ALL WALES SPECIAL INTEREST GROUP SPECIAL ORAL HEALTH CARE

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Oral Nutritional Supplementation and Oral Health

Recommendations for health care professionals to reduce the impact of Oral Nutritional Supplementation (ONS), sip feeding and nutritional advice on dental health

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The All Wales Special Interest Group (SIG) for Special Oral Health Care is a group of Special Care Dentists, Specialists in Special Care Dentistry and Dental Care Professionals who advise the Clinical Directors of Community Dental Services in Wales

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Oral Nutritional Supplementation (Sip Feeds and Snacks) and Oral Health

Malnutrition predisposes to disease, delays in recovery from illness, adversely affects body function, well-being and clinical outcome, and is often unrecognised in the clinical setting. Within dentistry there is a paucity of evidence based research to support the concerns of the dental profession about the cariogenic effects of oral nutritional supplements, especially carbohydrate rich sip feeds for children and adults who are underweight or malnourished. The Scientific Basis of Oral Health Education provides a wealth of evidence that links the frequency of eating snacks that contain sugar and the increase in incidence of dental caries (decay) (Levine & Stillman-Lowe, 2009).

This report highlights the current advice regarding the treatment of malnutrition and makes recommendations for preventive oral health care for health professionals prescribing oral nutritional supplements to reduce the potentially negative impact of food supplements on dental health.

The British Association for Parenteral and Enteral Nutrition (BAPEN) in the MUST Report estimates that one in seven adults in the UK aged 65 years and over is affected by malnutrition (BAPEN, 2003). Estimates for malnutrition are higher in those who are institutionalised; for residents in care homes, this is estimated to be between 20%-50% (BAPEN, 2003). Guidelines on 'Nutritional Support in Adults' (NCCAC, 2006) commissioned by the National Institute for Health and Clinical Excellence (NICE, 2006) state that it is essential that nutritional screening be carried out to identify individuals who are malnourished and that the cause for poor nutritional status should be identified and treated. The Guidelines also considered appropriate methods of feeding people who are still capable of deriving at least some of their nutritional requirements by conventional feeding, and/or have difficulty in swallowing.

Oral nutrition support is the provision of dietary advice to patients on how to increase overall nutritional intake, and the modification of food and fluid by:

- Fortifying food with protein, carbohydrate and/or fat, plus minerals and vitamins and/or
- The provision of snacks and/or oral nutritional supplements as extra nutrition to regular meals and/or
- Changing meal patterns that include frequency of nutritional intake.

1. Reasons for Malnutrition (under-nutrition)

All healthcare professionals must be aware of the signs of malnutrition and refer accordingly. Factors contributing to disease related malnutrition summarised in 'Nutrition support in adults' (NCCAC, 2006; NICE, 2006) are reproduced in Table 1.

Table 1 Factors contributing to disease related malnutrition

Problem	Cause					
Impaired intake	Poor appetite due to illness (major & common cause);					
	pain/ nausea when eating;					
	depression/anxiety;					
	 food aversion; 					
	medication;					
	drug addiction.					
	Inability to eat:					
	 diminished consciousness; 					
	confusion;					
	 weakness or arthritis in arms or hands; 					
	dysphagia;					
	• vomiting;					
	 painful oral problems including poor dentition; 					
	 restrictions imposed by surgery or investigations. 					
	Lack of food:					
	• poverty;					
	 poor quality diet at home, hospital or in care 					
	homes;					
	 problems with shopping or cooking. 					
Impaired digestion	Medical and surgical problems affecting the stomach,					
and/or absorption	intestine, pancreas or liver.					
Altered	Increased or changed metabolic demands related to					
requirements	illness, surgery, organ dysfunction, or treatment.					
Excess nutrient	Gastrointestinal losses:					
losses	• vomiting					
	diarrhoea Gistula a					
	• fistulae					
	• stomas					
	Losses from nasogastric tube and other drains					
	Other losses e.g. skin exudates from burns.					

2. Nutritional Assessment

When malnutrition is suspected, an assessment using the 'Malnutrition Universal Screening Tool' (MUST) (King et al 2004; BAPEN 2003) is recommended.

