



# GLOBAL NEWS SERIES

## FOR HEMOPHILIA NURSES

### *In this issue:*

This Issue's Focus:  
Dental Care

### *This Issue's Focus:*

## Dental Care for Persons With Bleeding Disorders

Dental care and the prevention of dental problems are of great importance, not only to quality of life and nutrition, but also to avoid the dangers associated with complications. Dental health and oral hygiene are a priority for persons with bleeding disorders or congenital bleeding tendencies since bleeding after a dental treatment may cause severe or potentially fatal complications.

*In this issue:*

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## Editor's Message

We are excited to bring you another edition of the Global News Series for Hemophilia Nurses. The purpose of the Global News Series is to share knowledge, experience and current events among hemophilia nurses around the world. The topics for each edition are from suggestions we receive. Subject matter experts from the global hemophilia community help develop the content. We believe these experts are the best qualified to suggest topics for the newsletter, as well as to ensure the accuracy, applicability and usefulness of the information. Our next edition will focus on the psychological issues a person with a bleeding disorder faces.

Please continue giving us suggestions for topics and share your knowledge by participating on the advisory board. To provide feedback and suggestions or to express interest in becoming a subject matter expert, please e-mail us at [contactus@solutionsight.com](mailto:contactus@solutionsight.com) or write us at SolutionSight, Inc., 2191 Avalon Drive, Buffalo Grove, IL 60089. Baxter Healthcare Corporation sponsors the Global News Series by providing an educational grant.

Cindy Jo Ping, RN, BSN, MBA  
Editor

## Advisory Board

The Global News Series for Hemophilia Nurses is pleased to introduce the subject matter experts for this edition. We would like to thank them for sharing their knowledge and expertise on this topic.

**Anne Grogan** MSc, BNS, RGN, Dip HSM is Nurse Manager at the National Centre for Hereditary Coagulation Disorders (NCHCD), St. James's Hospital, Dublin, Ireland. Anne is currently the nurse representative on the National Hemophilia Council. **Dr. Alison Dougall** B.Ch.D, MSc is Lecturer and Dental Consultant in Medically Compromised Patients at the Dublin Dental University Hospital and NCHCD. Alison is Vice Chair of the World Federation of Haemophilia Dental Committee.

**Colette Ivers**, RN, and **Helen Shiel** BA, RN, are Hemophilia Nurses at the NCHCD and work closely with Alison in relation to the dental care of all adult patients with bleeding disorders.

**Dr. Kirsten FitzGerald** BDentSc, MFD (RCSI), MS is a Consultant Paediatric Dental Surgeon, Dental Department at Our Lady's Children's Hospital Crumlin, and at the Dublin Dental University Hospital. Kirsten works with **Imelda Kelly** BNS, RN, RCSN who is a Hemophilia Nurse Specialist at Our Lady's Children's Hospital Crumlin (OLCHC) Dublin.

Together, the group works within the wider multidisciplinary team to set the standards for comprehensive dental care of all patients with bleeding disorders in Ireland.

## Importance of Dental Care For Persons With Bleeding Disorders

**T**he presence of healthy teeth can enhance your appearance, ability to eat, and enjoyment of food. Teeth also have a positive effect on comfort, confidence, speech, social interactions, and longevity. Dental conditions contribute to a range of problems for persons with bleeding disorders, including restricted activity, bed days, work loss, and absence from school for children.



- Limited food choices
- Impaired digestion of food
- Avoidance of food and loss of eating pleasures
- Nutritional imbalances contributing to or resulting in illness
- Reduced social contacts and intimacy
- Disturbance of self-image, self-esteem, and well-being

Persons with bleeding disorders and their families confront the complexities of bleeding disorders on a daily basis. This can result in neglect of their oral and dental health. Individuals

with bleeding disorders may develop the same dental problems as individuals without bleeding disorders; however, the problems are magnified by their bleeding disorder. For example, pressure alone after dental extraction or local anesthetic injections may not be enough to control bleeding; bleeding after dental procedures may become severe or even life-threatening, thus proper dental and oral preventive care is of the utmost importance. Starting early in life, optimal oral hygiene and appropriate dental care may help prevent the development of dental problems that may require interventions for bleeding episodes. It is never too late to become more conscientious about oral and dental care. 🌐

Pain in the mouth can cause discomfort and limit a person's ability to properly chew and swallow. Without this ability, the following can result:

### *In this issue:*

#### Importance of Dental Care and Barriers to Dental Care

### Barriers To Dental Care

**B**arriers to good oral health for persons with bleeding disorders exist for many reasons. Medical, nutritional and emotional needs can often seem to outweigh the need for daily oral hygiene and regular visits to the dentist. Quite often, dental health is neglected for fear of bleeding during procedures. Dentists are often anxious about delivering treatment to people with bleeding disorders.

Lack of resources, money, education, awareness, availability and access to preventive and routine dental care is well documented in this population. Poor dental health increases the need for factor concentrate resulting in increased stress on persons with a bleeding

disorder and their significant others, as well as increased healthcare costs and increased use of healthcare resources. These include the cost of factor concentrate, topical hemostatic agents, other products used during their dental procedures, dentists' costs, treatment center costs and the cost of operating room time, if required. Therefore, many protocols for the dental management of persons with bleeding disorders have been developed over the last few years. Their implementation has enabled persons with bleeding disorders to be treated by their local dental practitioners on a shared-care basis, encouraging regular dental care for persons with bleeding disorders. The implementation of

dental protocols has removed many barriers to dental care access, which can now be provided by a local, well-informed and supported general dental practitioner.

The first step toward healthy teeth and gums is finding a dentist who is familiar with or is willing to learn about bleeding disorders. Ideally, persons with a bleeding disorder should have their dental care coordinated centrally at the treatment center. When possible, integrating dental visits with their routine outpatient hematological appointments provides regular monitoring of oral health and the early detection or treatment of oral diseases. 🌐

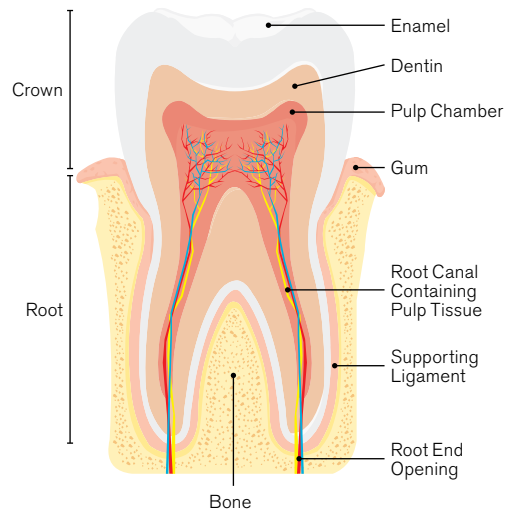
## Teeth and Gums

**H**uman teeth start to develop in the fetus around the first month of pregnancy. By birth, the first set of teeth (called primary, deciduous, milk or baby teeth) is formed. There are two successive sets of teeth during life. As seen in the picture below, human teeth are complex and have many components required for proper growth and function.

