



**Prevention:
Key oral health messages
& evidence (0-6 years)**

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Introduction

Aim

To present the key oral health improvement messages and the evidence-base that underpins these for use in practice.

Learning outcomes

By the end of this session you will be able to:

- Describe the evidence base and apply the key messages from Delivering Better Oral Health (DBOH), National Institute for Health and Care Excellence (NICE) recall guidance and Making Every Contact Count (MECC) into your practice
- Describe the evidence base for sugar reduction

This resource will support teams delivering the NHS Starting Well Programme.

It can be used for in-house training or self directed learning.

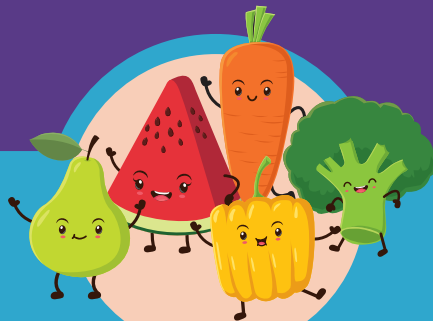
This session will meet GDC enhanced CPD development outcomes A, B, C.



About this resource

1. This resource will cover the key prevention messages and the underpinning evidence base in the following areas:

- Supporting breastfeeding and introducing solid foods
- Sugar reduction and healthy eating
- Lifestyle interventions
- Tooth brushing and use of fluoride toothpaste
- Fluoride varnish
- NICE recall guidance



2. A list of useful resources and information is included



3. The session ends with a test of knowledge (supplied separately)



Supporting breastfeeding & introducing solid foods



**Prevention advice
Key messages
& evidence
0-2 years**

Key messages

Supporting breastfeeding

1.

Ask about how the mother is feeding her baby.

If breastfeeding, **encourage** mothers to **exclusively breastfeed** babies for the **first six months**.

After six months babies should start solid foods **alongside** continued breastfeeding

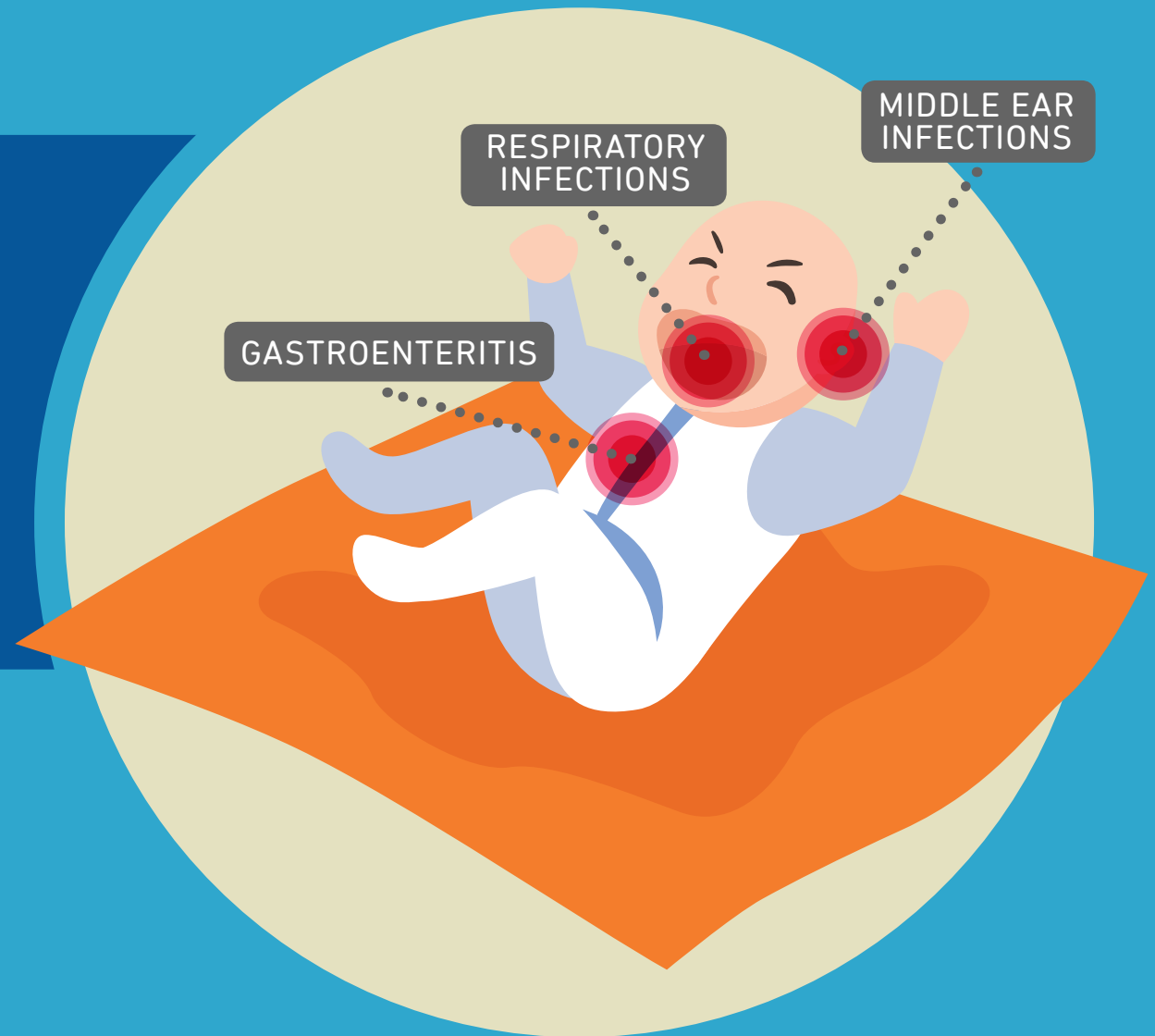


Key messages

Supporting breastfeeding

2.

Inform parents there is an increased risk of infectious morbidity (for example, gastroenteritis, respiratory infections, middle ear infections) for babies who are not breastfed



Key messages

Supporting breastfeeding

3.

Inform parents
that breastfeeding is
associated with a
**decreased risk of
tooth decay**



Key messages

Supporting breastfeeding

4.

Create an environment
that promotes breastfeeding in
the dental practice



For information on how to make your practice breastfeeding friendly go to the breastfeeding network:
www.breastfeedingnetwork.org.uk/bfn-breastfeeding-friendly-scheme/

Key messages

Introducing solid foods

1.

At around 6 months of age babies should start solid foods, **alongside continued breastfeeding.**

Introduce a wide range of of foods, flavours and textures such as -

vegetables and fruits;

starchy foods such as potatoes, bread, rice, pasta;

protein foods such as meat, fish, well cooked eggs, beans and pulses; and

pasteurised unsweetened dairy foods such as plain yoghurt

www.nhs.uk/start4life/weaning



Key messages

Introducing solid foods

2.

Emphasise
**sugar should not be
added to foods and
drinks**



Key messages

Introducing solid foods

3.

Advise parents...