3. Body Weight

The assessment of nutritional risk for malnutrition by measuring changes in body weight is an important indicator of nutritional status. There are many methods of assessment including height and weight (Body Mass Index [BMI]), waist circumference and muscle mass.

Identification of malnourishment is summarised in 'Nutrition Support in Adults' (NCCAC, 2006; NICE, 2006):

- Rapid unintended weight loss greater than 10% within the last 3-6 months.
- BMI of less than 18.5 kg/m2
- BMI of less than 20kg/m2 and unintentional weight loss greater than 5% within the last 3-6months.
- Eaten little or nothing for more than 5days/or not likely to eat little or nothing for the next 5 days or longer.
- Have a poor absorptive capacity and /or have high nutrition losses /or increased nutritional needs.

4. Management of Malnutrition

The guidelines emphasise that healthcare professionals should ensure that nutritional care provides:-

- Food and fluid of adequate quantity and quality in an environment conducive to eating
- Appropriate support, for example modified eating aids, for people who can potentially chew and swallow but are unable to feed themselves
- That all those who require nutritional support receive coordinated care from a multidisciplinary team.

Nutritional support may take several forms:-

- Improve energy and nutrient intake from foods
- Fortify foods
- Sip feed and other forms of supplementation
- Enteral and parenteral nutrition.

4.1 Oral Nutritional Support

In the first instance, individuals are advised to increase frequency of food consumption to every 2-3 hours by having a small meal, snack or milk based drink as indicated in the 'Good Food Leaflet' (Thomas 2008). Energy rich foods that include jams and preserves, cakes, biscuits, pastries and chocolate to increase calorie intake are encouraged.

Nourishing sip style feeds such as milkshakes, fruit juices, yoghurts and soups are also recommended. These are often advised to be taken 'between meals', although Delivering Better Oral Health recommends that dietary supplements for children and those with special needs should be given at meal times to reduce the risk of dental caries (DoH, 2007).

4.2 Sip Feed and Other Supplements

'Sip feed' is a term which is often used to describe oral nutritional supplements (ONS) that are given to increase nutritional intake. There are many prescribable supplements that are nutritionally complete and can be 'sipped' throughout the day. They are very expensive and should not be prescribed without the involvement of a dietitian to ensure all other methods of increased nutritional intake have been explored.

Oral supplements (frequently prescribed for sip feeding) are regarded as an addition to food and not a food substitute unless the patient cannot face food on the occasional day for some reason. Available dietary carbohydrates in most ONS are derived from sugars, principally glucose, fructose and galactose (monosaccharides) and sucrose, lactose and maltose (disaccharides) as well as starches (polysaccharides) [Appendix 1].

Many malnourished children and adults are prescribed ONS if insufficient energy cannot be achieved by ordinary food and drink intake. These supplements may show a small improvement in clinical outcomes but the evidence in a Cochrane Systematic Review is uncertain (Baldwin & Weekes, 2008). Up to three cartons maybe prescribed per day resulting in an increase in 250-900 calories per day. As wastage is an important factor, compliance must be monitored as well as weight, and once appetite has returned and normal eating patterns resumed, the supplement must be reduced and then discontinued.

5. Recommendations

The All Wales Medicines Strategy Group (AWMSG, 2006) identified concerns about the use and misuse of ONS and recommended the development of:-

- A multidisciplinary community nutrition team approach
- Patient information leaflets
- Training in sip feeding for healthcare professionals
- Strategies to improve nutritional intake from food
- Oral Nutrition Integrated Care Pathway.

The Quality Improvement Toolkit for Oral Nutritional Support (Sip Feeds) (NPHS Wales, 2009) has compiled a checklist to ensure the provision of quality care when prescribing ONS. Although the checklist identifies oral problems and poor dentition as risk factors for reduced nutritional intake, it does not include an Oral Health Risk Assessment (OHRA).

The inclusion of an OHRA would identify factors that may be affecting the individual's ability to eat and highlight the need for a dental referral to treat symptoms, and provide oral health preventive advice if nutritional support/sip feeding is prescribed as recommended in Fundamentals of Care (WAG, 2003) and Essence of Care (DoH, 2001). The OHRA Appendix 2 may be adapted and completed by the individual, healthcare professionals or care staff.