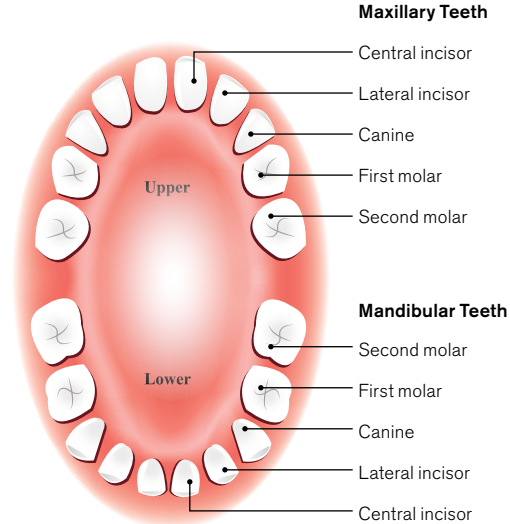
Primary teeth consist of 20 teeth—four incisors, two canines and four molars on each jaw. The primary teeth usually begin to erupt in the first year of life. Eruption of all 20 teeth is usually complete after 2 ½–3 years.

The second set of teeth, called permanent teeth, erupt between five and six years of age. In many individuals, no third molars (wisdom teeth) are present, giving a total of 28-32 teeth in the permanent dentition. 🌐

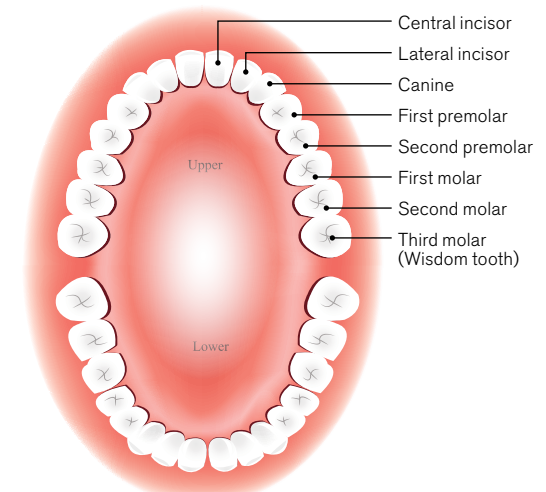
**Structure of a Normal Tooth**



**Dental Arch of a Child**



**Dental Arch of an Adult**



*In this issue:*

Teeth and Gums

## Risk Assessment for Oral Disease

The impact of oral disease for persons with bleeding disorders is significant, yet oral disease is preventable and reversible. The best way to avoid mouth bleeding and serious dental problems is by reducing the risk of caries/cavities (tooth decay) and gum disease. Therefore, preventive dental care and good oral hygiene habits should start early and remain a priority throughout life. It is important

to treat dental problems that do occur as soon as possible.

Children should begin to receive oral health risk assessments by six months of age and continue through all stages of life as the risk factors change. The Caries Risk Assessment Tool (CAT) can be used to determine the relative risk of caries for the person with a bleeding


disorder. Conducting a risk assessment for the person with a bleeding disorder when they are very young will identify parents (usually mothers) and infants with a high predisposition to caries. Obtaining a simple dental history from the parent that includes questions directed at dietary practices, fluoride exposure, oral hygiene, utilization of dental services, and the number and location of the parent's dental fillings, as this can give a relative indication of the parent's baseline decay potential. Frequent sugar intake, low fluoride exposure, poor oral hygiene practices, infrequent utilization of dental services, active decay and/or multiple dental fillings in multiple quadrants of the mouth indicates a high caries risk. The American Academy of Pediatric Dentistry (AAPD) Caries Risk Assessment Tool is provided as a reference tool.

### American Academy of Pediatric Dentistry Caries Risk Assessment Tool (CAT\*)

	LOW RISK	MODERATE RISK	HIGH RISK
<b>Clinical Conditions</b>	No carious teeth in the past 24 months No enamel demineralization (enamel caries "white-spot lesions") No visible plaque; no gingivitis	Carious teeth in the past 24 months 1 area of enamel demineralization (enamel caries "white-spot lesions") Gingivitis	Carious teeth in the past 12 months More than 1 area of enamel demineralization (enamel caries "white-spot lesions") Visible plaque on anterior (front) teeth Radiographic enamel caries High titers of mutant streptococci Wearing dental or orthodontic appliances Enamel hypoplasia
<b>Environmental Characteristics</b>	Optimal systemic and topical fluoride exposure Consumption of simple sugar or foods strongly associated with caries initiation primarily at mealtimes Regular use of dental care in the established dental home	Suboptimal systemic fluoride exposure with optimal topical exposure Occasional between meal exposures to simple sugar or foods strongly associated with caries Mid-level caregiver socioeconomic status (ie, eligible for school lunch program or SCHIP)	Suboptimal topical fluoride exposure Frequent (i.e., 3 or more) between-meal exposures to simple sugars or foods associated strongly with caries Low-level caregiver socioeconomic status (i.e., eligible for Medicaid) No usual source of dental care Active caries present in the mother
<b>General Health Conditions</b>			Children with special health care needs Conditions impairing saliva composition/flow

### Other assessments for oral risk factors include:

- Tobacco and alcohol use (cancers)
- Family history of oral cancers
- Use of mouth guard for sports
- Bulimia (erosion)
- Significant erosion
- Soft tissue lesions

Persons with bleeding disorders should participate in the development of a plan of action with preventive strategies to modify, where possible, the individual risk factors. The action needed is specific to their risk of oral disease. 

*In this issue:*

Risk Assessment for Oral Disease



## Problems Affecting Teeth and Gums

Oral diseases (dental caries, periodontal/gum disease) are extremely common throughout the world. In fact, they are so common that many people, including persons with bleeding disorders, see oral disease as an inevitable, normal part of life. However, the vast majority of oral disease is entirely preventable with good oral care and dietary habits. The preventive actions and lifestyle habits related to good oral health also aid in the prevention of other diseases with common risk factors, such as obesity, diabetes, respiratory and cardiac disorders.

With sugars and bacteria as the primary causes of the development of caries, it is important to decrease the factors that lead to dental caries. High-sugar diets lead to higher oral bacterial load that corresponds to a higher acid production. Poor oral hygiene, frequent consumption of sugary drinks (including soda pop and fruit juices), frequent snacking in between meals, and low salivary production are factors that contribute to an increased risk of dental caries.

### Gum Disease

Gingivitis (gum disease) is the most common oral disease. Healthy gums are pink, firm, and do not bleed with probing or brushing. One of the primary signs of gingivitis is bleeding caused by inflammation of the gums. This is the early stage of gingivitis and is completely reversible. When inflammation is untreated, it spreads to the underlying tissues and bones, and progresses to a more serious condition called periodontitis. "Periodontitis" is inflammation around the tooth causing gums to pull away from the teeth, leading



Picture provided by Dr. Eduardo Rey

to gingival recession, sensitivity of the teeth to hot and cold, breakdown of the periodontal ligament, loosening of the tooth (teeth) and eventual tooth loss.