- Babies should be introduced to drinking from a non-valve free-flowing cup from around 6 months of age, containing only breast or formula milk or plain water
- Bottle feeding should be discouraged from 12 months
- Only breast, formula milk or cooled boiled water should be given in bottles
- Never add sugar or give sugary drinks in a bottle



<https://www.unicef.org.uk/babyfriendly/wp-content/uploads/sites/2/2008/02/Start4Life-Introducing-Solid-Foods-2015.pdf>

Evidence

Supporting breastfeeding

1. Breastfeeding benefits the baby from top to toe

Not breastfeeding is linked to an increased risk of...

Ear infections (otitis media)

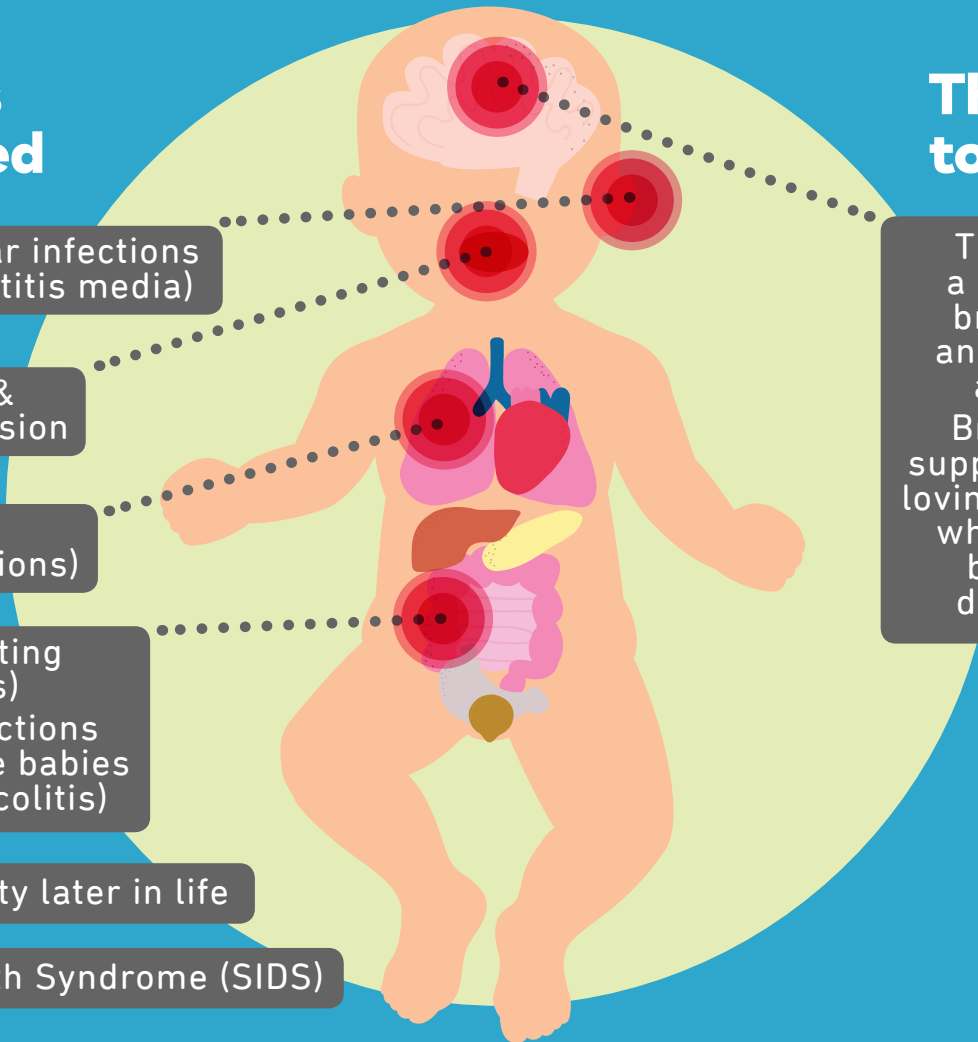
Tooth decay & dental malocclusion

Chest infections (lower respiratory infections)

Diarrhoea & vomiting (gastroenteritis)
Death from gut infections in sick and premature babies (necrotising enterocolitis)

Overweight/obesity later in life

Sudden Infant Death Syndrome (SIDS)



There is evidence to suggest...

There may be a link between breastfeeding and educational attainment. Breastfeeding supports close and loving relationships which helps the baby's brain development.

Source: From evidence into action: opportunities to protect and improve the nation's health, PHE 2014

Evidence

Supporting breastfeeding & introducing solid foods

2. World Health Organisation (WHO) Global Strategy (2003) Systematic review

- Mothers should exclusively breastfeed infants for the first six months to achieve the optimal growth, development and health
- Solid foods should be introduced into the infant's diet from around six months of age alongside continued breastfeeding (or infant formula if the mother chooses)



https://www.who.int/elena/titles/complementary_feeding/en/

3. The Scientific Advisory Committee on Nutrition (SACN) Subgroup on Maternal and Child Nutrition published 'Feeding in the first year of life' in July 2018. The recommendations are as follows:

- Exclusively breastfeed until around six months of age and continue to breastfeed for at least the first year of life
- Breast or formula milk should be babies' main drink until one year of age
NOTE: Under 12 months of age cow's milk should not be given as a main drink as this is associated with lower iron
- A wide range of solid foods, including foods containing iron, should be introduced from around six months of age, **alongside** breastfeeding - these foods should have different textures and flavours and may need to be tried several times before the infant accepts them, particularly as they get older



https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/725530/SACN_report_on_Feeding_in_the_First_Year_of_Life.pdf

Evidence

Supporting breastfeeding & introducing solid foods

4. Public Health England (PHE) has produced a briefing note 'Breastfeeding and dental health' (2019) that summarises current evidence and guidance.

<https://www.gov.uk/government/publications/breastfeeding-and-dental-health/breastfeeding-and-dental-health>

Breastfeeding has strong evidence of benefits to both child and mother

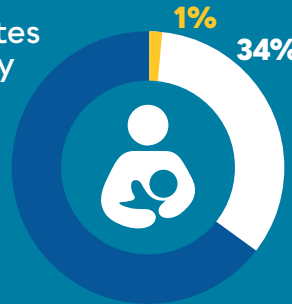


1

UK government policy advises exclusive breastfeeding for around the first 6 months of life. Babies should then start solid foods alongside continued breastfeeding at around 6 months.

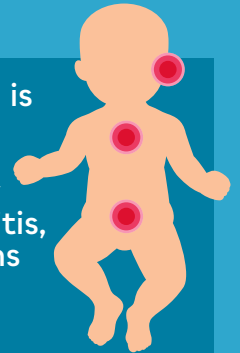
2

Breastfeeding rates in the UK are very low. At 6 months, 34% are still breastfeeding, with 1% exclusively breastfeeding.



3

Not being breastfed is associated with an increased risk of infectious morbidity such as gastroenteritis, respiratory infections and middle ear infections.



Evidence on tooth decay and breastfeeding

Breastfeeding up to 12 months is associated with a decreased risk of tooth decay



Studies after 12 months are of low quality and contradictory and acknowledge they do not take account of other foods and drinks being consumed.