The development of local multidisciplinary oral nutrition care pathways must include a link to dental teams (Appendix 3). An OHRA would alert the health care professionals or care staff to follow an oral care pathway that comprises oral health preventive regimes for those children and adults who have their own natural teeth to reduce the risk for dental decay (Appendicies 4 & 5). Adults and children receiving ONS are advised to seek an appointment with their dentists as soon as possible. For those who require more specialist advice and dental care provision, the local Community Dental Service should be contacted.

With information and support through training, all healthcare professionals will understand the association between poor oral health and malnutrition. Any individual being prescribed ONS should be provided with oral health prevention information and professional intervention involving fluoride supplementation should they have their own natural teeth. Examples of patient information leaflets for prescribers or dispensers of ONS such as dietitians, general medical practitioners, hospital doctors and pharmacists are found in Appendices 6 & 7.

By following SIG's recommendations for vulnerable adults and children who are malnourished, and prescribed ONS, the risk of increased dental decay from frequent consumption of drinks, snacks or sip feeds will be reduced.

The All Wales Special Interest Group/Special Oral Health Care recommends:

- Raising awareness of the increased risk of dental caries associated with oral nutritional supplements and increased frequency of high sugar content meals, snacks and drinks.
- Training for nutritional care teams and prescribers of oral nutritional supplementation on the impact of oral nutritional supplements and other dietary advice on dental health
- Local protocols that must include oral health care information
- Oral Nutrition Care pathway involving multidisciplinary community teams with links to appropriate dental teams
- The use of an Oral Health Risk Assessment for appropriate and timely routine referrals to the dental team
- Patient information leaflets describing the need for oral health care that ensures all children and adults who are dentate be given preventive oral health care advice
- Access to appropriate dental care services (Community Dental Services, Community /Salaried Dental Service or General Dental Services).

The Oral Nutritional Care Pathway and local protocols will advise when referral to a dental team is indicated by utilising an Oral Health Risk Assessment tool.

CASE STUDY

An 86 year old woman with dementia who resides in a nursing home has been losing weight for sometime resulting in a BMI of 17. The Community Dietitian assessed the patient and advised a more appetising menu and soft diet that included an increase in small, between meal snacks that contain sugar. She also recommended that a carbohydrate nutritional oral feed be left by the patient's side and that she should be encouraged to sip throughout the day. The woman has her own natural teeth that she struggles to brush on a daily basis. The nursing home has a robust oral health care protocol that highlights the need to contact the local community dental team when nutritional supplementation is advised. The dental team discover that the patient has a painful abscess that may have contributed to her reduced oral intake and subsequent weight loss. Treatment is provided for the dental infection and an oral care plan is drawn up which includes extra fluoride supplementation as well as staff training provided by the Oral Health Promotion team in order to encourage and assist the resident with oral health care.

Recommendations for local protocols and Oral Nutritional Supplementation Care Pathways

- 1) Development of dental services which are acceptable, accessible and specialise in care for vulnerable people in residential care especially care homes.
- 2) Oral Risk Assessment criteria that identify risk factors for oral health to be included in the overall assessment/malnutrition Care plan in order to:
 - Identify individual oral care needs and develop a Personal Oral Care Plan
 - Provide appropriate preventive advice, fluoride supplementation and oral hygiene equipment
 - Identify need for and access to dental services.
- 3) Provision of oral health advice and support for children and adults who are malnourished and require oral nutritional supplementation.
- 4) Provision of oral health education and promotion for health care professionals and carers of people who are malnourished and the individuals themselves that address
 - Oral health needs
 - Oral hygiene techniques and fluoride for prevention of caries and periodontal disease
 - Oral health care problems associated with high sugar containing foods and oral nutritional support (sip feeds).
- 5) Establish specialist dental services that link into care pathways to ensure:
 - Access to emergency care
 - Appropriate specialist dental services especially for those that require special care dentistry (dysphagia, dementia, brain injury etc)
 - Support for health professionals and carers in oral care
 - Procedures for continuity of dental care on discharge from hospital and rehabilitation
 - The workforce has appropriate skills mix.