Symptoms of uncontrolled periodontitis include halitosis, a bitter taste in the mouth, and loosening of the teeth. Over time, this affects food choices and chewing. Bleeding from the gums can also affect relations with partners, especially in those individuals who are carrying viruses such as Hepatitis C and HIV.

Mucosal bleeding is not usually a symptom of hemophilia, but unfortunately, for persons with bleeding disorders, the bleeding from the gingiva is often mistaken as part of their bleeding disorder and accepted as inevitable, until the gum disease has progressed to an advanced level. Sometimes persons with bleeding disorders shy away or are discouraged from brushing their teeth due to fear of doing harm. In fact, the very opposite is true – inflammation and associated bleeding can only be reduced with good oral care and regular brushing.

### *In this issue:*

#### Problems Affecting Teeth and Gums

### Dental Caries (Tooth Decay)



Severe Early Childhood Caries. Picture provided by Dr. Kirsten Fitzgerald

Dental caries are an environmentally-mediated bacterial process that results in breakdown of the tooth structure. Cariogenic (decay-forming) bacteria produce acid from dietary sugars. The bacteria produced attack the dental hard tissues. If the disease is not treated, the underlying pulp and nerve fibers in the roots become exposed and accessible to bacterial invasion. Eventually this will lead to dental pain, abscess formation, with associated risks of morbidity and even mortality.



Periodontitis, with chronic inflammation gingival recession, bone loss, and loosening of teeth. Picture provided by Dr. Alison Dougall

## Problems Affecting Teeth and Gums, continued

### Dental Infections

Dental infections can begin in the tooth (dental origin) or the surrounding gums (periodontal origin). When the nerve of a tooth dies due to infection from caries, it opens a pathway for bacteria to infect the supporting bone and adjacent teeth. Infections in the teeth cause pain, swelling, and may present as a swelling of the gum next to the tooth (sometimes called a gum boil). In the early stages, the infection can be treated by root canal therapy, however if it is more extensive it will result in a loss of one or more of the infected teeth. If untreated this infection can cause extensive inflammation and cellulitis, spreading to the lower jaw (mandible), and may cause the eye to swell shut.



The presenting symptoms of an acute gum infection (acute necrotizing gingivitis) are a high temperature, pain, halitosis and bleeding from the mouth. Picture provided by Dr. Alison Dougall

Development of a dental infection in the mandible poses the additional risk of secondary bleeding for persons with a bleeding disorder. The secondary bleeding may constrict the airway due to a hematoma in the vascular area of the oropharynx. Therefore, dental infections need to be resolved quickly to avoid complications. A preventative approach, beginning at a very young age, is the most effective preventative strategy. 🌐



A dental abscess presenting with pain and swelling of the gingiva adjacent to a lower decayed pre-molar tooth. Picture provided by Dr. Alison Dougall

Sometimes dental abscess can result in hospitalization, with the need for surgical drainage and intra-venous antibiotics. Dental infections can be severe and even life threatening due to septicaemia, brain abscess or constriction of the airway due to swelling.

*In this issue:*

Problems Affecting Teeth  
and Gums

## Age-Related Dental Problems In Persons With Bleeding Disorders

### Infants and Toddlers

Teething or eruption of primary teeth usually starts during the first year of life and is completed by 30–36 months.

Symptoms commonly observed when an infant starts teething are:

- Increased biting
- Drooling
- Gum rubbing
- Sucking
- Irritability
- Disturbed sleep
- Decreased appetite for solid foods
- Mild temperature elevation  $<38^{\circ}\text{C}$

Giving the infant something cold to suck on, like a teething ring or pacifier chilled in the refrigerator, or a cold, wet, clean washcloth, can act as an anesthetic to numb the gums and ease the discomfort. Avoid the use of aspirin and aspirin-containing medications in persons with bleeding disorders; in many countries, they are contra-indicated in young children.

More serious systemic upset, diarrhea, vomiting, fevers greater than  $38^{\circ}\text{C}$ , nappy/diaper rash, and cough are NOT associated with teething and should be investigated by an appropriate medical provider.

A child with a bleeding disorder may experience minor bleeding or oozing from the gums with eruption of the tooth. Increased biting and gum rubbing may abrade the gums and cause bleeding. As the child becomes more active, bleeding incidents from the mouth, gums, lips,

tongue, and cheeks may be more frequent during play. This may be caused by accidental bites, falls, and trauma. To prevent injuries during play, provide soft plastic toys or those covered by fabric. Use a plastic-coated spoon when feeding a baby or toddler.

Encourage parents to begin brushing their baby's teeth as soon as they erupt. They can clean the gums by gently rubbing them with a soft cloth and use a small, soft-bristled toothbrush with plain water to clean the baby's teeth. Instruct parents not to use toothpaste until the child understands not to swallow the toothpaste and learns to spit it out after brushing. It is not advisable to put a baby to bed with a bottle of milk, fruit juice, or other sugar-containing liquid. Prolonged contact with sugar-containing drinks during continuous night or naptime feeding causes rapidly-destructive dental caries. When putting a baby to sleep or calming the baby between feedings, offering plain water or a clean pacifier are better alternatives to prevent early tooth decay.

### Childhood

The second set of teeth, the permanent teeth, start to erupt between the ages of five and seven and usually completes by age 13 to 14. The primary teeth hold the space for permanent teeth. As the permanent teeth erupt, the primary teeth are naturally exfoliated (shed).

Most exfoliating primary teeth cause no significant bleeding. In case of minor bleeding, have a child bite down on a clean, damp gauze pack, facecloth or a moist tea bag. The tannic acids in tea bags may help constrict blood vessels to decrease or stop the bleeding. Simple measures such as applying an ice pack against



Anterior caries and abscesses. Picture provided by Dr. Kirsten FitzGerald

the face, eating cold instead of hot foods, avoiding the use of straws or rinsing the mouth by swishing liquid vigorously can preserve the blood clot until the area heals. However, for uncontrolled bleeding (those episodes lasting longer than 20 minutes) or if the bleeding stops and restarts, it is imperative to seek dental consult and inform your hemophilia treatment center, as the child may need medication to stabilize the clot, control bleeding, and promote healing.

### Adolescents

Adolescents are at an increased risk for trauma and injuries to the mouth because of their active lifestyle and increased risk-taking behaviors. Oral and dental problems can occur secondary to sports, violence, motor vehicular, and other types of accidents. Encourage adolescents who participate in sports to wear protective mouth guards during practices and games to prevent injury to the teeth and soft tissue of the mouth.

