International Dental Congress and Exhibition
INTERDENTAL
Bratislava, 13 - 15 May 2004
SÚZA Hotel,46 Drotárska st., Bratislava, Slovak Republic

Thursday 13 May 2004 - Slovak Day

13:30	**Opening Ceremony**	
	Balažič V., SR: **Endodontics - revolutionary technique of root canal filling by a single point**	40 min.
	Stanko P., Satko I., Novotňáková D., Kubisová J., Danko J., SR: **Preprosthodontic surgery**	30 min.
	Javorka V., SR: **Therapeutic principles of young permanent teeth trauma**	40 min.
15:15	**Break**	
15:45	Mračna J., SR, Čierny M., Fuchs E., Switzerland: **Mandibular ostheoplastics**	20 min.
	Hirjak D., Satko I., SR: **Possibilities and problems of dental implantology**	30 min.
	Čech I., SR: **Aestetics in implant prosthodontics**	20 min.
	Tóthová M., SR: **Ozone in prevention and treatment of dental caries**	45 min.
	Babčan J., Pánek T., SR: **Slovak dentists in Africa**	15 min.

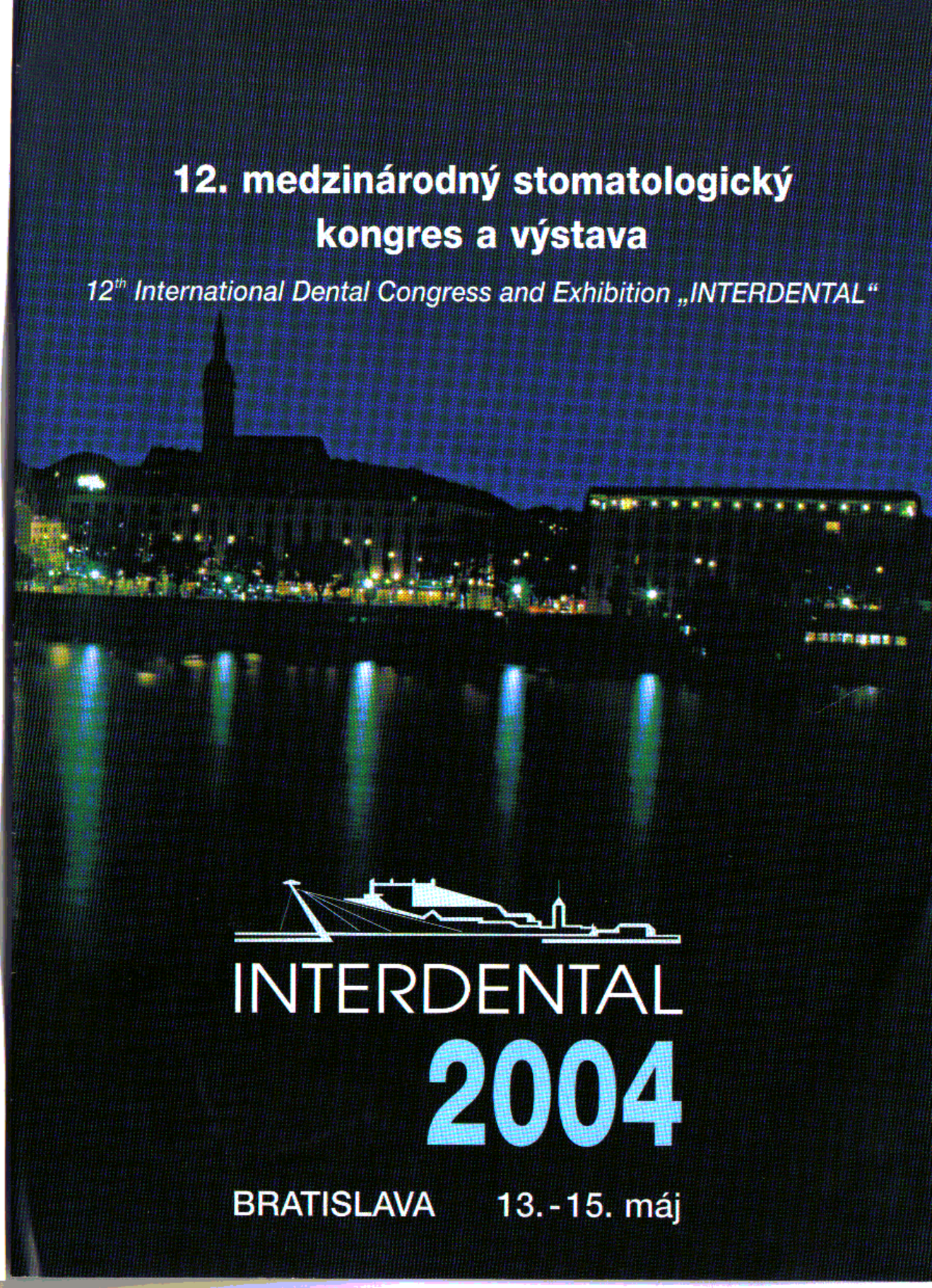
Friday 15 May 2004 - Czech Day

9:00	**Opening**	
	Černochová P., Kaňovská K., ČR: **Dental ankylosis – diagnostic and therapeutic decisions**	45 min.
	Kaňovská K., Kukletová M., Černochová P., Svobodová M., ČR: **Complicated dental fracture and its treatment by extrusion**	45 min.
10:30	**Break**	
11:00	Fassmann A., Celerová J., Slapnička J., Augustín P., Vaněk J., ČR: **Stomatologic indications for therapy by „tissue engineering“**	40 min.
	Ščigel V., ČR: **Selected drug interactions in dental medicine**	45 min.
12:30	**Lunch break**	
13:30	Gojišová E., ČR: **Dental pain – pulp-dentíne complex – vital apparatus**	30 min.
	Nožička J., ČR: **Implant or Bridge**	50 min.
	Krňoulová J., ČR: **Oral parafunctions and their consequences to stomatognatic system**	50 min.
15:45	**Break**	
16:15	Bartáková V., ČR: **Sialolithiasis – new looking, modern therapy, interesting cases**	45 min.
	Dřízhal I., ČR: **Salivation disorders and their clinical importance**	45 min.

Saturday 15 May 2004 - European Day

8:30	**Opening**	
	Cachovan G., Germany: **Endodontic and restorative treatment in deciduous dentition**	25 min.
	Koch G., Sweden: **Paediatric Dentistry - Caries prevention-How and When**	60 min.
	Jokstad A., Norway: **Management of buccal erosions**	45 min.
11:45	**Break**	
11:00	Koch G., Sweden: **Paediatric Dentistry - Traumatic Injuries in the Young Dentition**	60 min.
	Sedelmayer J., Germany: **Composite resin in practice – theory and reality**	45 min.
12:30	**Lunch break**	