Support and advice for mothers who are breastfeeding

- breastfeeding provides the best nutrition for babies
- at around 6 months of age babies should start solid foods, alongside breastfeeding
- as a mixed diet is established, give a wide range of foods, flavours and textures and avoid sugary foods and drinks
- breast or formula milk should be babies' main drink until 1 year old
 - introduce babies to drinking from a non-valve free-flowing cup from around 6 months of age, containing only breast or formula milk or plain water
- as soon as babies' first tooth erupts:
 - brush their teeth at least twice a day with a smear of toothpaste containing at least 1000ppm fluoride
 - go to the dentist for advice on how to prevent dental disease
- for information on how to make your practice breastfeeding friendly go to the Breastfeeding Network: <https://bit.ly/2ai17Eo>

Sugar reduction & healthy eating



Prevention advice
Key messages & evidence
All ages

Key messages

Sugar reduction

REDUCE

1.

Reduce amount and frequency of free sugar consumption.

Free sugars are those added to food or those naturally present in honey, syrups and unsweetened fruit juices, but exclude lactose in milk and milk products



Key messages

Sugar reduction

2.

**Avoid
sugar-containing
foods and drinks
at bedtime**



Key messages

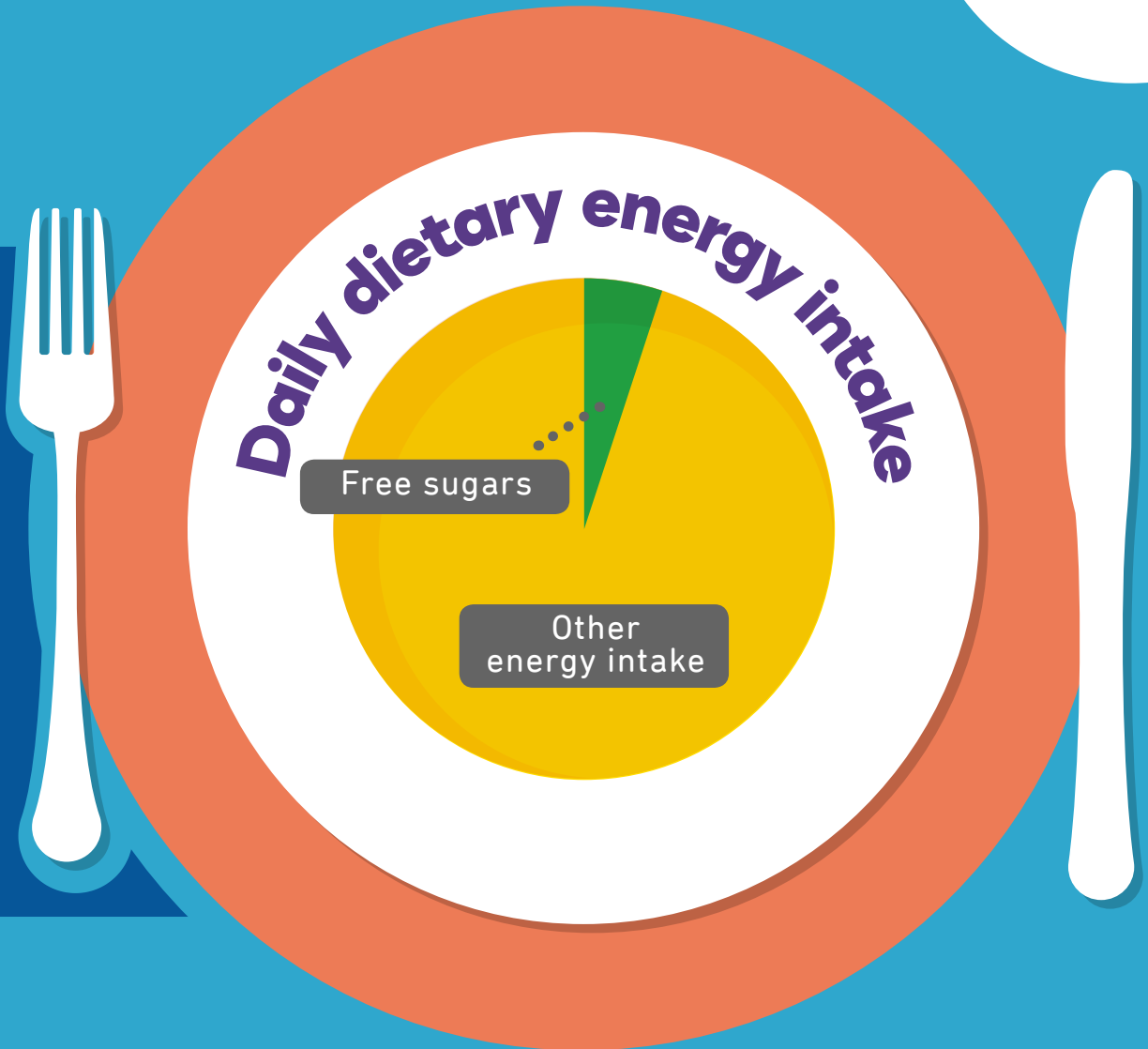
Sugar reduction

3.

From two years upwards the average intake of free sugars should not exceed

5% of total dietary energy intake.

Younger children should have even less



Key messages

Sugar reduction

4.

Squashes sweetened with sugar, fizzy drinks, soft drinks and juice drinks

have no place in a child's daily diet



Key messages

Sugar reduction

5.

**Where possible
advise/prescribe
sugar free
medicines**



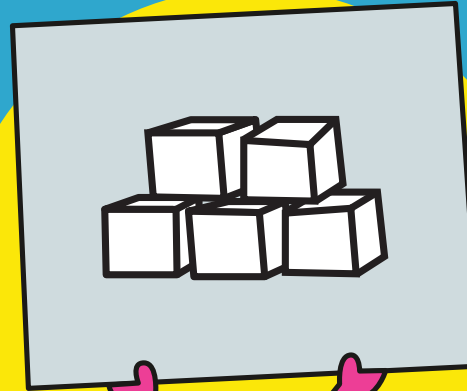
**SUGAR
FREE**

Key messages

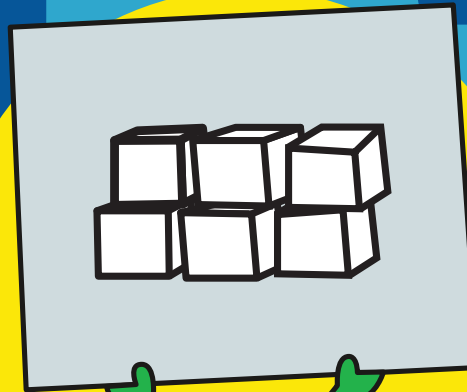
Sugar reduction

6.


Intake of free sugars should be no more than:

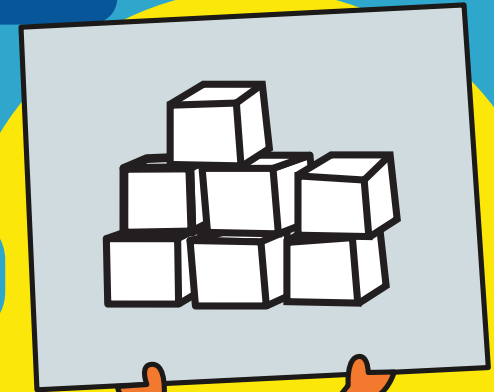


4-6 year olds: 5 cubes



7-10 year olds: 6 cubes

 = 4 grams



11+ year olds: 7 cubes

Source: Change4Life Campaign based on SACN recommendations, PHE 2017

Be Food Smart campaign

The **Change4Life Food Scanner app** scans bar codes to let the public see what amount of sugar, saturated fat and salt is in everyday food and drink.