Teens may encounter the use of tobacco products and illicit drugs. Tobacco use can irritate the mouth and gum tissues, cause dental plaque to buildup more quickly, increase the risk for periodontal disease, stain or discolor the

*In this issue:*

Age-Related Dental Problems



## Age-Related Dental Problems In Persons With Bleeding Disorders, continued

### *In this issue:*

#### Age-Related Dental Problems

teeth, cause bad breath, and increase the risk for oral and other cancers. Illicit drugs can affect the flow of saliva, change the acidity of the mouth, accelerate tooth decay, and promote poor dental habits and laxity in oral hygiene contributing to negative effects on oral health. Therefore, it is important to offer support and cessation options during routine dental and healthcare visits.

The wisdom teeth or third molars usually appear by the late teenage years. Sometimes, problems may arise as the wisdom teeth erupt. The jaw may be too small to accommodate them or they do not erupt in the right position, causing impaction and the possible need to extract the tooth. Extraction of the wisdom teeth may involve extensive surgery. There needs to be careful planning and coordination between the hemophilia treatment center, dentist, and oral surgeon.

Orthodontics is the management of misaligned teeth and/or jaws. Misalignment of the dental structures can be a functional problem, an aesthetic issue or a hindrance to good oral health. The problem is usually genetic or

congenital but environmental factors such as prolonged thumb sucking, use of pacifiers, and tongue thrusting can contribute to poor alignment of teeth. Bleeding disorders (even severe) is not a contra-indication to orthodontic treatment. Children with a bleeding disorder may need to have some teeth extracted to make space to correctly position teeth and they can wear braces to correct crooked teeth. An orthodontist must be aware of the bleeding disorder to take the necessary precautions during treatment. Careful placement of the bands and wires applied to the teeth is necessary and a special dental wax is applied over rough edges to protect the mouth.

### Adults

More than half of all adults experience some form of periodontal or gum disease. Periodontitis usually develops from poor oral hygiene and plaque buildup. Inflammation initially starts in the gums then spreads to the underlying tissues and bones, damaging the attachment of the teeth to the jawbones. This results in loosening of the

tooth and eventual tooth loss. A periodontist (a dentist who specializes in the prevention, diagnosis, and treatment of periodontal disease, dental implants, and oral inflammation) may recommend non-surgical treatments like deep scaling, root planning to smooth the root surfaces, and antibiotics. Surgery becomes indicated when gum disease is severe and has not responded to non-surgical interventions.

Aging of a person with a bleeding disorder brings other dental problems, such as tooth wear and erosion. Some medications dry the mouth causing rampant caries and accelerated tooth loss in a previously healthy dentition. Preventative measures are the best approach.

Ill-fitting dentures can cause pain and inflammation of the soft tissues of the mouth. With age, the gum ridges of the mouth begin to shrink and deteriorate over time, causing the dentures to become loose. Sore spots can develop and become irritated and bleed. 🌐



### Did You Know

**W**hen a child or adult accidentally traumatizes a tooth, they must seek immediate dental treatment. A responsible adult may be able to reinsert a permanent tooth accidentally knocked out into its original socket at the scene. Pick up the lost tooth carefully by the crown to avoid touching the root. Rinse the tooth with clean, cold water and replace in the socket as soon as possible. Place a tooth that is not reinserted immediately into a clean container and cover the tooth in milk allowing it to soak until you can get to the dentist. Seeking the immediate care of a dentist, can help save the tooth. Applying firm, gentle pressure on the bleeding site with clean gauze, a washcloth, or moist tea bag can help stop the bleeding. A chipped piece of tooth can be cemented back in place, repaired with filling material, or the sharp edges filed down to prevent further cuts in the tongue or cheek.

## Oral Cancer

Cancer of the head and neck is most often seen in middle age and older adults. It affects predominantly males (6th most common cancer in men) and accounts for approximately 3% of all cancers. Lifestyle factors implicated in the etiology are: tobacco smoking, alcohol consumption, human papilloma virus, and betel quid. (Betel quid is a combination of betel leaf, areca nut and slaked lime.) Oral or mouth cancer is easily treatable with simple surgery and/or radiotherapy if diagnosed early, however its five year survival is only 50-80%. The poor outcome for oral cancer is due in part to its late presentation, stage at diagnosis, and lack of awareness about oral cancer in the community.

### Oral Cancer Symptoms

- A sore area or ulcer in the mouth that does not heal
- White or red patches inside the mouth
- A lump in the mouth or neck
- Thickening or hardening of the cheek or tongue
- Difficulty swallowing, chewing, or moving the tongue
- Numbness of the tongue or face
- A persistent sore throat or hoarseness
- Persistent nose bleeds and a stuffy nose
- Unexplained loose teeth

These symptoms can also be due to medical issues. However, if any of these symptoms persist for more than three weeks, it is important to have them checked by a dentist or doctor.



Picture provided by Dr. Alison Dougall with permission from Hapshaw.

### Oral Assessment for Cancer

Oral assessment for cancer is critical for early detection. The following assessment is recommended:

- Targeted screening of 'at-risk' groups
- Opportunistic screening in primary care settings by a doctor or dentist
- Education of persons with bleeding disorders and medical teams
- Self-examination of the mouth

### Prevention Strategies for Mouth Cancer

Primary prevention strategies include:

- Smoking cessation programs
- Reduced use of betel leaf, areca nut, and smokeless tobacco
- Reduction of alcohol consumption
- A nutritious diet

*In this issue:*

Oral Cancer

## Oral Cancer, continued

### Screening the Mouth for Oral Cancer

**Equipment Required:** Examination gloves, moistened wooden spatula, pen light, container for safe storage of dentures as required

