blood; in men <13 g per 100 ml of blood and in women <12 g per 100 ml
- Hypoxia: deficient oxygenation of the tissues (derived from the Greek word *hupo* – under and oxygen)
- Hypoxaemia: fall in concentration of oxygen in the arterial blood
- Pulse oximetry: measurement of oxygen saturation of haemoglobin; the normal oxygen saturation of arterial blood is 94% or higher.

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This article was originally published in the BDJ *on 7 February 2014 (**216:** 113-115).*

VERIFIABLE CPD

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Side effects of external tooth bleaching

By E. M. Bruzell,[1] U. Pallesen,[2] N. Rygh Thoresen,[3] C. Wallman[4] and J. E. Dahl[5]

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ABSTRACT

Objective This study was performed to assess the risk of at-home and in-office bleaching procedures, and to recognise potential predictors for side effects.

Design Multi-centre, questionnaire-based prospective study with follow-ups at around 14 days and around one year post-treatment.

Setting General practices and university clinics during the years 2007-2009 in Scandinavia.

Subjects Patients with tooth bleaching as part of the treatment plan.

Results The prevalence of experienced tooth sensitivity at first follow-up was independent of bleaching procedure (at-home = 50.3% [n = 143]; in-office = 39.3% [n = 28]; p >0.05; 95% CI [OR]: 0.1981.102) whereas prevalence of gingival irritation was higher after in-office treatment (at-home = 14.0%; in-office = 35.7%; p <0.05) (mean age: 37.3 years; 73.7% women; n = 171). At the second follow-up, two and three patients reported side effects attributed to the bleaching treatment in the at-home and in-office groups, respectively. Predictors for side effects were tooth sensitivity, surface loss and gingivitis when observed at inclusion. Treatment-related predictors were bleaching concentration and contact between tray and gingiva.

Conclusions Bleaching treatment, irrespective of method, caused a high prevalence of side effects. Patients associated with the predictors at inclusion mentioned above should be notified of the risk for side effects and treated only if bleaching is indicated based on a proper diagnosis.

EDITOR'S SUMMARY

'Our primary concern is for your safety.' So begins the introduction to most announcements preceding the descriptions of emergency procedures on aircraft should some rare and awful circumstance occur. Interestingly the insistence of the pilot that however frequently passengers fly the information is still important and they should *please* take notice underlines how the majority of travellers take it all for granted. I would suggest that the reason is that they have already weighed the risks against the benefit. Their perception is that the chance of a serious incident is so rare that it doesn't warrant looking up from their Sudoku or crossword and in any case is off-set by the advantage of being able to get to their chosen destination quickly and comfortably.

The same might also be said for tooth bleaching and is, I believe, borne out by the results of this useful piece of research on the safety of the various differing procedures. The recent enormous growth in tooth whitening has caused a minor revolution in dental practice and, as importantly, a sea-change in patients' views of what is available to make them look, and feel, better.

Just as with the in-flight announcements the fact that patients are prepared to put up with (as distinct from 'suffer') any subsequent discomfort in the interests of what might cynically be called vanity, but probably more generously termed aesthetics, is testament to their personal decisions to balance risk with benefit.

Be that as it may, it does not remove or lessen our need as professionals to advise patients as to the possible side effects or disadvantages of tooth whitening treatment. This research is therefore valuable as it enables us to do so as fully and comprehensively as possible based on a wide range of literature, practical experience and reported incidents. The fact that the procedures are for the most part free of problems, and in those cases where there are side effects they are relatively minor in nature, is reassuring for all concerned. While we should not be complacent we should be pleased that such a widely used treatment is as safe as it appears to be.

Stephen Hancocks
Editor-in-Chief, *British Dental Journal*

AUTHOR QUESTIONS

1. Why did you undertake this research?

The group of authors saw a need for an investigation on side effects and efficacy of tooth bleaching in a study that included a larger number of patients and with a longer follow-up time than usually reported. Furthermore, we became aware of individual cases of long-term discomfort or pain that the patients related to previous tooth bleaching treatment, and we hoped to obtain more information on this aspect. We also wanted to gain more insight into which method, in-office or at-home bleaching with trays, would cause the fewest side effects, as available reports were not conclusive.

2. What would you like to do next in this area to follow on from this work?

Data was also acquired on the efficacy of tooth bleaching, from the at-home and in-office groups. In-office treatment was performed as light-assisted bleaching and bleaching without light. This efficacy data will also be compiled and analysed. It would be of interest to investigate the frequency, degree and duration of side effects after repeated treatments. Relevant information could be obtained from investigations performed according with the EU-directive on the use of tooth bleaching products, ie dentist-supervised and with bleaching concentrations less than or equal to 6% hydrogen peroxide. As there seems to be uncertainty about the impact of bleaching on enamel and dentine it should be investigated whether the risk is increased with prolonged and/or repeated treatments in a clinical setting.