This has been very popular with the public and you may wish to sign-post parents to this resource.

It is free to download from Apple's App Store or Google Play.



Be Food Smart campaign

Here is a short PR video that launched the **Be Food Smart** campaign nationally and has been released on social media showcasing the app and revealing the alarming amounts of sugar, saturated fat and salt children are consuming before they go to school and the health harms this can cause.



Click on the image above or search **Be Food Smart change4life**

Evidence

Sugar reduction

The Scientific Advisory Committee on Nutrition (SACN) was asked by the Department of Health and the Food Standards Agency to examine the latest evidence on the links between consumption of carbohydrates, sugars, starch and fibre and a range of health outcomes:

• In its review of the evidence, SACN found that:

- High levels and high frequency of sugar consumption are associated with a greater risk of dental caries
- The higher the proportion of sugar in the diet, the greater the risk of high energy intake
- Drinking high-sugar beverages results in weight gain and increases in BMI in teenagers and children
- Consuming too many high-sugar beverages increases the risk of developing type 2 diabetes

• In light of these findings, SACN recommends that:

- Free sugars should account for no more than 5% of daily dietary energy intake
- The term free sugars is adopted, replacing the terms Non Milk Extrinsic Sugars (NMES) and added sugars. Free sugars are those added to food or those naturally present in honey, syrups and unsweetened fruit juices, but exclude lactose in milk and milk products
- The consumption of sugar-sweetened beverages (e.g. fizzy drinks, soft drinks and squash) should be minimised by both children and adults

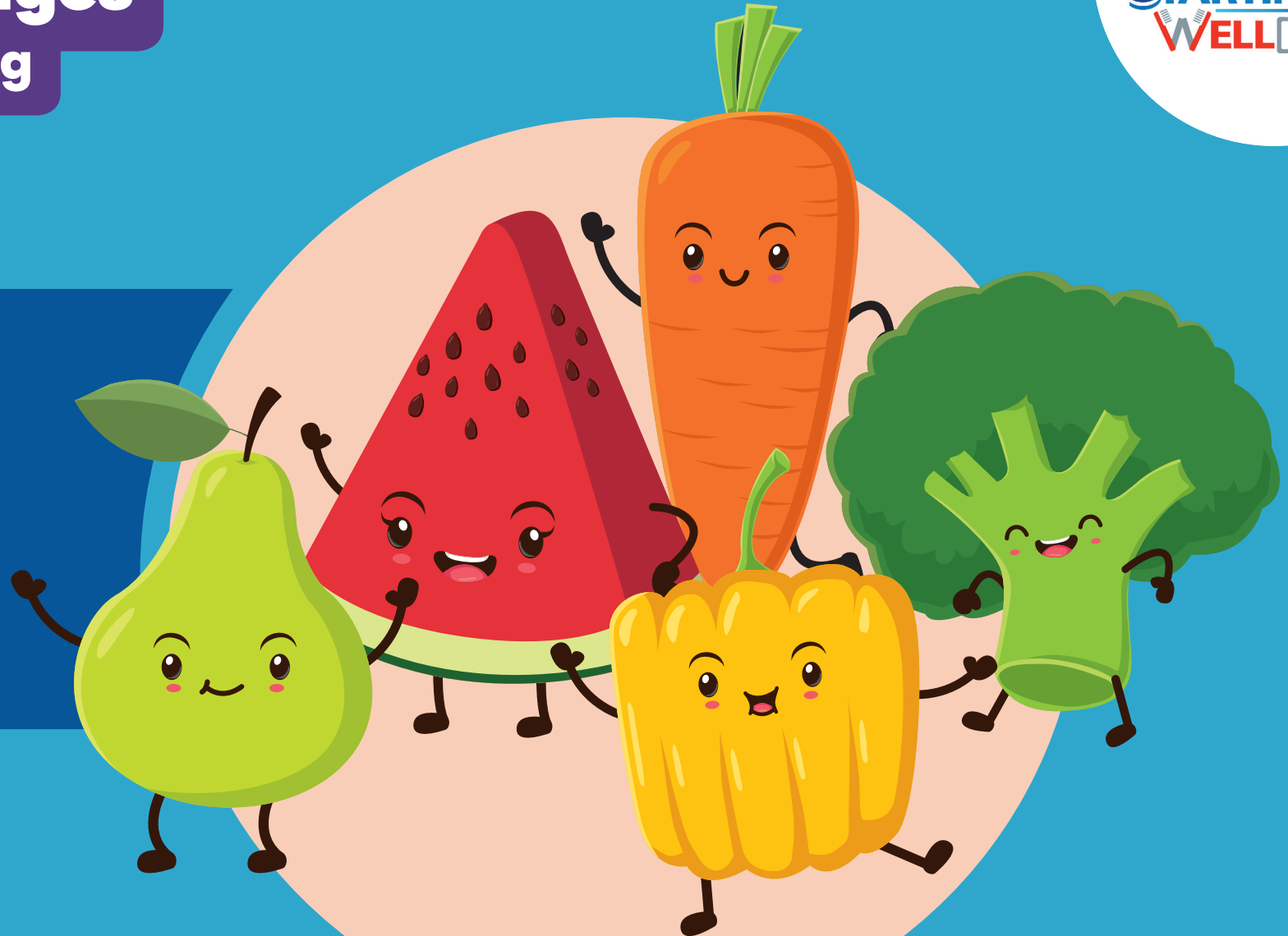
Source: Carbohydrates and Health, SACN 2015

Key messages

Healthy eating

1.

