



Top tips for paediatric dentistry – Part 1: examination and treatment planning for primary care

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Paediatric dentistry is often seen as a challenging discipline in primary care, considering the management and technical variances when compared to adult patients. The top tips discussed come from years of experience and will optimise care, cognisant of the time challenges that often exist in primary care.

Each interaction we have with our child patients will influence how they feel about, and the importance they place upon, their oral health in the future. Will they become adults with a positive outlook on oral health, or will they remember a childhood experience that negatively influenced their relationship with dental care for the rest of their lives?

1. Early introduction to the dental environment

Encourage parents to bring their children at an early age for examination as per Dental Check by One, ChildSmile and Designed to Smile guidance.^{2,3,4} These early visits for children under the age of three years are about delivering key preventive messages to parents and enabling the dentist to pick up early on any potential high-risk caries activities and provide appropriate preventative advice as per *Delivering better oral health* guidance.⁵

For the patient these early visits are about acclimatisation to the dental environment, and beginning a positive, lifelong relationship with dentistry, even though the examination may be very brief and no clinical intervention may be required.

2. Appropriate behaviour management

Behaviour management starts even before the child enters the surgery.

Make sure the practice website is up to date with photos of the reception, waiting room and the surgery so that children can become familiar with where they are going. Have photos of the staff that they may see, and pictures of the dental chair, mouth mirrors and toothbrushes to further inform them of the reason for their visit. Widgit Health⁶ has produced easy-to-read communication support dental information sheets. Consider using, or producing your own versions of such dental documents to help acclimatise younger children to the dental environment.

3. Communication is key

Prepare the parents for what will happen when they bring their child for the first visit. A good, trusting relationship with the child, the parents and the dental team is vital so that everyone is aware of the roles they should play. The parents may be able to prepare the child for what will happen at the next visit – as long as

they themselves have a positive attitude towards dental care and oral health.

Tailor your communication to the age of the child, using child-friendly language and avoiding technical terms. Use words like ‘stroke’ or ‘touch’ rather than ‘probe’; use ‘picture’ rather than ‘bitewing radiograph’. Avoid trigger words such as pain, needle, sharp.

Vary the tone of your voice; young children respond to the speed and pitch of the voice often more than the words that are used. Keep talking while you treat a child. Prolonged silences are off-putting and not reassuring. You can distract and soothe if you talk to your patients as you treat them.

Tell them what they are doing well, rather than just repeating ‘good girl’ or ‘good boy’ over and over. Say ‘When you open your mouth really wide I can see all your teeth right at the back of your mouth – so that’s great, thank you’.

Children like to please, so telling them what they are doing well is positive reinforcement for them.

Let the children know you care about them, ask if they are okay. Smile behind the mask and glasses; crinkly eyes are more friendly than blank staring ones.

‘Crinkly eyes are more friendly than blank staring ones.’

Try not to label a child as uncooperative, which implies they are doing it on purpose. Children under three are usually pre-cooperative – that is, they don’t know how to cooperate. All children have the potential to become cooperative; it just takes some longer than others. Some may simply be at an age where they are unable to tolerate what you want from them at that time.

Use one of the many non-pharmacological behaviour management techniques to help a child who needs reassurance, such as ‘Tell, show, do’ or distraction.^{7,8} Putting a cartoon on the overhead monitor has been shown to calm and soothe a child while you are looking at their teeth. Use positive reinforcement to reward them with stickers or toothbrushes.

4. Clinical examination of the child

Always start with an extraoral examination, looking at the child as they come into the surgery and noting any asymmetry, rashes, bruises or cold sores. ▶▶

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◀ Palpate for lymph nodes in the submandibular and cervical areas and check the TMJ, explain you are going to ‘tickle’ their neck and face.

Intraorally, look at the soft tissues before the hard tissues, check the tongue, gingivae, palate, floor of mouth and labial and buccal mucosa and note common conditions such as minor aphthous ulceration or geographic tongue.

5. Hard tissue examination: common findings and points to remember

a. Caries

Dental caries is common. The 2019 oral health survey of five-year-olds 2019 found that 23.4% of five-year-old children in England had experience of dental decay, with an average number of 3.4 teeth with experience of dental decay.⁹

As clinicians, we know that a significant proportion of clinical caries may not be visible in the mouth on clinical examination. Although caries can present on occlusal surfaces of posterior teeth and labial surfaces of upper incisors and canines in severe cases, there will likely also be caries interproximally, especially where there are tight contact points. Check the marginal ridges of primary molars for signs of shadowing or early breakdown. Back up any clinical findings with appropriate radiographic examination.

b. Dental development, eruption patterns, infra-occlusion and orthodontic assessment

Look at the eruption pattern of the teeth and question whether this fits what you would expect.