INDEPENDENT COMMENTARY

One of the biggest challenges in teeth whitening processes is sensitivity to the soft tissues and the teeth while carrying out treatments. The side effects can be so severe that some patients discontinue the treatments, as demonstrated in this paper. The sensitivity caused by in-office teeth whitening can be very severe when a very high concentration of hydrogen peroxide is used in conjunction with heat lamps during the procedure. This paper looked at the short- and long-term side effects of both home and in-office teeth whitening procedures across different treatment centres from universities to private clinics. The training and protocol of carrying out these treatments might vary from location to location, including bleaching tray design, bleaching products used and contact time with the active agents. It is well documented in the literature that both treatments caused soft tissue and pulpal sensitivity during and after treatments. Yet this is the first time a longer term study has evaluated any lingering side effects after one year of treatment in both procedures. The different types of side effects were clearly identified and discussed. This paper showed that side effects were usually short term, lasting a few days, with no long-term side effects associated with the teeth whitening treatments. It is interesting to find that those patients who had sensitivity with the treatments were more satisfied with their results.

'THE RECENT ENORMOUS GROWTH IN TOOTH WHITENING HAS CAUSED A SEA-CHANGE IN PATIENTS' VIEW OF WHAT IS AVAILABLE TO MAKE THEM LOOK BETTER...'

The authors reviewed and quoted literature that supported the findings in this paper. This paper is of special interest to me as my PhD thesis was on the efficacy and safety of teeth whitening processes. I have also reviewed the literature mentioned in this paper and most of them report the symptoms from various teeth whitening processes, utilising different strengths of bleaching agents. In-office teeth whitening using very high concentrations of hydrogen peroxide is a very complex procedure and the soft tissues need to be protected properly from the caustic effect of the strong chemicals used. It would be helpful if more research was performed into finding out the real causes of these symptoms to eventually find solutions for these, to make teeth whitening a pain-free experience for the patients in the near future.

Dr Wyman Chan
Clinical Associate Teacher, Warwick Dentistry, University of Warwick

This research summary was originally published in the *BDJ* on 9 November 2013 (**215:** 466-467). The full research was published in the *BDJ*; **215:** E17.

bdjteam201446

Dental school is not for the *faint hearted!*

By Kate Quinlan[1]

Not content with being a dental nurse then a dental hygienist and therapist, **Carolyn Renton** is now a fully-fledged undergraduate dental student.

Dental nursing

Dental nursing was my first job when I was 17. I worked as a dental nurse in Nottingham, Kent and London and completed every post-qualification course available: dental radiography, dental sedation, oral health education, orthodontics and implantology. When I had gone as far as I could, I decided to further develop my career. I realised that I had an incessant thirst to learn and I was fortunate enough to be offered a place to study dental hygiene and therapy by three institutions on my first application attempt.

Hygiene and therapy

Graduating with a Diploma in Dental Hygiene and Therapy from Sheffield in 2006 took me to the next level in dentistry. Finally I was working directly, with my own list of patients and my own room. I loved that career progression.

I worked for two years as a dental hygienist and therapist before the first degree arose for dental care professionals (DCPs): the BSc (Hons) Primary Dental Care at the University of Kent. I undertook two years of the three-year course before I decided it wasn't for me as there was no concentration on the clinical aspects of dentistry, where ultimately my heart lies. The course was good and I learnt many academic developmental skills that I am still using every day. It was classed as a full-time degree, but attendance was for three full days over the weekend for every module. I was able to carry on working almost full-time but there was a lot self-study to be done during my down time.

Although this degree is no longer available, it was open to all DCPs and the cohort I was in (the first ever) had a full mix of dental hygienists, dental nurses and me, a dental hygienist and therapist.

First class degree

In 2011 a BSc (Hons) in Dental Studies was developed at the University of Central Lancashire that was tailored to all DCPs but had specific modules designed for dental therapists. I jumped to enrol on that course as it covered advanced periodontology and restorative aspects of dentistry and was much more practical and hands-on. This course demanded alternate weekend attendance so I was able to carry on working full-time. Initially for the restorative module we were all dental therapists, but as I progressed to the periodontology modules dental hygienists participated too. I enjoyed the course and I was lucky enough to be awarded with a first class honours degree in 2013.

My courses did not have an impact on my working career or my financial bearing, as my clinical remit has not changed. It has, however, helped me to grow and develop academically, has stimulated me mentally, and satiated my thirst for knowledge.