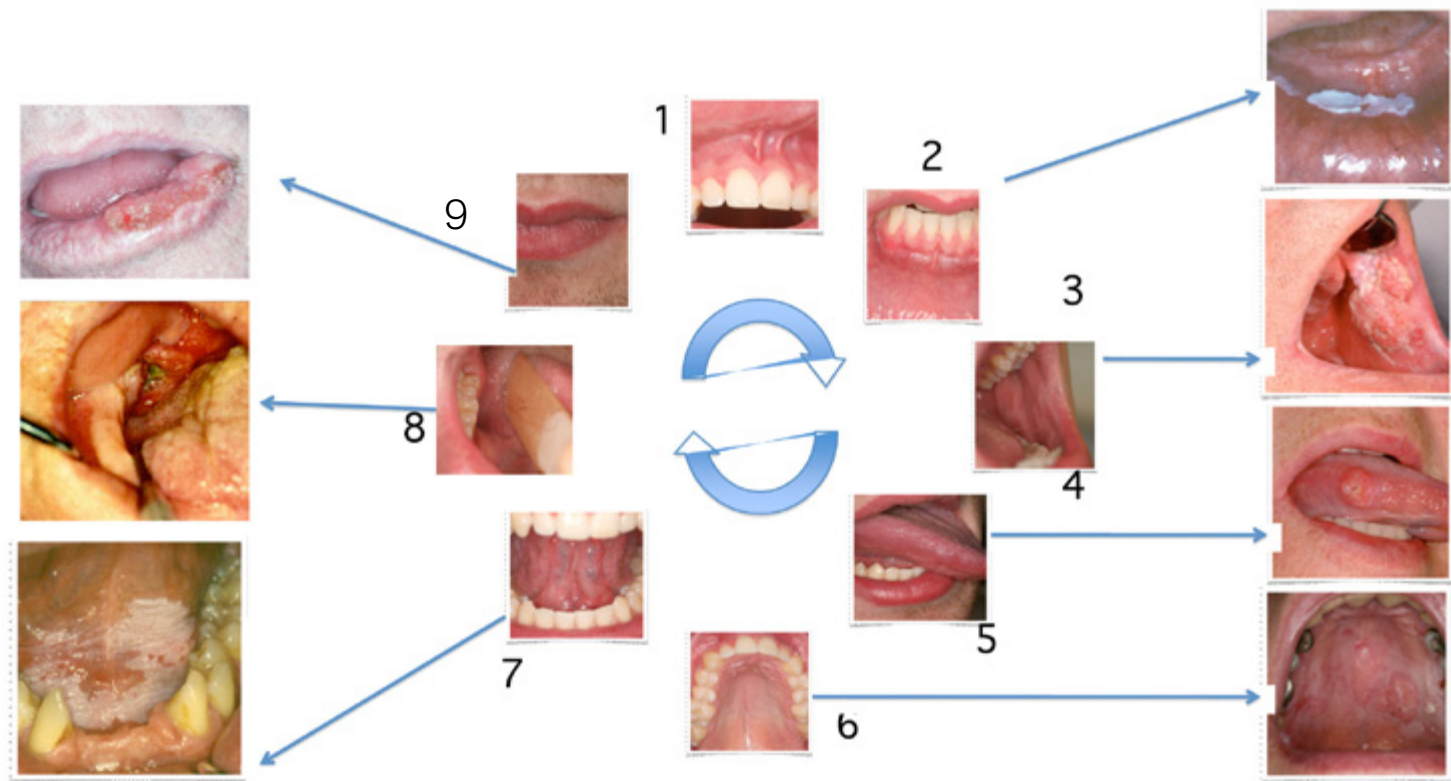
**Positioning:** Stand or sit at the same level as the patient for best visual access

**Instructions to Patient:** Do not initially encourage the patient to open the mouth wide, this stretches the lip tissue and reduces visibility and access. Before examining the mouth, ask the patient to remove any dentures

- 1-2 With the mouth closed but relaxed use a gloved finger or a moistened wooden spatula to retract the lips and examine the upper and lower labial sulcus all the way round to the inside of the cheeks.
- 3 Gently retract the cheeks in order to examine the area adjacent to the pre-molars and posterior to the last molar on each side.
- 4-5 Ask the patient to protrude the tongue and move it from side to side in order to examine the dorsum and lateral borders of the tongue.
- 6 With the tongue protracted ask the patient to vocalise in order to examine the whole of the soft palate area (as per cranial nerve examination).
- 7 Ask the patient to touch the back of the roof of their mouth with their tongue in order to examine the floor of the mouth behind the lower incisors.
- 8 Now retract the tongue laterally in this lifted position using a spatula in order to see the area adjacent to the pre-molars and molars on either side. Warn the patient that this may be a little uncomfortable.
- 9 Finally examine the lips.

If your patient complains of a mouth ulcer that does not heal after 2 weeks, or you notice a suspicious lesion, lump or swelling in or around the oral cavity refer the patient to a dentist or oral pathologist for immediate review. Investigation and diagnosis of suspicious lesions will be confirmed easily and quickly via biopsy. Early diagnosis saves lives.

*In this issue:*



## Dental Treatment

**T**he World Federation of Hemophilia (WFH) has developed guidelines for safe dental treatment for persons with bleeding disorders. This comprehensive and practical monograph is available on the WFH website at:  
[http://www.wfh.org/2/docs/Publications/Dental\\_Care/TOH-40\\_Dental\\_treatment.pdf](http://www.wfh.org/2/docs/Publications/Dental_Care/TOH-40_Dental_treatment.pdf)

### The Traffic Light System

The following information is extracted from the WFH guidelines. The “Traffic Light” system below simplifies and illustrates the advice for dentists not familiar with treating a person with a bleeding disorder. This is a very useful, educational tool and aide for persons with bleeding disorders, dentists and other healthcare providers, making them confident in the care they receive, provide or advise.

All the dental treatments in the green box labeled “Go Ahead” indicate that it is safe to provide the treatments without any special measures to all persons with bleeding disorders, regardless of the nature or severity of their disease.

Treatments in the amber section labeled “Ask/ Think” may require additional local measures to prevent mucosal bleeding in persons with severe bleeding disorders, especially those with von Willebrand Disease (vWD).

Treatments in the red section labeled “Stop, Consult” will require liaison with the multidisciplinary team. These treatments are likely to require pre-operative, systemic measures in all but the most mildly affected persons with bleeding disorders. 🌐

### Dental Treatment in Hemophilia

#### GO AHEAD

Examination/X-ray  
 Fluoride Application/  
 Fissure Sealant  
 Restoration  
 Impression making  
 Dentures  
 Periodontal Probing  
 Infiltration/  
 Intraligamentary/  
 Palatal and Intra-papillary  
 Local Anesthesia

#### ASK/ THINK

Sub-Gingival Scaling  
 Stainless Steel Crown  
 Rubber Dam Clamp  
 Pulp Treatment  
 Primary Tooth  
 Pulp Extirpation  
 Matrix Band and Wedge  
 Placement  
 Orthodontic Treatment

#### STOP CONSULT

Inferior Dental Block  
 (IDB) and  
 Lingual Local Anesthesia  
 Extraction  
 Oral Surgery  
 Implant Placement  
 Periodontal Surgery  
 Root Debridement