Eat at least
5 portions
of a variety
of fruit and
vegetables
every day



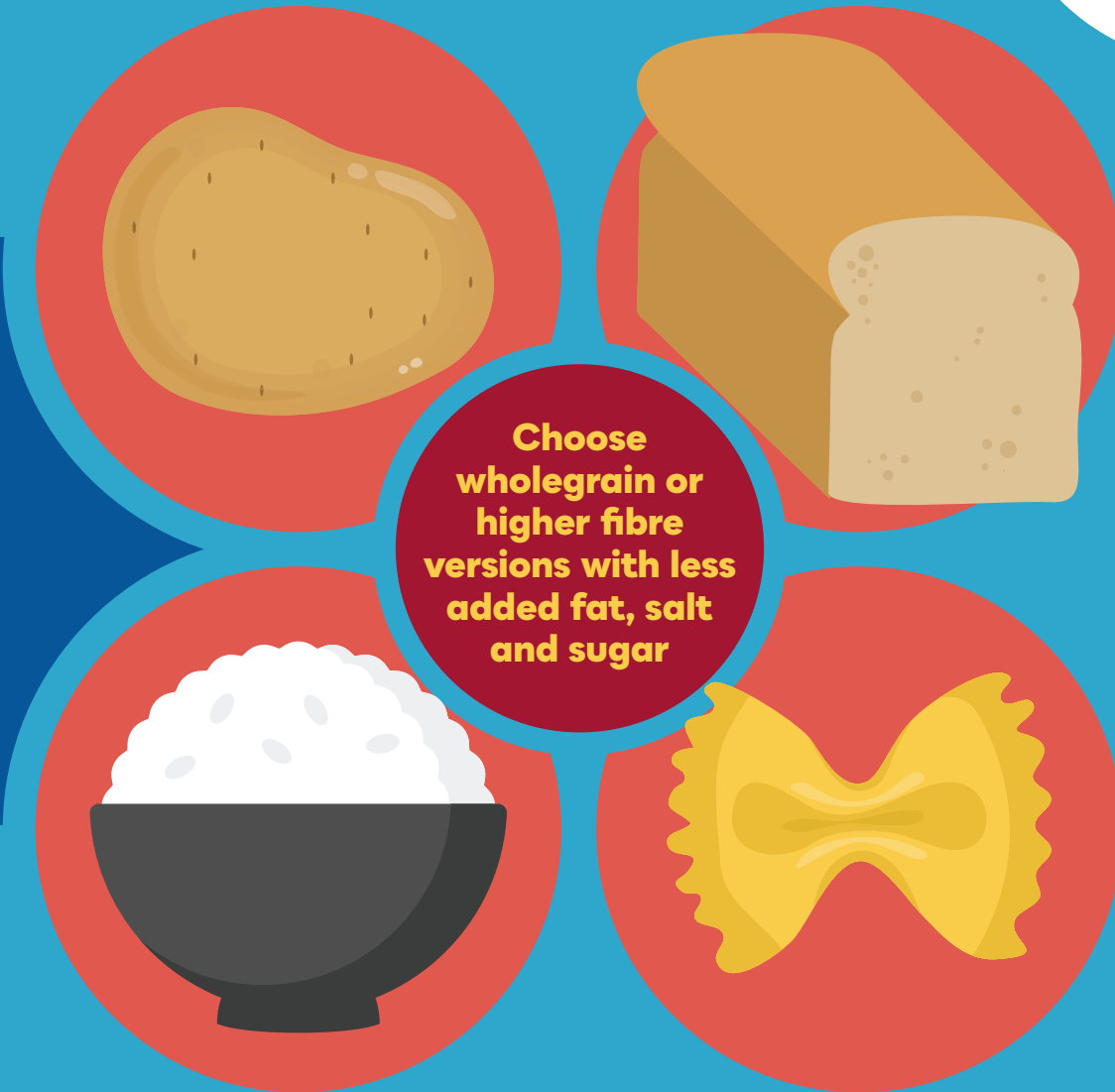
Source: The Eatwell Guide, PHE 2016

Key messages

Healthy eating

2.

Base meals on **potatoes, bread, rice, pasta** or other starchy carbohydrates; **choose wholegrain** where possible



Source: The Eatwell Guide, PHE 2016

Key messages

Healthy eating

3.

Choose lower fat and lower sugar dairy and dairy alternatives



Source: The Eatwell Guide, PHE 2016

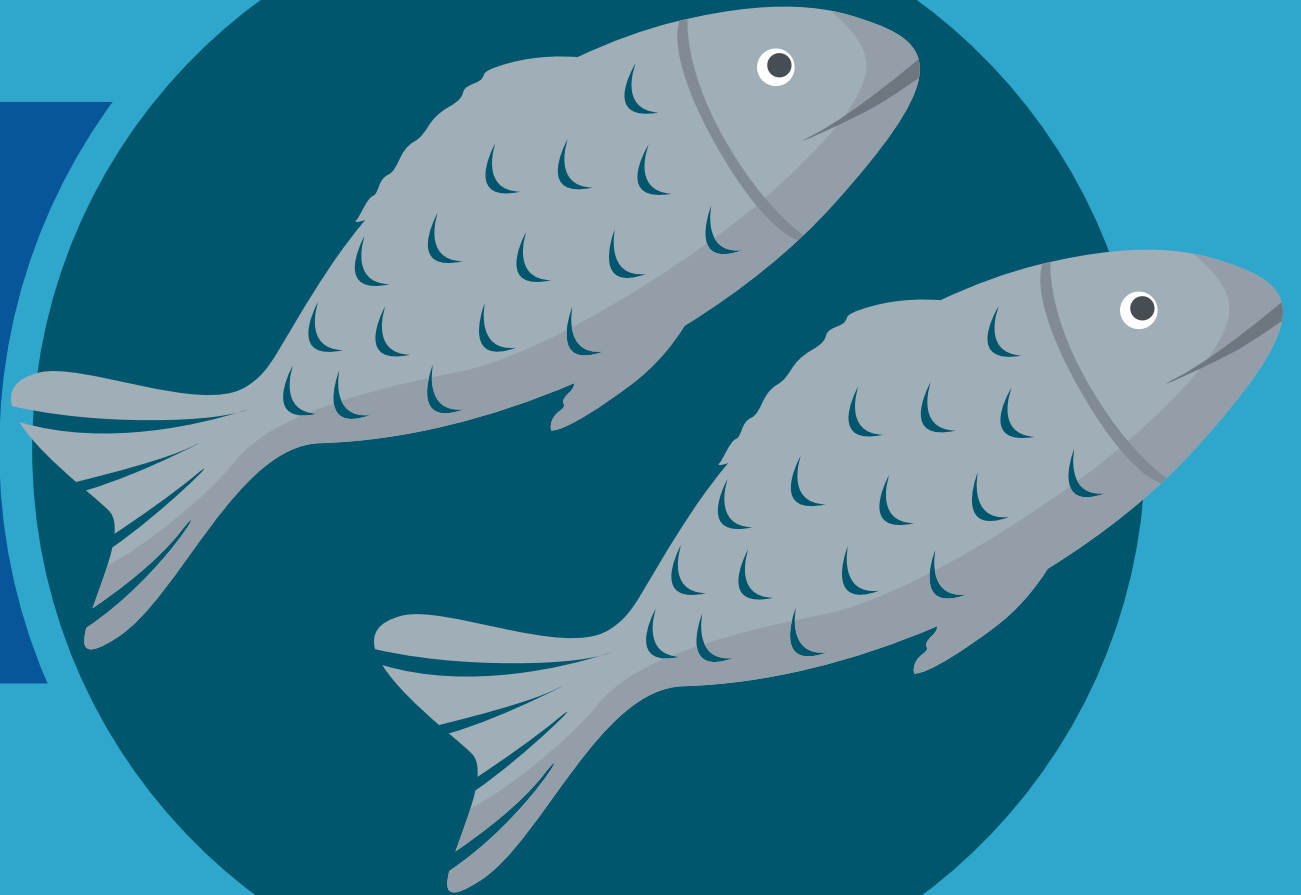
Key messages

Healthy eating

4.

Eat more beans and pulses, two portions of sustainably sourced fish per week, one of which is oily.

Eat less red and processed meat.



Source: The Eatwell Guide, PHE 2016

Key messages

Healthy eating

5.

Choose **unsaturated oils and lower fat spreads** and use in small amounts



Source: The Eatwell Guide, PHE 2016

Key messages

Healthy eating

6.