Dental school

I decided to apply for dentistry in summer 2012. It had always been a dream of mine, but one I thought was out of my grasp. Becoming a dentist takes a lot of commitment and financial hardship so it was a decision that needed a lot of thought and complete support, which fortunately my husband is willing to give. The course costs £9,000 a year and despite my previous qualifications I have had to start from the beginning and will have to complete the whole five years plus a year of Foundation training at the end. So it is definitely not for the faint hearted!

I applied to a couple of universities but I was only offered an interview at Leeds Dental Institute. Luckily enough I got accepted on my first attempt. When I was offered an unconditional place I was flabbergasted and overwhelmed. The interview process is tough as you have to rotate around numerous interview stations undertaking different tasks. The selection process is down to performance numbers as opposed to personal feelings during an oral interview, so it was extremely gruelling.

> ***'FINALLY I WAS WORKING DIRECTLY, WITH MY OWN LIST OF PATIENTS AND MY OWN ROOM. I LOVED THAT CAREER PROGRESSION.'***

Being a fresher

I am just finishing the first academic year. It is much tougher than I expected and much more in-depth than anything I have learnt before. However, I have a passion for learning and I am enjoying the challenge.

There are a couple of other students with some dentistry background, but none as old (!) or as experienced as me. In some aspects of the course I think I will have an advantage, especially when it comes to patient communication and dealing with difficult

[1] *Editor,* BDJ Team*; bdjteam@nature.com*

situations. I may also have an advantage with some clinical work, but as I mentioned, dentistry is much more scientific and coming fresh from having top mark A-levels definitely stands the other dental students in good stead.

Blessed

I am fortunate to have an absolutely amazing husband, who is a pilot in the RAF. My husband supports me emotionally, psychologically and financially. Without him none of this would be possible. I have been truly blessed with a gift from heaven.

I'll graduate in 2018. In the meantime my husband and I plan to buy our own practice, as soon as the right one becomes available. I intend to work in the practice part-time providing dental therapy and hygiene until I complete dental school, then work in the practice full-time and my husband will manage it.

My family are never surprised when I inform them of my next planned educational pathway;

'IN SOME ASPECTS OF THE COURSE I THINK I WILL HAVE AN ADVANTAGE, ESPECIALLY WHEN IT COMES TO PATIENT COMMUNICATION AND DEALING WITH DIFFICULT SITUATIONS.'

they've almost come to expect it. They're always enthusiastic and proud which gives me all the energy to keep on going.

During my hygiene and therapy studies I also became qualified in aerobics, step, indoor cycling, studio resistance and dance-style aerobics. I recently joined the gym and would like to get back into regular exercise.

I also love cooking and enjoy hosting dinner parties for family and friends.

Careers and commitment

I think now is an excellent time for dental nurses to apply for dental hygiene and therapy. With direct access and the changes with the NHS contract, hygienists and therapists are going to be very popular and while most universities are still providing hygiene and therapy courses as a diploma instead of a degree, there are no student fees, and bursaries plus grants are available.

Becoming a dentist is not only competitive, but very expensive and very lengthy. It takes a lot of discipline and commitment, but if you think you have got what it takes, why not give it a go too?!

bdjteam201447

Top ten tips for good record keeping

©Monkey Business/Thinkstock

By Richard Birkin[1]

We take record keeping for granted. The dental team never wants to spend less time on treating the patient or indeed less time talking to the patient. So when we are pressed for time, what gets ignored? Record keeping.

But if there is a complaint or when the Care Quality Commission (CQC) (in England) visits, or if there is an NHS investigation, the first thing that gets examined in minute detail is the patient's clinical records. Experts will pore over them in detail using the latest standards to judge their quality and accuracy. They will not only consider the precipitating event but will examine everything in the records going back over a number of years. Here are ten top tips for good record-keeping.

1 Work as a team

Team work is essential for good record keeping. The amount of detail needed in good records means one person does not have the time to include all the essential data. The receptionist can take medical and social histories which helps reduce time pressures in the surgery. The dental nurse can record what the dentist does and the discussions had with the patient. They will need to be checked and signed by the dental care professional (DCP) but this takes less time than writing them from scratch.

2 Beware defaults and tick boxes

Much of day-to-day clinical work is repetitive and the temptation to use computer defaults or tick boxes for key phrases on paper records is strong. If a record shows you performed smoking cessation on a two-year-old patient or records that a 70-year-old man was pregnant this puts into question the accuracy and probity of the whole record and indeed all other records!

[1] *Head of Regional Services, BDA, and course leader for the BDA's Law, ethics and record keeping*

inspectors how valid consent was arrived at. Lawyers would have you believe valid consent is just about the law; communication is equally important.

4 Patient compliance

The response of patients to advice and prevention is core to disease control and feeds decisions on whether or not to provide advanced treatments. This again personalises the record and can demonstrate why a specific care pathway was taken. A decision not to provide complex treatment can be supported by the lack of compliance to the oral hygiene advice or the patient's repeated non-attendance. 'Did not attend' appointments should all be recorded.