Delayed eruption of upper permanent incisors can occur due to the presence of supernumerary teeth or trauma to the primary tooth. If the contralateral incisor has been erupted for more than six months or a central incisor remains unerupted and the lateral incisor has erupted, investigate with an upper standard occlusal or periapical radiograph to assess the position of the unerupted tooth. Be aware that supernumerary teeth occur in approximately 1–2% of the population and approximately 80% will occur in the upper midline, often causing delayed eruption of permanent incisors.

First permanent molars can impact into the distal aspect of the second primary molars, thus delaying their eruption or speeding the exfoliation of the primary molar tooth. If mildly impacted, placing an orthodontic separator for a week may be enough to disimpact the first permanent molar to allow it to erupt. Severe impactions where the first permanent molar has resorbed the second primary molar excessively (sometimes involving the pulp) may require primary molar extraction, and once erupted enough, space maintenance of the first permanent molar.

Be aware of deciduous molars that are in infra-occlusion. Monitor them carefully and extract if they continue to ‘submerge’; this should be done as soon as the occlusal surface of the infra-occluded tooth passes past the most bulbous part of the contact point of the adjacent teeth, and before they sink below the gingival margin and require a surgical approach.

At the age of nine, assess the overall stage of dental development and palpate the buccal sulcus for the position of the unerupted canine teeth. If it is not obvious where they are, then take

radiographs to find them. An OPG if you have one or periapicals if not. Know who your local orthodontic specialists and consultants are and how to refer to them. Refer early to the orthodontist for misplaced/ectopic canines.

c. Caries risk assessment, BEWE and BPE

All children should have caries risk assessment and BEWE undertaken, and those seven years or older who are cooperative should have a BPE undertaken.

Include these assessments as part of your examination template and complete them each time you see a child for examination. They will help you form your diagnoses and guide treatment planning.

Once you have completed your clinical examination, consider which radiographs you want to take and given the child’s caries risk assessment how frequently they should be repeated. The timing of repeat bitewing radiographs for children should follow the FGDP guidelines¹⁰ depending on the caries risk of the child and whether any new decay is present.

d. Radiographic examination

Dental radiography is an essential adjunct to patient assessment and a critical part of the treatment planning process. This is just as true in children as it is in adult patients.

If caries is clinically visible in one or more teeth, or if the caries risk assessment indicates that the patient is at increased risk of developing caries, then radiographs should be attempted. Remember not all caries present will be clinically visible.

Figure 1 shows a five-year-old patient with no symptoms.

Clinical presentation: URE^o, ULE^o

Radiographic presentation: Caries 55^{o,m}, 54^{d,m}, 53^d, 63^d, 64^d, 65^{m,o}, 75^m, 74^d, 84^d, 85^m

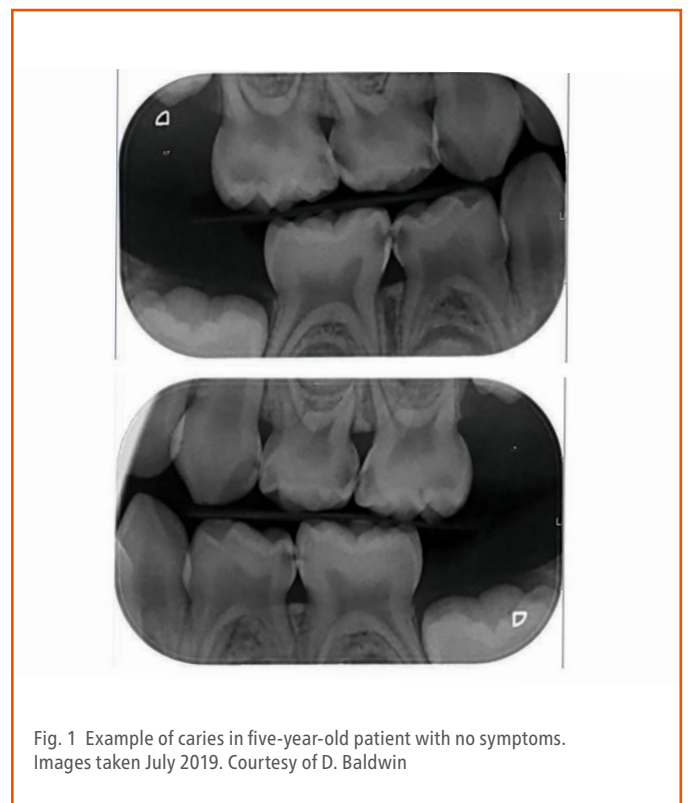




Fig. 1 Example of caries in five-year-old patient with no symptoms. Images taken July 2019. Courtesy of D. Baldwin