Training issues for prescribers of Oral Nutritional Supplementation and the dental team

- 1) Health care professionals should have knowledge and understanding of:-
 - Scientific basis for oral health and disease
 - Oral risk assessment criteria and tools for assessment
 - Risk factors for oral health and oral side effects of nutritional supplementation
 - Current oral care practices appropriate to individual needs
 - Practical oral care techniques that encourages fluoride supplementation
 - Oral hygiene aids to support clients with oral hygiene
 - Eligibility criteria for exemption for the cost of NHS dental care
 - Availability and access to local dental services.
- 2) Dental team should have formal training in:-
 - The effects of malnutrition and its impact on oral health
 - Identification of patients requiring more specialised dental care services
 - Oral health promotion and preventive regimes for this client group
 - Dental care management
 - Legislation around incapacity to consent for care.

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Appendix 1

Types of Sip Feeds

Milk based, ready to drink

Milk based, ready to drink products (supplied as 175-200ml tetrapaks) are the most commonly used sip feeds. They are nutritionally complete and provide 1.0-1.7 kcals/ml. Although generally used as food supplements they can be used short term as the sole source of nutrition if required.

Examples: Ensure Plus, Fortisip, Fortifresh. Clinutren 1.5, Enrich Plus, Complan ready-to-drink, Resource shake.

Milk Based, fibre enriched

Fibre enriched, milk based feeds are nutritionally complete and ready to drink. They have an added fibre blend (2.5-4.5g fibre /pack), thus they mimic the normal diet. They are useful for patients with constipation or physical difficulties and for those taking opioids.

Examples: Entera Fibre plus, Enrich Plus, Fortisip Multifibre.

Fruit juice based

Fruit juice based feeds are not nutritionally complete because they are fat free and therefore cannot be used as a sole source of nutrition. However they provide 1.25-1.5 kcal/ml and contain protein, vitamins and minerals. They are an alternative supplement for patients who dislike or cannot tolerate milk based feeds.

Examples: Enlive, Fortijuice, Provide Xtra, Clinutren Fruit.

Powdered supplements

Powdered supplements are not nutritionally complete. Some are prescribable (e.g. Scandishake) but others (e.g. Build up and Complan) are not and can be bought over the counter. They can be reconstituted with fresh milk or water and are available in sweet and savoury flavours. Products such as Neutral Build-up and Complan can also be added to foods such as soups, puddings and mashed potato.

Examples: Neutral build-up, Complan.

Semi solid supplements

Semi solid supplements provide 1.25-1.5 kcal/g; they are frequently used for dysphagic patients who are at risk of aspirating fluids. These are not suitable for use as the sole source of nutrition

Examples: Formance, Fortipudding, Clinutren Dessert.

High protein supplements

High protein supplements are not suitable as a sole source of nutrition. They can be useful in patients with burns or fistulae because of the high protein content.

Examples: Fortimel (liquid), Protein Forte, Maxisorb Powder.

Energy supplements

Energy supplements are not suitable as a sole source of nutrition. They mainly contain carbohydrate and provide no protein. They are available in powder or liquid form. Energy supplements can be used to increase calorie intake in patients who cannot tolerate other sip feeds, or, in renal patients whose fluid intake needs to be restricted. The liquid products can be diluted and used as a squash or added to puddings. The powders are high in calories and can be incorporated into drinks soups and puddings without affecting taste. Examples: Polycal, Maxijul, Caloreen.

The British National Formulary (2008) adds a note of caution to prescribers of supplements.

Foods included in this Appendix may contain cariogenic sugars and patients should be advised to take appropriate oral hygiene measures

References

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Oral Health Risk Assessment

Oral health risk assessment by health care professionals and carers provides a tool for opportunistic identification of people who have oral/dental problems which affect their nutritional intake and which may lead to the need for oral nutrition supplementation. This Oral Health Risk Assessment may be adapted by wards, care homes and community teams as part of nutritional supplementation pathway. It should be used in collaboration with local/specialist dental teams order to facilitate access to an appropriate dental service.