13:30	Kotschy P., Austria: **Microscope – kinetic preparation of the cavity: quantic jump in dental medicine**	45 min.
	Lennartz M., Germany: **Conditions for executing stomatology practise in the german health care system**	45 min.
15:00	**Congress termination**	

Program change reserved!



Buccal defects - therapy

Asbjørn Jokstad
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Therapy and Interventions –Strategy 1

1. Establish status
2. Restore

   Caries & non-caries defects

Therapy and Interventions- Strategy 2

1. Diagnose correctly
   Caries vs non caries
2. Identify etiology
   a. Caries
   b. Non caries defects
3. Restore
   Caries & non-caries defects
4. Reduce risk
   a. Caries
   b. Non caries defects

Therapy and Interventions

Symptomatic

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Diagnosis and etiology is of limited interest. e.g. only for the sake of evaluating prognosis.

Causal

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Therapy and Interventions

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1. Diagnose correctly

- Procedure
- Types of defects
  - (a. carious) & **b. non-carious defects**

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Diagnostic protocol for non-carious defects 1/5. 1. Obtain historical data 1/3

Medical History

- Excessive vomiting, rumination
- Eating disorder
- Gastroesophageal reflux disease
- Symptoms of reflux
- Frequent use of antacids
- Alcoholism (possible narcotics?)
- Autoimmune disease (Sjogren's)
- Previous radiation treatment of head and neck
- Oral dryness, eye dryness
- Medications that cause salivary hypofunction
- Medications that are acidic

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Diagnostic protocol for non-carious defects 2/5. 1. Obtain historical data 2/3

Dental History

- History of bruxism (grinding or clenching)
  -Grinding bruxism sounds during sleep noted by bed partner?
  -Morning masticatory muscle fatigue or pain?
- Use of occlusal splint

Dietary History

- Acidic food and beverage frequency
- Method of beverage drinking (swish, swallow?)

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Diagnostic protocol for non-carious defects 3/5. 1. Obtain historical data 3/3

Oral Hygiene Methods

- Toothbrushing method and frequency
- Type of dentifrice (abrasive?)
- Use of mouthrinses
- Use of topical fluorides

Occupational/Recreational History

- Regular swimmer?
- Wine-tasting?
- Working environment hazards?