5 Don't try to hide mistakes

We all make mistakes and we all forget detail. Never try to hide these mistakes. If an entry is not contemporaneous because it was forgotten, make this clear. Do not obliterate words in paper records – use a single line crossing out the error. Never delete contemporaneous entries in light of subsequent events. Similarly if something is forgotten or a mistake made in a computer record do not try and delete or alter the entry and never attempt to amend the dates. A correction can be added afterwards with an explanation as to what has been omitted or what the mistake is.

A computer hard disc always records the date and time of an entry; this cannot be deleted and can be forensically retrieved. The General Dental Council (GDC) takes falsification of records extremely seriously.

'WRITING "PIN" ["PAIN IN THE NECK"] COULD BE READ BY THE PATIENT AND COULD LEAD TO ERASURE!'

3 Personalise consent

The use of the team can be vital in providing the fine detail to demonstrate valid consent. One tip is to record what a patient's problems are, what they think of the treatment options and what they are worried about when it comes to risks of treatment *in their own words*. Direct quotes of patients' words in the records emphasises the record is individual to that patient and demonstrates respect for their opinions. It can also demonstrate to CQC and other

6 Radiography reports

Records of radiographic examinations are a legal requirement. Dentists are generally good at complying with *IRMER* but fall down when it comes to reporting on the results of the radiographic examination. They act upon what the radiograph shows but do not always report on their findings in the records. Such a record is an *IRMER* requirement. Team members can ask the dentist for a report on the radiograph and enter this on their behalf. The dentist can check this entry and initial it to say it is accurate.

7 NHS or private

The NHS/private interface needs careful recording. The records should make clear what is planned, whether it is NHS or private and, if the latter, whether the treatment is available and was offered on the NHS. Recent GDC advice gives guidance on this (*Standards 1.7.2, 1.7.3 and 1.7.5*). The NHS Regulations also demand that there should be no criticism of the quality or availability of NHS treatment (Contracts Regulations 3361 10 [3] [a] & [b]).

8 Risk status

It is best practice to record a patient's risk of developing disease. This is the subjective assessment of their clinical and social risk factors, taking into account procedures that reduce these risks. This assessment will also feed the recording of the risk assessment for the recall interval under National Institute for Health and Care Excellence (NICE) guidelines.

9 Do an audit

Doing a clinical audit of the records can demonstrate to a CQC inspector the practice's quality and your drive for improvement. Audits are key part of clinical governance and are likely to be an integral part of GDC revalidation. Pick just two or three items to audit, set benchmarks, and record actions for improvement. BDA Expert members get an audit tool as part of their membership.

10 Abbreviations and insults

Never make derogatory comments about patients under the guise of abbreviations. No matter how clever you think you have been, a lawyer or another dentist will work out the true meaning. Writing 'PIN' ['pain in the neck'] could be read by the patient and could lead to erasure!

The British Dental Association (BDA) is running a Law, ethics and record keeping course on Friday 4 July 2014 at the BDA, 64 Wimpole Street, London, W1G 8YS. For further details, please visit ***www.bda.org/training*** *or call the events booking hotline on 020 7563 4590.*

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'Oral health has become a *priority for dietitians'*

What do non-dental health professionals advise patients when it comes to the oral cavity? **Laura Pacey**[1] spoke to dietitian Aisling Pigott.

Role: Families First Dietitian

Description: In order to qualify as a dietitian you must undertake a Health Care Professionals Council (HCPC) approved programme at university. There are two types of programmes approved by the HCPC, which include assessed clinical placement alongside academic work:

- 3 or 4 year full time undergraduate BSc (Hons) Human Nutrition and Dietetics
- 2 year full time postgraduate programme (PgDip) in dietetics or a masters qualification in dietetics.

Most dietitians are employed in the NHS, but may also work in education, research, the food industry or on a freelance basis.

Regulator: All dietitians are obliged to engage in CPD and while there are no minimum hours required for CPD undertaken, it is a well regulated process. The HCPC has no set 'approved' CPD activities as it is up to the professional to decide what is relevant to them. CPD activities can include anything from journal clubs to peer supervision, CPD courses or research events.

May work with: Health visitors, speech and language therapists, consultants, general practitioners, school and social services.

Case study

Cork-born Aisling Pigott is a 26-year-old dietitian based in South Wales. With a BSc in human nutrition and dietetics and a PgC in sports and exercise, Ash has been a dietitian for four years. As a newly qualified dietitian Ash worked in rehabilitation, stroke rehabilitation, diabetes and weight management, which was then followed by a paediatric rotation that sparked her interest in working with children. Recently Ash has undertaken a challenge in a new direction and accepted a community role working with children and families under a Welsh Government funded Families First project. Separate to this role, Ash also supports local athletes, sports teams and clubs in Cardiff as a sports dietitian as well as lecturing in Sports Nutrition at the University of South Wales. Based in a community setting with the Flying Start Health Visiting team and some Families First workers, Ash plans her own itinerary, which currently includes weekly home visits and clinics alongside several healthy eating groups for children, and the development of a weight management service for maternal obesity.