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Dental Treatment

## Oral Surgical Care

### Pre-operative

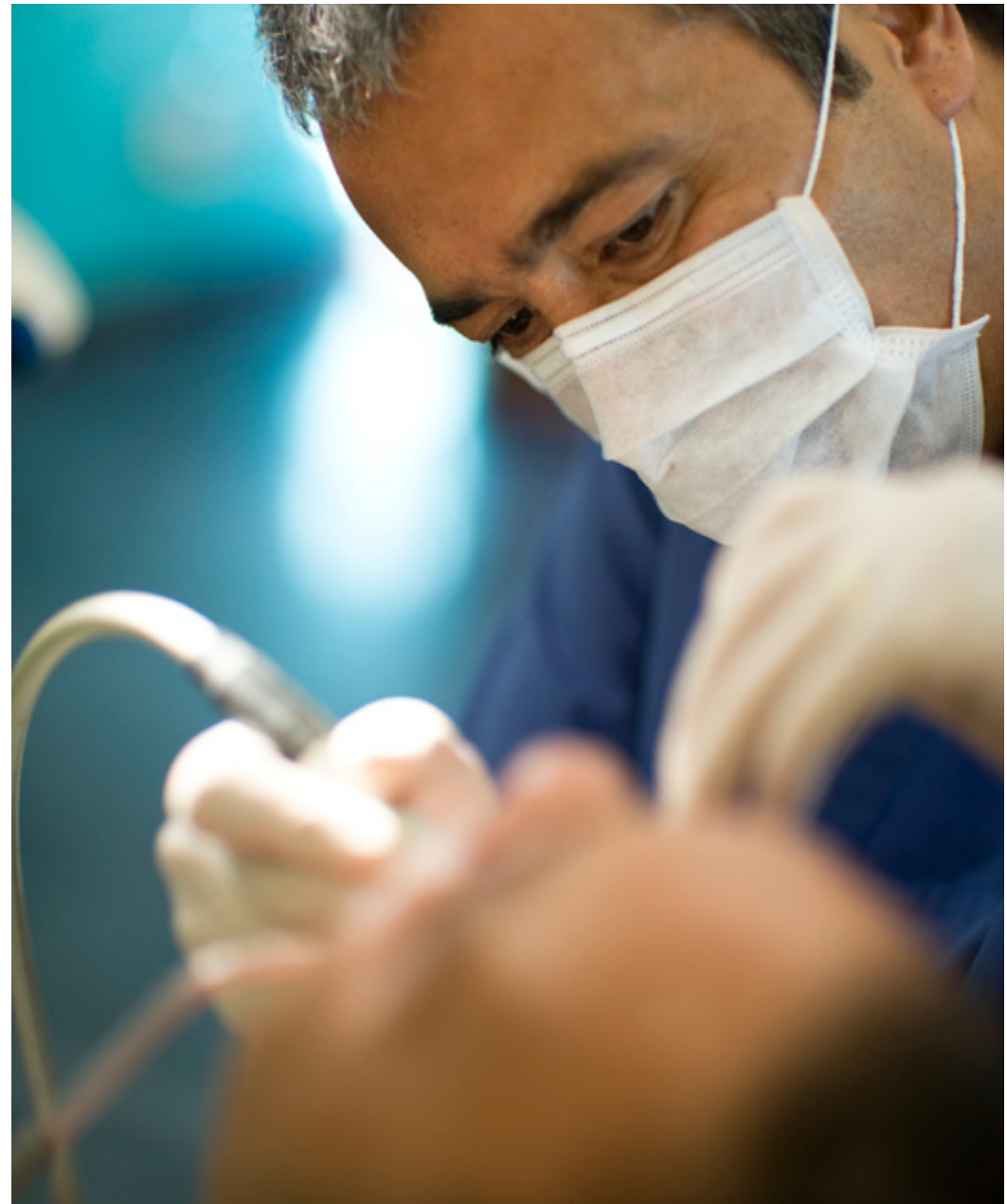
Once a person with a bleeding disorder has found a dentist who is willing, informed and confident enough to provide safe dental care, the following information describes some of the routine steps for dental procedures.

Pre-operative care includes information gathering and planning. A person with a bleeding disorder should be ready to provide contact details of their chosen dentist to their hemophilia multidisciplinary team. The hemophilia multidisciplinary team should then provide the dentist with accurate details of the patient's medical history and guidance tailored to the person and the proposed procedures, according to the guidelines. Where preventive measures have failed to prevent decay or infection, the hemophilia multidisciplinary team can advise on the appropriate local or systemic measures required for amber or red procedures.

Pre-operative systemic measures required for red procedures include the use of systemic antifibrinolytics (e.g. tranexamic acid, aminocaproic acid), DDAVP (subcutaneous, intranasal, or intravenous), and factor replacement therapy, as appropriate. The aim of providing systemic antifibrinolytics is to administer the least amount of factor concentrate to achieve the desired effect. This reduces the risks of exposure, inconvenience, potential for inhibitor development, and cost for the person with a bleeding disorder.

### Desmopressin Acetate (DDAVP)

In persons with bleeding disorders with mild factor VIII deficiency and von Willebrand Disease (vWD) types 1 and 2A, DDAVP (if available) is the treatment of choice for dental procedures

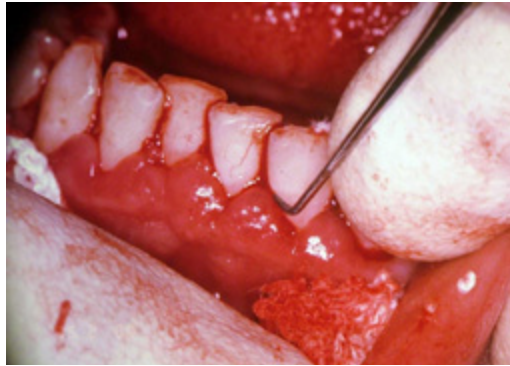


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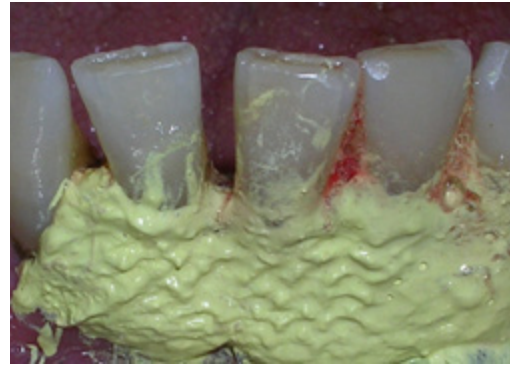
Oral Surgical Care



## Oral Surgical Care, continued



Picture provided by Dr Eduardo Rey, University of Buenos Aires.



Picture provided by Dr Eduardo Rey, University of Buenos Aires.

kg of factor VIII is desirable and in hemophilia B, a dose of 100 iu/kg of factor IX is required. (Scully et al, 2002)

### Local Measures

Agents such as fibrin glue, oxidized cellulose, and antifibrinolytics agents like tranexamic acid or epsilon aminocaproic acid, have been helpful in enhancing clotting and controlling hemorrhage. Research has shown they also may reduce the amount of factor concentrate or other systemic measures required both pre- and post- operatively.

### Fibrin Glue

Fibrin glue (also called fibrin sealant) is a synthetic substance used to create a fibrin clot. It is composed of two separate solutions of fibrinogen and thrombin. When mixed together, these agents mimic the last stages of the clotting cascade to form a fibrin clot. Local use of fibrin glue is a safe and cost-effective tool to treat persons with severe bleeding disorders. In a study by Isarangkura (1999), fibrin glue was found to minimize blood product usage, decrease medical workload, reduce medical cost, and increase the patient's convenience and satisfaction. The effectiveness of fibrin glue is strongest in children with coagulation factor inhibitors. It was shown that the use of fibrin glue is less expensive than substitutive therapy and combining fibrin glue with post-operative tranexamic acid mouthwash helps reduce the high fibrinolytic activity in the saliva. This improves the outcome in persons with severe bleeding disorders.

### Factor Concentrate

When persons with bleeding disorders require invasive dentistry, their individual case should be discussed with the multidisciplinary team. According to dental guidelines, the team will devise a pathway of care to include the administration of factor concentrate with pre- and post- factor levels and post-procedural care.