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Diagnostic protocol for non-carious defects 4/5-2. Perform physical assessment 1/2

Head and Neck Examination

- Tender muscles (bruxism?)
- Masseteric muscle hypertrophy (bruxism?)
- Enlarged parotid glands (autoimmune disease, anorexia, alcoholism)
- Facial signs of alcoholism:
  -Flushing, puffiness on face
  -Spider angiomas on skin

General Survey

- Underweight (anorexia)

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Diagnostic protocol for non-carious defects 4/5-2. Perform physical assessment 2/2

Intra-oral Examination

- Signs of salivary hypofunction:
  -Mucosal inflammation / dryness
  -Unable to express saliva from gland ducts
- Shiny facets or wear on restorations (bruxism?)
- Location and degree of tooth wear (photos, models, radiographs)

Salivary function assessment

- Flow rate
- pH, buffer capacity (in research)

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Types of defects

- Carious
- Non Carious
  - Developmental
    - Fluorosis
    - Other
  - Acquired
    - Discoloration
    - Fracture
    - Wear

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Tooth wear

Tooth wear is the non-carious (non-bacterial) destructive processes affecting the teeth

Definitions are based on etiology, clinical severity, pathogenic activity or on localization.

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Wear defects

Erosion

Definition: Progressive loss of hard dental tissue by chemical processes not involving bacterial action

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Wear defects

Erosion
Abrasion

Definition: Loss by wear of dental tissue caused by abrasion by a foreign substance (e.g., toothbrush, dentifrice)

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Wear defects

Erosion
Abrasion
Attrition

Definition: Loss by wear of surface of tooth or restoration caused by tooth to tooth contact during mastication or parafunction

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Wear defects

Erosion
Abrasion
Attrition
Abfraction

Definition: Loss of tooth surface at the cervical areas of teeth believed to be caused by tensile and compressive forces during tooth flexure

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Wear defects

Erosion
Abrasion
Attrition
Abfraction

Identification ?

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Abrasion-attrition-erosion?

Abfraction-abrasion-erosion?

Abrasion-erosion?

Abrasion-erosion?

Abrasion-attrition-erosion?

Abfraction-abrasion?

Attrition-erosion?

???!

”demastication”

Erosion – clinical appearance *(anterior)*

- Broad concavities within smooth surface enamel
- Increased incisal translucency
- Wear on non-occluding surfaces
- Loss of surface characteristics of enamel (perikymata) in young children
- Preservation of enamel "cuff" in gingival crevice is common
- Hypersensitivity

Erosion – clinical appearance *(posterior)*

- Cupping of occlusal surfaces, (incisal grooving) with dentin exposure
- Wear on non-occluding surfaces
- "Raised" amalgam restorations
- Clean, non-tarnished appearance of amalgams
- Preservation of enamel "cuff" in gingival crevice is common

Abrasion – clinical appearance

- Usually located at cervical areas of teeth
- Lesions are more wide than deep
- Premolars and cuspids are commonly affected

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Attrition – clinical appearance

- Matching wear on occluding surfaces
- Shiny facets on amalgam contacts
- Enamel and dentin wear at the same rate
- Possible fracture of cusps or restorations

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Attrition vs Erosion

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Abfraction – clinical appearance

- Affects buccal / labial cervical areas of teeth
- Deep, narrow V-shaped notch
- Commonly affects single teeth with excursive interferences or eccentric occlusal loads

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Cervical loss

Locations:	Ling./Bucc.	Buccal	Buccal
Form:	U	Wedge	V-form
Edge:	smooth	sharp	sharp (sometimes subgingival)
Enamel:	smooth often slightly polished	smooth/rough	rough

Probably:

Abrasion □---------- ----------□ Abfraction

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Abfraction vs Abrasion

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1. Diagnose correctly

- Procedure
- Types of defects
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2. Identify causes

- (a. carious) & **b. non-carious defects**

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Erosion - Critical pH

- The pH at which any particular saliva ceases to be saturated with calcium and phosphate is referred to as the critical pH. Below this value, the inorganic material of the tooth may dissolve.
- Critical pH varies according to the calcium and phosphate concentration, but it is usually around 5.5.

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Erosion

Dietary acids principal causative factor.

- Consumption of low pH drinks
- Prolonged, frequent consumption of acidic drinks

- Dietary analysis

Intrinsic erosion is the result of endogenous acid. This is gastric acid contacting the teeth during recurrent vomitting, regurgitation or reflux.

- Bulimia nervosa (*self induced* vomiting)
- Causes of somatic origin include alcoholism, antabus therapy for alcoholism, gastrointestinal disorders.