Laura: *What is involved in being a dietitian?*

Ash: Working as a dietitian requires a passion for food, nutrition and excellent communication skills. Food plays a central role within society and the role of the dietitian can vary from acute hospital dietetics to work within the food industry, community nutrition or public health. The role of a dietitian also requires flexibility in approach and the ability to be able to communicate scientific information about food and nutrition. This needs to be tailored to the specific target audience so that it is easily accessible for other professionals, clients and the general public.

Laura: *What is your favourite part of the job?*

Ash: The most rewarding part of my current role is overseeing and running MEND 2-4, an obesity prevention programme for children aged between two and four years of age. The programme includes active play and tasting of new foods alongside parent education on healthy eating and behaviour management. I find this a really satisfying and worthwhile group to run. The families are really supportive of one another to make positive healthy changes that will impact their children's health throughout their lives. Children at this age are completely reliant on their parents

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[1] *Staff writer,* BDJ Team*; bdjteam@nature.com*

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and it is during this crucial early childhood stage that the majority of eating habits are established. The positive influence the group provides for their eating habits will support the future health of the next generation.

Laura: *Do you see your role as mostly preventive?*
Ash: My role is based around early intervention and prevention of obesity and differs significantly to that of the clinical hospital dietitian. Many of my dietetic colleagues are in roles that focus on treatment or management of diseases. Preventative proactive roles such as my own are a positive emerging trend. Recent figures demonstrate that over 50% of the population are overweight or obese and there is an urgent need for experts in diet and nutrition to be at the forefront of preventative services in the UK. There are ever-growing issues with poor nutrition, poverty, increasing food costs and rising levels and severity of obesity and the type of patients that I have on my caseload varies week to week. Typical patients include babies that need additional support with feeding or weaning, children diagnosed with or at risk of vitamin and mineral deficiencies, fussy eaters, overweight and underweight young people and their families. In general, these patients require a family-based intervention and I use some skilled professionals who can work with these families to reiterate and support positive dietary changes.

Laura: *Medical conditions such as eating disorders and diabetes can have a big impact on oral health. How much does oral health advice feature in your role?*
Ash: I come from a family of dentists, so oral health has always been a priority for me. Specialist dietitians within their field usually give disease-specific oral health advice as part of holistic patient care, eg increasing awareness of vomiting on dental health and providing advice on minimising damage to teeth or encouraging poorly controlled diabetics to have regular check-ups with their dentist.

Laura: *What oral health advice do you give patients?*
Ash: Within my role I am involved in direct patient contact and training/support of other professionals involved with children. As my grandfather and aunt are both dentists oral health advice is something that I consider very important. I encourage all professionals to support parents to establish positive routines around dental hygiene, avoid bottles if possible and avoid sending children to bed with milk (a pet hate of mine!). I encourage all parents to avoid giving their children sweets and food high in sugar as infants and toddlers, and discuss treats and portion control for older children.

Laura: *Nutritional advice and oral health advice can sometimes conflict, eg encouraging fruit juice and smoothie consumption to get 'five a day' when its acidic content can lead to dental erosion. Has the oral health advice you give changed over the years alongside changes in dietetic advice?*
Ash: Traditionally advice provided by dietitians and dentists around snacking on fruit and fruit juices has conflicted. This is very unfair to the general population who are understandably confused by the array of mixed messages out there. Oral health has become a priority for dietitians, particularly for dietitians in preventative roles such as my own. However, with improvements in consistency of advice between health professionals there needs to be ongoing consistency, standardisation of advice and learning between all healthcare professionals.