Drink 6 to 8 cups/glasses of fluid a day

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

Limit fruit juice and/or smoothies to a total of 150ml a day



Source: The Eatwell Guide, PHE 2016

Key messages

Healthy eating

7.

Food and drinks high in fat, salt or sugar, should be eaten **less often and in small amounts**



Source: The Eatwell Guide, PHE 2016

Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

Each serving contains

Energy	Fat	Saturates	Sugars	Salt
1046kJ 250kcal	5g	1.3g	34g	0.9g
	LOW	LOW	HIGH	MED
12.5%	7%	6.5%	38%	15%

of an adult's reference intake

Typical values (as sold) per 100g: 697kJ/ 167kcal

Choose foods lower in fat, salt and sugars

Eat at least 5 portions of a variety of fruit and vegetables every day



Choose wholegrain or higher fibre versions with less added fat, salt and sugar



Water, lower fat milk, sugar-free drinks including tea and coffee all count.
Limit fruit juice and/or smoothies to a total of 150ml a day.



Eat less often and in small amounts

Beans, pulses, fish, eggs, meat and other proteins
Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat



Dairy and alternatives
Choose lower fat and lower sugar options



Choose unsaturated oils and use in small amounts

Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

Lifestyle



Prevention advice
Key messages & evidence
Parents

Key messages Lifestyle

The Making Every Contact Count (MECC) approach encourages individuals to seek support and take actions to improve their own lifestyle. It encourages health professionals to have a “healthy chat” with individuals to change behaviour in relation to:



Maintaining a healthy weight



Drinking alcohol sensibly



Exercising regularly



Stopping smoking



Looking after wellbeing and mental health

Key messages Lifestyle

The dental team can use the MECC approach by giving brief or very brief advice in relation to:



Maintaining a healthy weight/healthy diet to reduce the risk of dental caries, diabetes and heart problems



Reducing alcohol consumption to reduce the risk of oral cancer



Stopping smoking to reduce the risk of oral cancer, periodontal disease, tooth loss, halitosis and staining

MECC as a Behaviour Change Intervention

The delivery of very brief or brief interventions and signposting by frontline professionals has been shown by NICE to be both effective and cost-effective in supporting people to reduce their tobacco and alcohol use, and in improving their physical activity levels and diet.

MECC Level 1:

Very Brief Intervention -

a very brief intervention can take from 30 seconds to a couple of minutes. It enables the delivery of information to people, or signposting them to sources of further help.

It may also include other activities such as raising awareness of risks, or providing encouragement and support for change.



Source: Public Health Guideline PH49, NICE 2014 & Behaviour change interventions diagram by Health Education England - Wessex Team

Tooth brushing & use of fluoride toothpaste



**Prevention advice
Key messages & evidence
0-6 year olds**

Key messages

Tooth brushing

1. Start brushing as soon as the first tooth appears (usually at six months of age)



2. Brush twice daily, last thing at night and on one other occasion



3. Parents/ carers should brush or supervise brushing until their child is at least 7 years of age



4. Do not eat or lick the toothpaste out of the tube



5. After brushing spit do not rinse

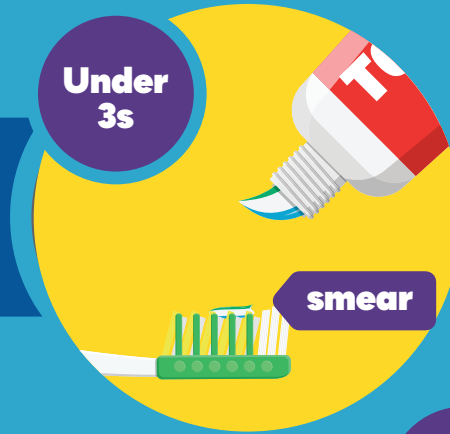


Source: DBOH, PHE 2014

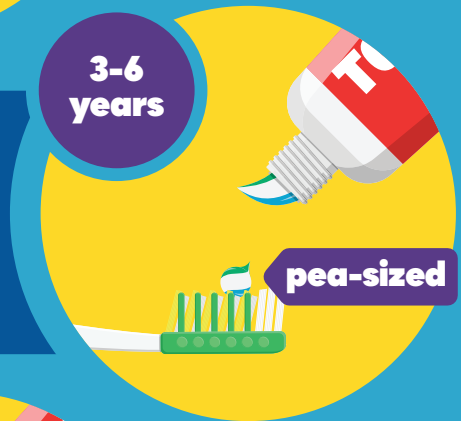
Key messages

Use of fluoride toothpaste

1. Under 3s should use a smear of toothpaste containing no less than 1,000 ppm fluoride



2. 3-6 year olds should use a pea-sized amount of toothpaste containing more than 1,000 ppm fluoride



3. 0-6 year olds giving concern (eg at risk of dental decay) should use a toothpaste containing 1,350-1,500 ppm fluoride



Source: DBOH, PHE 2014

Evidence

Tooth brushing

1.

Brushing twice a day is more effective than once a day

Brushing twice a day reduces caries by a further 14% when compared with once a day



Source: Fluoride toothpastes for preventing dental caries in children and adolescents, Marinho et al. 2003

Evidence

Tooth brushing

2.

Brushing at night is more effective

Fluoride concentration in saliva 12 hours after brushing last thing at night is similar to that at 1-4 hours after brushing during the day



Source: Salivary fluoride concentrations after overnight use of toothpastes, Duckworth & Moore 2001

Evidence

Tooth brushing

3.

Supervised brushing is more effective

Supervised tooth brushing with a fluoride toothpaste saves 24% of tooth surfaces when compared to unsupervised brushing (13%)



Source: Fluoride toothpastes for preventing dental caries in children and adolescents, Marinho et al. 2003

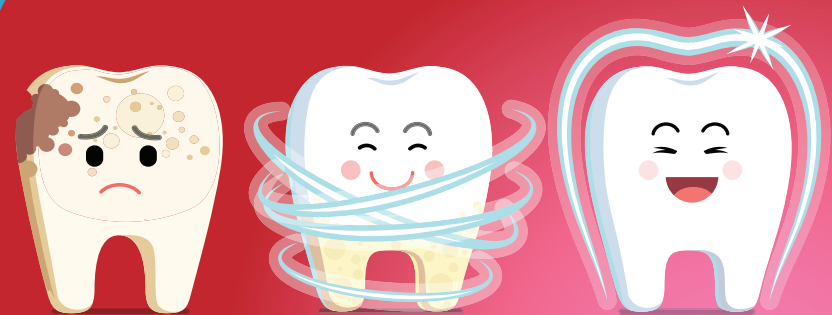
Evidence

Use of fluoride toothpaste

1.

The benefits of fluoride toothpaste are concentration dependent

For every increase in concentration of 1,000 ppm fluoride there is a further 8% reduction in caries and vice versa



increasing
fluoride
concentration

Source: Fluoride toothpastes for preventing dental caries in children and adolescents, Marinho et al. 2003

Evidence

Use of fluoride toothpaste

2.