Table 1 The properties of Rinn xcp and Bitewing sticky tabs

Rinn xcp	Bitewing sticky tabs
	
Minimally invasive in oral cavity Size 0/1 specific holder Beam aiming device Good reproducibility Able to position appropriately	Least invasive – only film sits in oral cavity
More bulk for patient to tolerate	No aiming device Difficult to ensure film is in correct position Increased likelihood of overlap on image risk of cone cutting Can produce poorer-quality image

« Many children, however, may find bitewing holders difficult to tolerate. The shape and size of the patient's mouth is the main factor. In a vertical dimension, the depth of the lingual sulcus and height of palate are important; in a horizontal dimension, a longer film may trigger a gag reflex. Various behaviour management techniques such as tell/show/do and distraction can be used to help.

It is important to recognise the different size film/plates available for intraoral imaging. Use paediatric bitewing holders, which are smaller and easier for the child to tolerate, with size 0 recommended for the primary dentition only (22 x 31 mm) or size 1 for mixed dentition (24 x 40 mm).

From the age of four, start introducing bitewing holders; get the patient to try them in themselves first even without a film/plate in place, rather than trying yourself. Detach the bite block from the rest of the film holder/aiming device to make it less obtrusive. As soon as the child can tolerate them and bite down fully, take radiographs to check for interproximal caries.

A size 2 film can be used to take an occlusal view in very young children following trauma to the deciduous incisors. They can bite down very gently on the film rather than trying to fit a standard size 4 occlusal film or a periapical holder. See Table 1.

Use a system that is tolerable to the patient, that gives reproducible images and that reduces the risk of poor-quality images being taken to adhere to ALARA principles to reduce the need to repeat an image.

When you have gathered all the information from the patient history, caries risk assessment, BEWE, BPE and clinical and radiographic examination, you will be in a position to make a clear diagnosis and use this to guide your treatment plan.

Schedule treatment according to clinical and radiographic findings and prioritise as follows:

1. Urgent treatment
2. Preventative care – based on caries risk assessment and utilising advice from DBOH⁵
3. Operative treatment – based on clinical and radiographic findings
4. Recall plans – based on caries risk assessment.

e. Operative treatment planning pathway

Understand what your clinical and radiographic findings mean and develop a whole mouth operative treatment plan based on these findings. Follow a decision-making pathway for deciding what treatment is required for what tooth, which may include:

- Caries into pulp/inter-radicular radiolucency/history of irreversible pulpitis/clinical sinus/infection – extraction
- Interproximal molar caries in dentine with reversible pulpitis – stainless steel crown
- Anterior caries in dentine with reversible pulpitis – composite restoration
- Single-surface molar caries in dentine with reversible pulpitis – intra-coronal composite restoration or stainless steel crown
- Enamel-only lesions – increased risk preventative care and reduced recall period monitoring. ■

References

1. Benjamin F. Childhood lasts a lifetime. *Br Dent J* 2018; **224**: 577–579.
2. Dental Check By One. Profession. Available at: <https://dentalcheckbyone.co.uk/profession/> (accessed March 2022).
3. NHS Scotland. Childsmile. Available at: <http://www.child-smile.org.uk/> (accessed March 2022).
4. Public Health Wales. Designed to Smile. Available at: <https://phw.nhs.wales/services-and-teams/created-to-smile/> (accessed March 2022).
5. Office for Health Improvement and Disparities, Department of Health and Social Care, NHS England and NHS Improvement. Delivering better oral health: an evidence-based toolkit for prevention. 2021. Available at: <https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention> (accessed March 2022).
6. Widge Health. Dental procedures: My visit to the dentist. Available at: <https://widge-health.com/downloads/dental-procedures.htm> (accessed March 2022).
7. Campbell C, Soldani F, Busuttill-Naudi A, Chadwick B. Update of non-pharmacological behaviour management guideline. Clinical guidelines in paediatric dentistry. Available at: <https://www.bspd.co.uk/Portals/0/Public/Files/Guidelines/Non-pharmacological%20behaviour%20management%20.pdf> (accessed April 2022).
8. Chadwick B L, Hosey M T. *Child taming: how to manage children in dental practice*. 2nd ed. Quintessence Publishing Co Ltd, 2017.
9. Public Health England. National Dental Epidemiology Programme for England: oral health survey of 5-year-olds 2019. 2020. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873492/NDEP_for_England_OH_Survey_5yr_2019_v1.0.pdf (accessed March 2022).
10. Horner K, Eaton K A (eds). Selection criteria for dental radiography. 3rd ed. 2018. Available at: <https://cgdent.uk/wp-content/uploads/2021/08/FGDP-SCDR-ALL-Web.pdf> (accessed March 2022). ✦