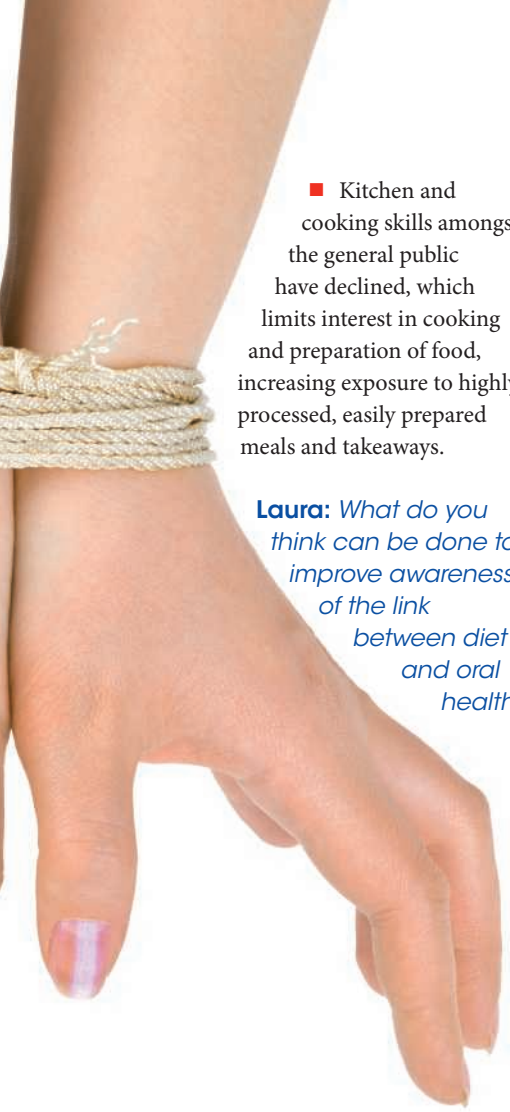
Laura: *Where do you source your information?*
Dietitians are regulated by the HCPC and we are the only qualified health professionals that assess, diagnose and treat dietary and nutritional problems at an individual and wider public health level. This can be confusing for some people who receive mixed messages in the media from unregulated sources eg nutritionists, nutritional therapists and diet experts.

As dietitians we source our information from evidence-based practice and research. Reliable resources that we guide the public towards include the British Dietetic Association 'Food facts' leaflets, Change4Life resources, NHS choices and the British Heart Foundation.

Laura: *Do you feel diet and nutrition is as central as it should be in disease management?*
Ash: From my experience working within the acute hospital environment, the role of diet and nutrition is not as central as it should be in disease management, particularly for adult patients. Disease places major strains on the body and appropriate nutrition is key to recovery, illness and wellbeing.

Laura: *What are the challenges to the public health message around diet and nutrition?*
Ash:

- The public is bombarded with conflicting information around diet and nutrition. The diet industry is a complex and unregulated field and the public are continuously exposed to confusing and misleading information
- Public health messages are not exciting or sexy and the simple message of move more, eat less does not resonate well with people looking for a quick solution



■ Kitchen and cooking skills amongst the general public have declined, which limits interest in cooking and preparation of food, increasing exposure to highly processed, easily prepared meals and takeaways.

Laura: *What do you think can be done to improve awareness of the link between diet and oral health?*

Ash: While dietitians and dentists take a holistic approach to patient care, a more joined up approach to patient care and development of resources and health campaigns around diet and oral health would help improve awareness of this link. In addition, education of dietitians, doctors, public health workers and dentists should also contain elements of behaviour change, oral health and nutrition.

> 'I encourage all parents to avoid giving their children sweets and food high in sugar as infants and toddlers, and discuss treats and portion control for older children.'

Laura: *Recent press has suggested Britain is addicted to sugar. Do you think emerging links between sugar consumption, oral health and systemic health will force the public to take their diet more seriously?*

Ash: Media attention and focus on sugar has grown in recent years, but the links between sugar consumption, oral health and systemic health are very well established. Despite some inconsistencies in media reporting, the media attention has brought this information to the public forefront, which can only be a good thing.

Laura: *What do you think has been the best health campaign in recent years?*

Ash: Despite the admirable success and efforts underway with the current health campaign Change4Life, nothing compares to the consistent hard line anti-smoking campaigns and anti-smoking policies that have been implemented in the UK in the past 40 years. The combination of graphic media campaigns, strict advertising regulations and legislation around smoking has led to a real reduction in smoking statistics and associated co-morbidities. While some of these media campaigns and regulatory changes were very unpopular, they have demonstrated real success in recent years. Health campaigns such as Change4Life can learn a lot from the success of anti-smoking campaigns.

Laura: *How has our diet changed in the last ten years and what do you think it will be like in the next ten years?*

Ash: I have noticed major changes since beginning my training. Food availability has increased, but food quality has declined. Food is available in so many opportunities, fast food outlets, coffee shops, newsagents, vending machines and street food outlets. It is so easy to pick up food now and eat without realising. Ten years ago, it would have been strange to see somebody eating on the street. These days, you can't walk down a high street without observing somebody munching on a chocolate bar or bag of chips.

As predicted in a recent report, obesity is set to escalate even further, with 90% of us expected to be overweight or obese in 2050. As we approach this date and the obesity epidemic continues, I hope that government policies and legislation will have a positive impact on our diet over the next ten years. Without legislation around food and drink advertising, fast food outlets and the soft drink industry, I envisage the current trends escalating further and the consequences of poor nutrition contributing to pressures on our health service.