The impact of variables on the effectiveness of fluoride toothpaste

Optimal

Twice daily
1,450 ppm fluoride
Rinse with small amount
of water

Sub-optimal

Once daily
1,000 ppm fluoride
Rinse with large amount
of water

**Approximately 40-50% difference
in caries prevalence**

Source: Effective oral care habits on caries in adolescents, Chesters et al. 1992

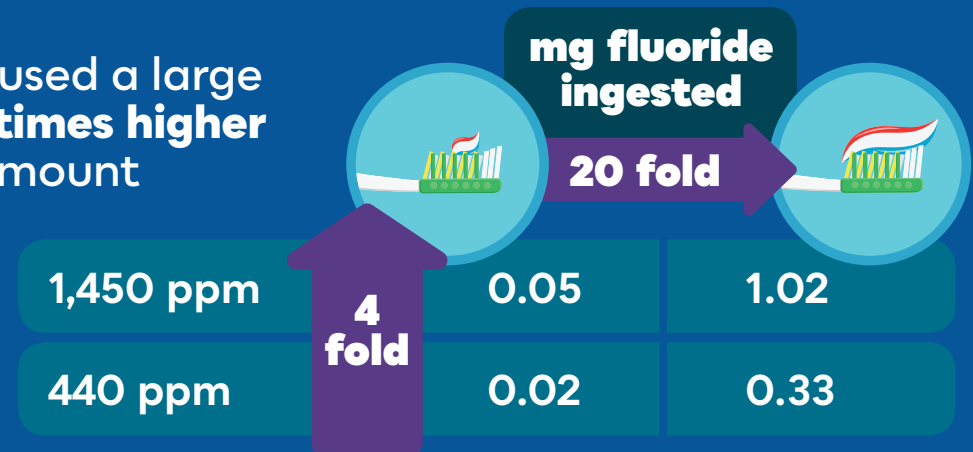
Evidence

Use of fluoride toothpaste and risk of fluorosis

3.

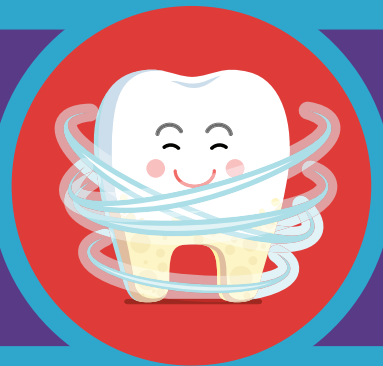
The risk of fluorosis is linked more to the amount of toothpaste used, rather than the concentration (relevant to children under 3). So in order to maximise prevention of tooth decay and reduce the risk of fluorosis use a small amount of 1,350-1,500 ppm fluoride toothpaste

- Risk of aesthetically challenging fluorosis to permanent incisors is relevant only to ingestion of fluoride by children under 3
- The ingestion of fluoride among children who used a large amount of paste could be as much as **twenty times higher** than that for children who used only a small amount
- In contrast there was only a four fold difference in the amount of fluoride ingested between those who used a low fluoride toothpaste and those using one containing 1,450 ppm



Source: Fluoride ingestion from toothpaste by young children, Bentley et al. 1999

Fluoride varnish



**Prevention interventions
Evidence
0-6 year olds**

Prevention Interventions

Fluoride varnish

Apply fluoride varnish to all children aged 3-6 years twice a year



**x 2
per year**

Apply fluoride varnish to children aged 0-6 years giving concern 2 or more times a year



**x 2+
per year**

Evidence

Fluoride varnish

Evidence for the use of fluoride varnish for caries control

37% reduction in decayed, missing and filled surfaces in primary teeth



Source: Fluoride varnishes for preventing dental caries in children and adolescents, Marinho et al. 2013

Dental attendance



NICE recall guidance
Key messages & evidence
All ages

Key messages

Dental attendance

1.

The recommended interval between oral health reviews should be determined specifically for each child and tailored to meet his or her needs, on the basis of an assessment of disease levels and risk of or from dental disease



2.

The recall intervals for children can be 3, 6, 9, and 12 months which is dependent on a risk assessment

3.

Recall interval should be reviewed at the next oral health review

Source: Dental checks: intervals between oral health reviews, NICE 2004

Key messages

Dental attendance

The most consistent predictor of caries risk is caries experience

- **Risk assessment can be carried out using available information on the risk factors below:**
 - Medical history
 - Past dental history i.e. irregular attendance, attendance in pain etc
 - Social history: children from deprived backgrounds, siblings with caries or a history of general anaesthesia for tooth decay
 - Clinical evidence of previous disease
 - Poor plaque control
 - Low salivary flow
 - Frequent sugar consumption between meals
 - Sub optimal use of fluorides
- **High risk children should be recalled every 3 months and:**
 - apply fluoride varnish 2 or more times a year
 - advise use of 1,350 - 1,500 ppm fluoride toothpaste
 - investigate diet
 - prescribe sugar free medicine where possible



Source: Dental checks: intervals between oral health reviews, NICE 2004

Evidence

Dental attendance

Rate of progression of dental caries

- Most of the available information on caries progression emanates from radiographic studies of approximal lesions progression in the permanent teeth of children and young adults
- The time for which caries remains confined to the enamel radiographically varies considerably. A mean time of 3 to 4 years has been reported
- Caution should be exercised in the interpretation of 'mean time' figures as the rate of progression is more rapid in 'high risk' or 'caries active' individuals
- The limited data available on lesion progression in primary teeth suggest that the rate of progression is faster than in permanent teeth
- The rate of progression through enamel is slower in populations and individuals with adequate fluoride exposure

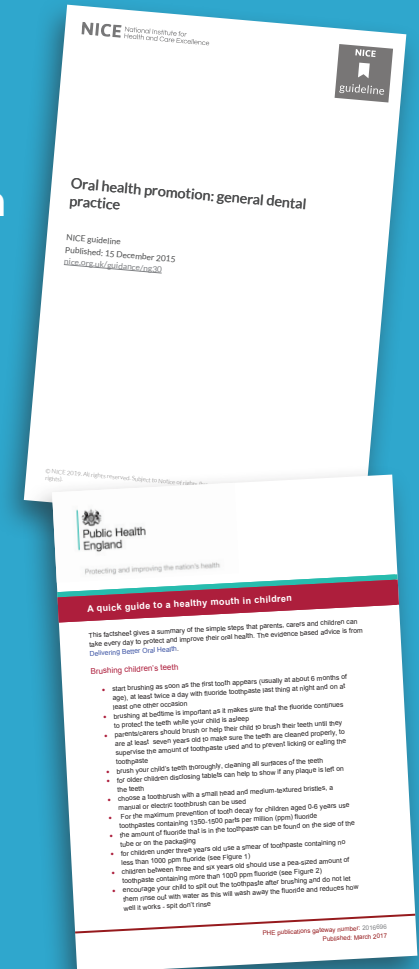


Source: Dental checks: intervals between oral health reviews, NICE 2004

Further Reading

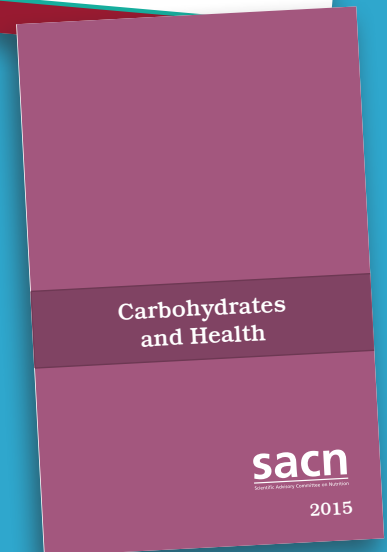
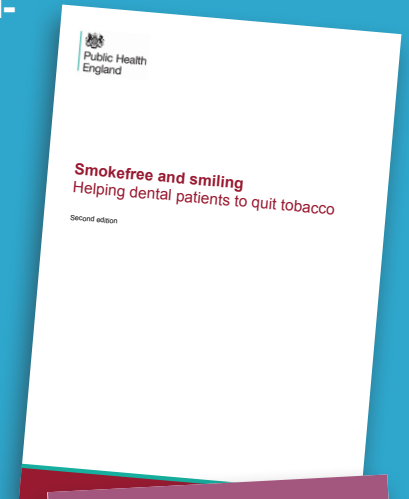