Where appropriate, persons with bleeding disorders on prophylaxis are encouraged to self treat the morning of the procedure. Upon arrival to the clinic a post-factor level may be taken if deemed necessary.

For persons with mild hemophilia A, (factor VIII >10%) and most persons with vWD (type 1), scaling and some minor surgery may be possible under desmopressin (DDAVP) cover. However, DDAVP is not effective in hemophilia B (even mild cases) as it does not boost the factor IX levels.

For those with severe hemophilia, factor replacement is necessary before surgery or regional block injections. For example, before a tooth extraction, in hemophilia A a dose of 50 iu/

where raised factor levels for four to six hours post procedure are essential (red procedures on the traffic light system). A DDAVP trial is recommended as some patient's may not respond well.

A vasopressin analog, DDAVP is effective in releasing the stored factor VIII, vWF, and t-PA from the endothelial lining of blood vessels, thus raising the circulating plasma levels for a short period of time. The maximum level is achieved in 60 to 90 minutes. As DDAVP is administered intravenously, sufficient time must be allocated for the treatment.

Side effects are transitory facial flushing, a 10-20% increase in heart rate, and occasional changes in blood pressure. The antidiuretic nature of the drug may predispose the patient to hyponatremia, for this reason, it is important to limit oral fluid intake to 1.5 litres per 24 hours, post infusion. DDAVP should be used with caution in persons with bleeding disorders with conditions associated with fluid and electrolyte imbalance, such as cystic fibrosis, heart failure, and renal disorders, because these persons with bleeding disorders are prone to hyponatremia.

*In this issue:*

Oral Surgical Care

## Oral Surgical Care, continued

### Oxidised Cellulose

The risk of bleeding may be minimised by the use of oxidised cellulose or collagen sponges held in place by sutures to keep the wound edges in place. The oxidized cellulose causes local vessel contraction, swells to absorb 45 times its weight in fluid, acts as a framework for the clot because it is bio-absorbable, and can remain in situ without impairing wound healing.

### Bismuth Subgallate

Bismuth Subgallate acts on the activation of factor XII, accelerating the coagulation cascade. Its local astringent action precipitates vascular proteins that obliterate the lumen of small vessels and it can be very useful in preventing hemorrhage following periodontal/gum treatment.

### Tranexamic Acid



Tranexamic acid, an antifibrinolytic agent, inhibits the activation of plasminogen to plasmin, prevents clot breakdown, and prevents degradation of fibrin, thereby preventing/delaying excessive post-procedural bleeding.

It is commonly used in persons with bleeding disorders to manage simple issues such as epistaxis, menorrhagia, and minor mucosal bleeds. Within dentistry, together with meticulous local hemostatic measures, it reduces the need for or the amount of pre-operative factor replacement and can prevent the need for post-operative factor replacement following surgical procedures.

Tranexamic acid is freely soluble in water and a prescription of 5% mouthwash or oral liquid for short-term use following dental extraction may be given. As a mouthwash, tranexamic acid is effective in preventing the breakdown of clots following dental surgery or gum treatment.

Some treatment centers prepare a liquid by mixing crushed tablets with water and then filtering out the insoluble excipients to create a clear solution. A maximum expiration date of five days is suggested for this preparation, which has not been formally tested. Mouthwash needs to be refrigerated and protected from light.

### Post-Operative Instructions

The goal of post-operative instructions is to allow the clot to remain undisturbed and prevent its dislodgement from the tooth socket. It is especially important to recommend that the patient not smoke. This may reduce the incidence of alveolar osteitis (dry socket), which is not only very painful but also increases the chance of infection and secondary bleeding.

- No mouth rinsing for 24 hours except with an antifibrinolytic mouthwash
- Appropriate use of antifibrinolytic mouthwash four times a day, as directed
- No smoking for 24 hours (and longer if possible)
- Take care not to traumatize or bite lips, which are numb for at least four hours post operatively
- No hot drinks for at least four hours post-operatively
- Soft diet for 36 hours
- No strenuous activities for 24 hours

- Prescribed medications must be taken as instructed
- Analgesia should be prescribed for use, if required



### Post-Operative Pain Management

Managing pain in a person with hemophilia can often be challenging, as some drugs, like aspirin and NSAID's, are contra-indicated. Furthermore, some drugs have high tolerance levels.

Analgesia, such as paracetamol (acetaminophen) or codeine phosphate, usually controls mild to moderate pain in children and adults. In adults, moderate to severe pain can be controlled with opioids such as tramadol or COX-2 selective inhibitors, which are a useful form of NSAID's that directly targets COX-2, an enzyme responsible for inflammation and pain, but spares the risk of GI bleeding; COX-2 selective inhibitors are not contra-indicated in persons with hemophilia. 🌐

*In this issue:*

Oral Surgical Care

## Oral Health Promotion

### Dental Home Care

The best way to avoid mouth bleeding and serious dental problems is by reducing the risk of tooth decay and gum disease. Dental care and oral hygiene should start early and be considered a priority, especially among individuals dealing with bleeding disorders. Daily oral hygiene and regular visits with a dentist allow a person with a bleeding disorder to deal with smaller problems. It may prevent the more aggressive procedures that could increase the risk for bleeding that can become life threatening.

### Brushing and Flossing

Prevention starts with providing good, daily, regular care. The most important tool in oral hygiene is the toothbrush. Ideally, toothbrushes should have soft to medium, rounded bristles and be replaced every three months. Brushing the teeth after every meal, or at least twice a day in the morning and before bedtime, helps

reduce plaque buildup — the culprit of tooth decay and gum disease. Brushing with plain water should start as soon as the first baby tooth erupts. Parents should take the responsibility of cleaning their child's teeth since children below six years of age do not usually have the manual dexterity to clean their teeth adequately, and as mentioned, the child does not understand not to swallow the toothpaste.

Once a day flossing after brushing removes plaques from in between the teeth and below the gum line, where periodontal disease starts. Gently sliding the floss up and down into the spaces between the gums and sides of the teeth removes food debris and plaque a toothbrush does not reach.

Some individuals with bleeding disorders neglect to brush and floss their teeth for fear that these may cause bleeding. Healthy gums do not usually bleed even in persons with bleeding disorders unless brushing is too vigorous. Bleeding gums are a sign of dental or gum disease.

### Fluoride

Fluoride is a naturally occurring mineral found in food and water. Fluoride helps prevent tooth decay by strengthening the teeth, making them more resistant to acid attacks by plaque, bacteria and sugars in the mouth; it also aids in resisting demineralization of enamel. When fluoride comes in contact with the surface of children's permanent teeth the fluoride is incorporated into the structure of their teeth. Fluoride cannot repair cavities but it can reverse low levels of tooth decay and prevent new cavities from forming. Fluoride is also available in tablet form and taken orally at a dose dependent on the child's age and amount of fluoride already present in the water source. Most toothpastes contains fluoride to

help fight dental caries. Children below six years of age may swallow toothpaste while brushing. A pea-sized amount of toothpaste should be used and brushing supervised by an adult. Use of fluoride has decreased the incidence of dental caries in the general population by 60%. Today, a dentist or hygienist can apply a highly concentrated fluoride gels and varnishes to slow down or even reverse early decay in both adults and children.