Laura: *What five things could everyone do to improve their diet and nutrition?*

Ash:

1. Forget fad diets: don't get sucked into the latest 'new diet' but opt for a maintainable healthy diet to avoid yo-yo-ing weight and depleting your body of essential nutrients
2. Regulate meal patterns: regular meals are essential to maintaining a healthy weight and optimising health
3. Cut down, don't cut out: denying yourself all treats and nice things will leave you feeling deprived, unhappy and reaching for the biscuit tin. Include small amounts of portion-controlled treats and monitor their frequency
4. Cook from scratch: cut down on processed foods and prepare more foods from scratch. Try the Change4Life website or phone app for some easy, quick and healthy recipes
5. Enjoy your food: sit down with your family or friends and take time with your meals.

See also:
Interview with a health visitor: www.nature.com/vital/journal/v10/n3/full/vital1688.html
Interview with a school nurse: http://www.nature.com/vital/journal/v11/n1/full/vital1764.html

bdjteam201449

Toothache and electrical imbalance

By Brian Williams[1]

Perhaps the greatest advocate of 'electrical health' was Otto Overbeck (1860 to 1937). Born in the UK, he qualified in 1881 with a chemistry degree from University College London, and was elected a Fellow of the prestige Chemistry Society in February 1888. He became an industrial chemist and by the early 1890s was the Scientific Director of Hewitt Brothers' Brewery in Grimsby.

By 1924, while still at Hewitt Brothers, Otto Overbeck had developed and patented The Rejuvenator. The following year he published the *New electronic theory of life*, which linked many ailments, including toothache, to an electrical imbalance within the body. By passing low levels of electricity through the affected areas, balance would be restored and the patient 'cured', he said.

Overbeck admitted that The Rejuvenator had no beneficial effect on germs or deformities but it would, if nothing else, make 'you look younger and live longer'!

The Overbeck Rejuvenator came in an elegant leather case ❶ with a pair of metal combs ❷. One would be combed through the hair and held against the scalp. The long ❸ or short ❹ metal fingers were used depending on the thickness of the hair. One of the electrodes ❺ would then be placed against the 'painful' area and connected by the cable ❻ to the battery (not shown). The comb would be connected in a similar way.

The low voltage direct current was harmless, but useless. Nevertheless, Overbeck died a very wealthy man – who says a placebo doesn't work?

His palatial house, Overbeck, at Salcombe in Devon, which was bought by him in 1928 and bequeathed to the National Trust on his death in 1937, contains the vast collection of artefacts and specimens collected throughout his life – as well as other examples of Rejuvenators. It is well worth a visit.

View a demonstration of the Rejuvenator at www.youtube.com/watch?v=Q1sKXpYPq5Y.

The BDA Museum thanks the volunteers at Overbeck House for their help with this article.

[1] *Volunteer at the BDA Museum, retired general dental practitioner and honorary secretary of the Lindsay Society for the History of Dentistry*

bdjteam201450

BDJ Team continuing professional development

CORE CPD: ONE HOUR

CPD questions – May 2014

CPD ARTICLE: Emergency oxygen therapy in the dental practice – Pages 7-10

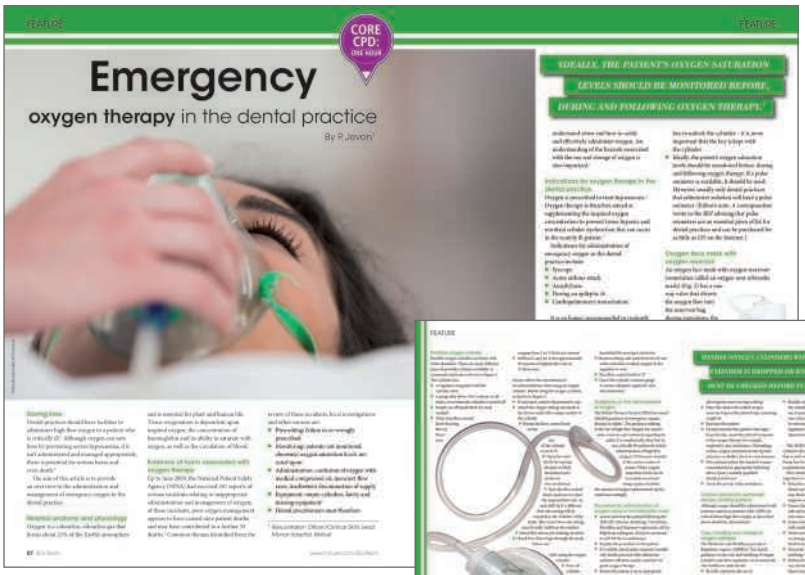
1. Which of the following is **incorrect**?