1. 1	Does the patient have natural teeth?	NO	YES Complete oral care plan and/or refer to dental team	Don't Know Check with patient
	Will the patient require nutritional supplementation for more than 3 weeks?	02	YES Complete oral care plan and refer immediately to dental team for fluoride supplementation advice	Don't Know Check with prescriber
3.	Does the patient have any problems? (Pain, discomfort, difficulty eating, denture problems, ulcers, dry mouth, halitosis) If YES describe the problem.	NO	Complete oral care plan and/or refer to dental team	Don't Know Check with patient. Observe for possible oral pain or discomfort
4.	Is the client taking any medication? (Check the BNF for any oral side effects)	NO	YES Complete oral care plan and/or refer to dental team	Don't Know Check with patient / drug chart
5.	Does the patient require assistance for oral health care	NO	YES Complete oral care plan	Don't Know Assess the patient
6.	Is urgent dental treatment required?	NO	YES Referral to dental team	Don't Know Check with dental team
7.	Does the patient visit a dentist regularly? If YES record name and address	YES	NO Check with patient and refer to dental team	Don't Know Check with patient

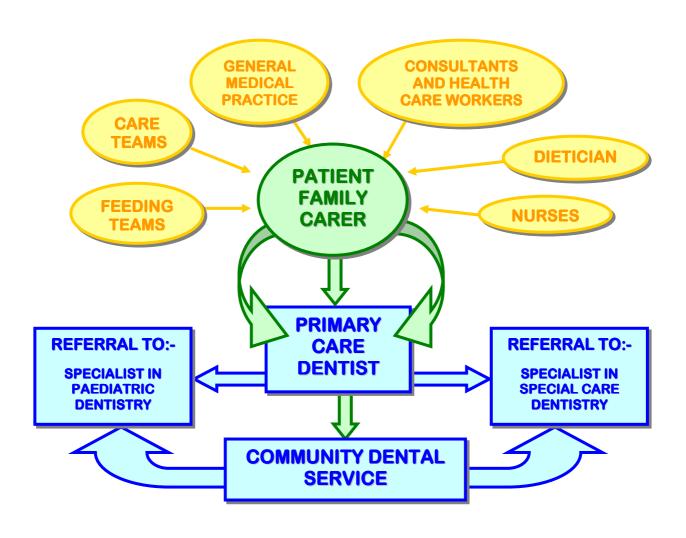
A response in the highlighted areas signifies a need for further investigation or action.

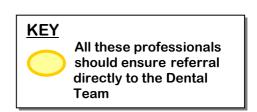
Adapted from Griffiths J, Boyle S. Chapter 6 Oral Assessment in *Holistic Oral Care a guide for Health Professionals* (2005) 2nd Ed. Pub Stephen Hancocks Ltd.

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Appendix 3

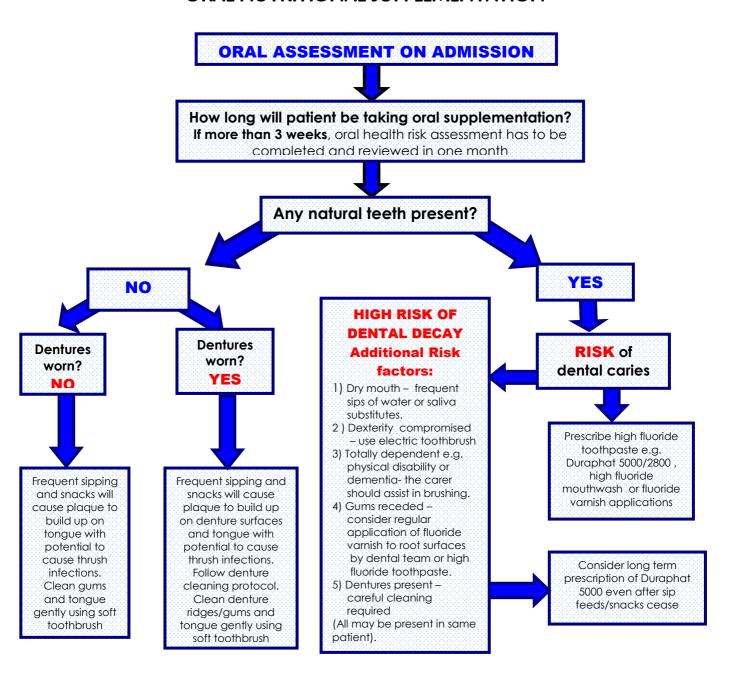
Oral Care Pathway for Nutritional Supplements