### Diet

The frequency of consumption of refined carbohydrates and foods rich in sugars is more important than the amount. Continuous acid attack by eating and drinking sugar-containing products can result in progressive tooth decay.



Restricting or limiting intake of sugars during meals and avoiding snacks in between meals should prevent dental caries from developing. Putting a baby to bed with a bottle of milk, fruit juice, or other sugar-containing liquid allows prolonged contact with sugar and causes rapidly destructive dental caries. When putting a baby to sleep or calming the baby between feedings, offering plain water or a clean pacifier are better alternatives to prevent early tooth decay. Food labeling can be deceptive, therefore, it is important to carefully read the label when purchasing foods marketed as "healthy" or "natural" as these often contain large amounts of sugar. Dextrose, glucose, lactose, high fructose corn syrup, and maltose are all forms of sugar.

*In this issue:*

Oral Health Promotion


## Oral Health Promotion, continued

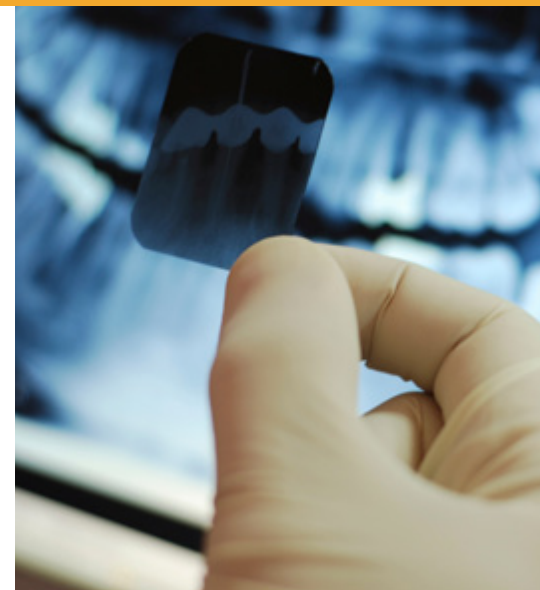
### Professional

Persons with hemophilia and other bleeding disorders need to establish a relationship with their dentist and hemophilia care team as early as when the first tooth erupts. Establish a safe and comprehensive preventive dental plan to reduce or eliminate dental and gum disease. Visiting the dentist at least twice a year is recommended, especially for persons with bleeding disorders who have a high individual risk of oral disease, including oral cancer. Regular dental consultations will help identify problems early and reinforce prevention.

### Emergency Care

Urgent requests are mainly pain related. If possible, it is important to establish the actual diagnosis and level of severity, as both will determine pre- and post-procedural treatment. The type of pain should be identified and immediate options to relieve pain taken.

If an appointment is not immediately available at the hemophilia treatment center, instruct the person with hemophilia to seek medical attention. A doctor or dentist will evaluate the cause and may prescribe antibiotics and an analgesic medication. 



*In this issue:*

## Models of Care

### The Role of the Hemophilia Treatment Center

The hemophilia treatment center plays a vital role, not only in facilitating treatment, but also in raising awareness of oral health in persons with bleeding disorders. Organizations for persons with a bleeding disorder can advise their members on the importance of dental care, they can lobby for services, facilitate research, and audit and educate persons with bleeding disorders and their families on the importance of good oral health.

Furthermore, the hemophilia treatment center's role in informing policymakers at both local and national levels is critical in ensuring the inclusion of oral health services in health promotion and disease prevention programs and care delivery systems.

Integration of the dental team into the hemophilia comprehensive care team allow for regular collaboration to discuss issues, protocols, and the management of individual oral and general health. All members need to be involved; nurses, doctors, dentists, oral surgeons when required, social workers, physiotherapists and psychologists. There should ideally be on-site dental facilities for adults and children or the dental services should ideally be fairly close to the hemophilia center. A joint appointment or co-ordinated appointments increase attendance at the dentist and lessens the time and travel commitment for the person with a bleeding disorder and their significant others.

The hemophilia treatment center has a role in changing health providers' perceptions of dental care, because all healthcare professionals can and should contribute to enhancing oral health.

There are several ways to accomplish this, such as including an oral examination when the person with hemophilia attends clinic for their annual review. The hemophilia staff is in a unique position to promote healthy lifestyles by incorporating tobacco cessation programs, nutritional counseling, and other health promotion efforts into their practices.

### The Role of the Hemophilia Nurse Specialist

The role of the nurse is to optimize communication within the multidisciplinary team to ensure the safe and efficient care of persons with bleeding disorder's dental experience. The role of the nurse in dental care goes beyond caring for the individual in clinic. Hemophilia nurse managers should incorporate aspects of dental care when developing



## Models of Care, continued

hemophilia nurses competencies to ensure that standards of dental care are set and maintained. Furthermore, dental care of the person with hemophilia should be included in the programs of both national and international hemophilia nursing studies and conferences.



- Collaborating with the laboratory to ensure blood results are processed on time, ensuring that the persons with bleeding disorders are ready for dental treatment
- Supporting persons with bleeding disorders in reducing anxiety due to needle phobia, dental phobia, or previous dental experiences since they are often extremely anxious prior to dental visits and procedures
- Monitoring of post-surgical recovery status, especially if sedation was used
- Assessing the comprehension of the follow-up instructions and ensuring they have a prescription for adequate pain and bleeding control
- Ensuring follow-up contact details have been provided, in case of emergency


### Summary

- Incorporate oral assessment, approaches for prevention, diagnostic, and treatment strategies into your daily practice.
- Take an active role in educating persons with bleeding disorders and healthcare providers on the importance of good oral care.
- During hemophilia clinic visits include documentation of the oral assessment and the last dental visit.

### *In this issue:*

The role of the hemophilia nurse includes:

- Educating the person with a bleeding disorder and their healthcare providers about oral care and helping the person with a bleeding disorder develop a preventative action plan
- Advocating for the person with a bleeding disorder during multidisciplinary team meetings in relation to planned dental care
- Being the liaison with the team in the development of the treatment plan
- Organizing clinic appointments to suit family/work needs, when possible
- Identifying pre-procedure requirements to ensure adequate time for the administration of factor concentrate and return of post-factor level results, prior to dental procedure

Hemophilia treatment centers and dental care teams are in a unique position to work together to incorporate new approaches for prevention, diagnostic, and treatment strategies in their practices. New challenges will continue because of the changing demographics of the bleeding disorder population and a greater understanding of the relationship between oral health and general health. With a shared understanding of oral diseases and bleeding disorders, the integrated care team can make clinical decisions and help the person with a bleeding disorder understand the importance of oral care as part of their treatment plan. Thus, it is of paramount importance that the hemophilia comprehensive care team and dental team unite to ensure that good oral health is an integrated part of the healthcare plan for the person with a bleeding disorder. 



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