A. the Earth's atmosphere contains 21% oxygen

B. poor oxygen management appears to have caused nine patient deaths up to June 2009 according to NPSA

C. poor oxygen management caused 44 patient deaths up to June 2009 according to NPSA

D. a common theme of serious patient incidents relating to oxygen management is a failure to monitor patients



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2. It is **no longer recommended** to routinely administer oxygen to a patient:

A. who is having an acute asthma attack

B. who is having an epileptic fit

C. who has chest pain and is suspected of having a myocardial infarction

D. who is having a severe allergic reaction

3. It has a one-way valve that diverts the oxygen flow into the reservoir bag. It helps to increase the inspired oxygen concentration. What is it?

A. portable oxygen cylinder

B. pulse oximeter

C. automated external defibrillator

D. oxygen face mask with oxygen reservoir

4. It is recommended that:

A. hand creams should not be used in the vicinity of the oxygen cylinder

B. oxygen should be administered with extreme caution in patients with COPD

C. all dental professionals should be aware of the risks related to the care and handling of oxygen cylinders

D. all of the above

Missed April's CPD?

You can complete *BDJ Team* CPD on **Disposing of clinical and dental waste** through our website, any time in 2014. Just go to www.nature.com/bdjteam/cpd to find out how!

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3. I am answering the CPD questions in the _____ issue (PLEASE ENTER MONTH):

	A	B	C	D
Q1	☐	☐	☐	☐
Q2	☐	☐	☐	☐
Q3	☐	☐	☐	☐
Q4	☐	☐	☐	☐

4. Please add any comments or feedback that you might have below or email bdjteam@nature.com.

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HOW MANY OF YOUR PATIENTS ARE SUFFERING IN SILENCE?

The GSK-supported ESCARCEL study, a pan-European epidemiology study on the prevalence of dentine hypersensitivity, has revealed significant insights into the condition. It exposed that more than two out of five young adults in Europe suffer from dentine hypersensitivity. Of those with the condition, 28.4% said the pain was important to them.[1]

Approximately 80% of sensitivity sufferers are not currently using a desensitising toothpaste.[2] Over half of sufferers endure the symptoms in silence and fail to seek appropriate help from their dentist.[3]

Research into patients' perspectives of dentine hypersensitivity reveals that patients experience a mixture of emotions about it. Patients have reported feeling anxiety, frustration and annoyance because of their sensitive teeth. The condition can cause sufferers to change their habits and avoid foods or drinks they may otherwise enjoy. There are too many patients that feel they must 'just get on with it'.[4]

It's important to recognise that some patients *are* suffering and that your recommendation could be their pathway to minimising their symptoms. Use of a desensitising toothpaste is a simple yet effective way to manage dentine hypersensitivity. Brushing twice daily should already be part of a patient's oral health care routine so swapping to a desensitising toothpaste is an easy treatment plan to follow.

Sensodyne products containing NovaMin build a hydroxyapatite-like layer over and within exposed dentine tubules,[5-9] repairing dentine to provide clinically proven sensitivity relief. The robust layer binds firmly to collagen in dentine[7,10] and resists daily oral challenges,[5,7,9,11,12] helping to protect against the pain of dentine hypersensitivity with twice daily brushing.

To request FREE trial sized packs for your practice visit www.gsk-dentalprofessionals.co.uk.

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If you would like to promote your products or services direct to the dental industry in *BDJ Team*, just give Steve Brown a call on 020 7843 4724 or drop an email to stephen.brown@nature.com.

DELEGATES TEST DRIVE FIRST BLUETOOTH TOOTHBRUSH

At this year's British Dental Conference and Exhibition in Manchester Oral-B introduced the new TEST DRIVE power brush trial programme; the SmartSeries electric toothbrush with Bluetooth 4.0 connectivity; and the CROSS ACTION brush head.

TEST DRIVE allows multiple users to experience Oral-B power and Oral-B toothpaste using a shared handle in a hygienic way. Oral-B has designed and produced specialised handles and refills that feature a Triple Protection-System: a sealing insert within the refill brush head works with the handle to help prevent saliva entering the handle; a specially designed protective covering works in combination with the sealing system to help provide extra protection against soiling of the handle; and the cleaning and disinfection procedure ensures a hygienic next use.

The new CROSS ACTION brush head is Oral-B's most advanced power brush head to date that has perfectly angled bristles for a superior clean. Oral-B's new SmartSeries electric toothbrush is the world's first interactive electric toothbrush with Bluetooth 4.0 connectivity. The new toothbrush connects to the Oral-B App to provide real-time guidance while brushing - recording brushing activity as data - which patients can then share with their dental professional, helping to create a smarter, more personalised brushing routine.

The CROSS ACTION brush head will be available from July 2014 in the UK, and the SmartSeries electric toothbrush with Bluetooth 4.0 connectivity will be sold at limited retailers in the UK beginning in May.