Appendix 4

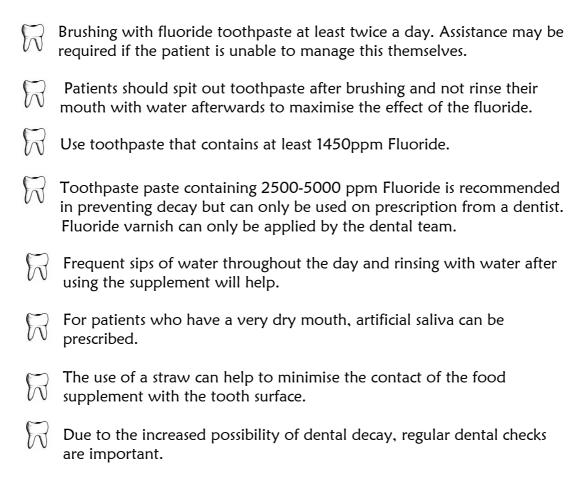
ORAL HEALTH PREVENTATIVE NEEDS FOR THOSE PRESCRIBED ORAL NUTRITIONAL SUPPLEMENTATION



NB In all cases; be aware of any potential swallow problems and If present follow dysphagia guidelines for mouthcare, taking care to avoid risk of aspiration of toothpaste/foam/ during toothbrushing

Oral Health Advice for Patients on Food Supplements

Oral nutritional supplements are usually prescribed for those children and adults who are malnourished and under weight. Food supplementation often consists of foods, drinks and sip feeds containing increased carbohydrate content. Frequent snacking or 'sipping' of these supplements throughout the day increases the chances of dental decay in people who have their own natural teeth. Whilst it is important to follow nutritional advice given by professionals, the potentially harmful effects to the teeth caused by using these food supplements can be minimised. The following programme of prevention is recommended:-



The Dental Team will be able to give further advice on prevention.

SIP FEED GUIDELINES LEAFLET

Front and Back of leaflet shown below:-

TO BE COMPLETED BY PHARMACIST Sip Feeds Started: Types/Names of Sip Feeds:



Dental Alert

You have been prescribed oral nutritional supplements (sip feeds) to increase your nutritional intake.



Sip Feeds may contain Sugars which can damage your teeth

Middle Section of leaflet shown below:-

So PLEASE can you:-

- Book an appointment with your dentist as soon as possible so that they can plan your dental health.
- Inform your Dentist about the length of time you will be taking sip feeds.
- Drink water in between sip feeds to reduce the damage of sugars to your teeth.
- Brush your teeth at least twice a day with fluoride toothpaste. Brush for 2 minutes and just spit out the toothpaste after brushing – don't rinse away the toothpaste with water.



 Ask your dentist whether you need a prescription for a stronger fluoride toothpaste.



 Get your <u>Digition</u> and /or Doctor to review your need for Sip Feeds regularly.



TAKE THIS WITH YOU TO YOUR NEXT DENTAL APPOINTMENT TO SHOW YOUR DENTIST

If you are too ill to visit your Dentist, you can ask for a home visit by your own Dentist or ask to be referred to your local Community Dental Service.

Date of Next Appointment: ___



To be completed by Patient – or Patient's Representative.

NUTRITIONAL SUPPLEMENTS AND GOOD ORAL HEALTH ADVICE SHEET

Front and Back of advice sheet shown below:-

This page to be used for Local Dental Services and Helpline Numbers All Wales Special Interest Group/Special Oral Health Care

Grwp Diddordeb Arbennig Cymnu Gyfan - Gofal Iechyd



Nutritional Supplements and Good Oral Health Advice Sheet

Middle Section of advice sheet shown below:-

If you have been advised to drink high energy drinks or increase snacks between meals that contain sugar this may lead to tooth decay.

In order to protect your natural teeth please follow these simple instructions.



- 1. Brush your teeth twice daily with a fluoride toothpaste
- 2. Have a sip of water after sipping high energy drinks or snack.
- 3. Ensure you visit your dentist for routine check-ups.
- 4. Your dentist can prescribe toothpaste or mouthwash with extra fluoride to help protect your teeth.
- 5.Do NOT rinse with water after toothbrushing:

"spit don't rinse"

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