- **Public Health England (2014).**
Delivering better oral health: an evidence-based toolkit for prevention.
<http://po.st/DBOH>
- **Public Health England (2017) Fact sheet from DBOH that summarises simple steps, parents, carers and children can take to protect and improve dental health**
<http://po.st/QG>
- **Child oral health: applying All Our Health**
<https://www.gov.uk/government/publications/child-oral-health-applying-all-our-health>
- **Alcohol Learning Centre (open access)**
<http://www.alcohollearningcentre.org.uk/eLearning/IBA/>
- **E-Learning for Healthcare (requires login)**
<http://www.e-lfh.org.uk/programmes/alcohol/>
- **National Institute for Health and Care Excellence (2015)**
Oral health promotion: general dental practice NG30
<https://www.nice.org.uk/guidance/ng30>
- **NHS Choices: Drinks and cups for babies and toddlers**
www.nhs.uk/Conditions/pregnancy-and-baby/Pages/drinks-and-cups-children.aspx



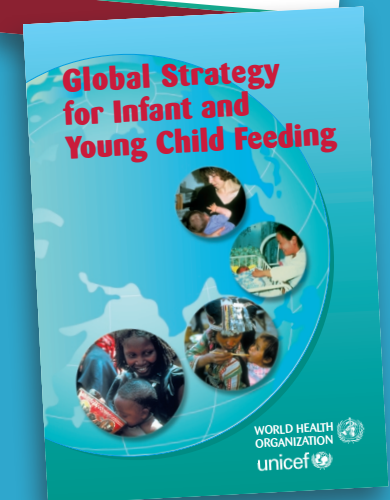
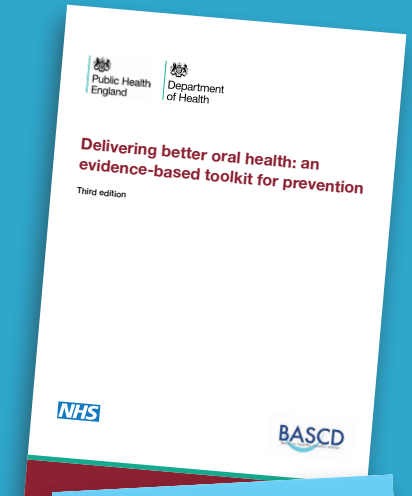
Further Reading

- **Public Health England (2019) Breastfeeding and dental health**
<https://www.gov.uk/government/publications/breastfeeding-and-dental-health/breastfeeding-and-dental-health>
- **Public Health England Campaign resources including a short video**
<https://campaignresources.phe.gov.uk/resources/>
- **Public Health England 2017: Health matters: Child dental health. Resource outlining how health professionals can help prevent tooth decay in under 5s**
<http://po.st/CDH>
- **Public Health England (2014) Smokefree and Smiling**
<https://www.gov.uk/government/publications/smokefree-and-smiling>
- **Scientific Advisory Committee on Nutrition (2015) Carbohydrates and Health**
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/445503/SACN_Carbohydrates_and_Health.pdf
- **Start4life (2019) How to introduce solid foods**
<https://www.nhs.uk/start4life/baby/first-foods>



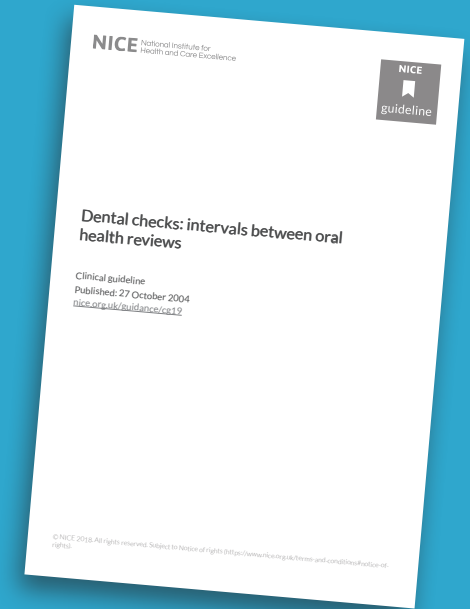
References

- 1. Public Health England (2014).**
Delivering better oral health: an evidence-based toolkit for prevention.
<http://po.st/DBOH>
- 2. World Health Organization and UNICEF (2003).**
‘Global strategy for infant and young child feeding.’
<https://www.who.int/nutrition/publications/infantfeeding/9241562218/en/>
- 3. Scientific Advisory Committee on Nutrition (2018).**
Recommendations for infant feeding.
<https://www.gov.uk/government/news/sacn-publishes-feeding-in-the-first-year-of-life-report>
- 4. Public Health England (2019). Breastfeeding and dental health**
<https://www.gov.uk/government/publications/breastfeeding-and-dental-health/breastfeeding-and-dental-health>
- 5. Public Health England (2016). The Eatwell Guide**
<https://www.gov.uk/government/publications/the-eatwell-guide>
- 6. National Institute for Health and Care Excellence (2014).**
Behaviour change: individual approaches.
<https://www.nice.org.uk/guidance/ph49/evidence>



References

7. **Marinho V, Higgins J, Sheiham A et al. (2003).**
Fluoride toothpastes for preventing dental caries in children and adolescents.
PubMed - NCBI.
<https://www.ncbi.nlm.nih.gov/pubmed/12535435>
8. **Duckworth RM, Moore SS., (2001).**
Salivary fluoride concentrations after overnight use of toothpastes.
Caries Res. 35: 285.
9. **Bentley E, Ellwood R, Davies R (1999).**
Fluoride ingestion from toothpaste by young children. PubMed - NCBI.
<https://www.ncbi.nlm.nih.gov/pubmed/10365494>
10. **Chesters RK et al. (1992). Effect of oral care habits on caries in adolescents.**
<https://www.ncbi.nlm.nih.gov/pubmed/1423447>
11. **Marinho V et al. (2013)**
Fluoride varnishes for preventing dental caries in children and adolescents.
PubMed - NCBI.
<https://www.ncbi.nlm.nih.gov/pubmed/23846772>
12. **National Institute for Health and Care Excellence (2004)**
Dental checks: intervals between oral health reviews. CG19.
<https://www.nice.org.uk/guidance/cg19>



Development of this e-resource



This e-learning resource was written by Public Health England in collaboration with NHS England and Health Education England.



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