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Gastroesophageal reflux disease- signs & symptoms

Common Symptoms in Adults	Common Symptoms in Children
•Acid taste in mouth •Persistent coughing •Vomiting •Sense of lump in the throat •Stomach ache •Sore throat •Hoarseness of voice •Choking spells •Voice change •Excess salivation •Gastric pain on awakening •Halitosis (bad breath) •Belching •Heartburn	•Difficulty sleeping •Failure to gain weight •Feeding problems •General irritability •Asthma •Recurrent pneumonia •Anemia •Bronchitis •Laryngitis

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3. Restore

- carious & non-carious defects
  - Restoration
    - Composites & Bonding

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Factors to be taken into consideration

Diagnosis

Tooth Defects
Etiology

Size of lesions
Location of lesions

Biomechanic (force
Esthetic concern

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Why restore? 1/2

- Facilitation of self-cleansing and hygiene procedures
- Reduction of plaque retention
- Reduce risk for root caries
- Reduction of cervical dentin sensitivity
- Prevention of pulpal involvement
- Improvement of esthetics
- Re-creation of appropriate coronal tooth length

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Why restore? 2/2

- Diminishment of the progress of the lesion, tooth flexure, and stress concentrations
- Strengthening of the tooth
- Prevention of root fracture
- Restoration of normal anatomic contours
- Improvement of gingival health and symmetry
- Maintenance of the gingival contour

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Management

- Tooth preparation
  - Minimal extension
  - Supragingival margins
  - No need for undercuts/retention lock
- Estimated force
  - No compression
  - Flexion α etiology
  - Wear α etiology, prosthodontics ?
- Esthetics on anterior teeth, premolar

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Restorative material

Alternatives

	Veneer	GIC	GIC-C.R. -hybrid	Composite resin (C.R.)
esthetics	++	-	-/+	+
biological costs	-	++	+	+
longevity	++	-/+	-/+	--/++

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Glassionomercement-resin

Two subgroups

a. Material polymerises without light initiation

b. Light initiation is required

Most products contains 4.5%-6% resin

Selection of restorative material composite resin-glassionomer

- High caries risk: need for F-
- Supragingival margin: moisture sensitive
- Cementum gingival margin
- Cervical abrasion: wear
- Dentin substrate: sclerotic dentin(?), depth of preparation, tubule orientation
- Abfraction: flexion
- Pros: retentive □ wear

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Abfraction vs. Abrasion

Glassionomer or microfill composite resin

Hybrid microfill composite resin

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Common mistakes - composite resin placement

- Improper bevel
- Etching technique and time
- Primer time
- Drying technique
- Moisture contamination
- C.R. partial polymerization prior to insertion
- Underpolymerization
- Bulk insertion of CR
- Void

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CR-Technique Sensitive

LC unit α
Light intensity
Distance

CR:
Thickness
Shade
Filler amount

Other interference
Access
E,D

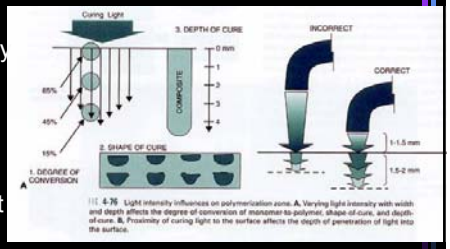
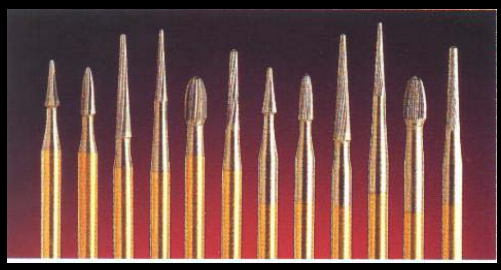


FIG 4-76 Light intensity influences on polymerization zone. **A**, Varying light intensity with width and depth affects the degree of conversion of monomer-to-polymer, shape-of-cure, and depth-of-cure. **B**, Proximity of curing light to the surface affects the depth of penetration of light into the surface.

Polishing of Composite Resins



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4. Reduce risk
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Risk reduction - options - 1/4

Decrease abrasive forces

- Use soft toothbrushes and dentifrices low in abrasiveness in a gentle manner.
- Do not brush teeth immediately after an acidic challenge to the mouth, as the teeth will abrade easily.
- Rinsing with water is better than brushing immediately after an acidic challenge.

Provide mechanical protection

- Consider application of composites and direct bonding where appropriate to protect exposed dentin.
- Construction of an occlusal guard is recommended if a bruxism habit is present.

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Risk reduction - options - 2/4

Enhance the defense mechanisms of the body (increase salivary flow and pellicle formation)

- Saliva provides buffering capacity that resists acid attacks. This buffering capacity increases with salivary flow rate.
- Saliva is also supersaturated with calcium and phosphorus, which inhibits demineralization of tooth structure.
- Stimulation of salivary flow by use of a sugarless lozenge, candy or gum is recommended.

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Risk reduction - options - 3/4

Diminish frequency and severity of acid challenges

- Decrease amount/frequency of acidic foods / drinks.
- Acidic drinks should be drunk quickly rather than sipped. The use of a straw would reduce the erosive potential of soft drinks.
- If undiagnosed / poorly controlled gastroesophageal reflux is suspected, refer to a physician.
- In the case of bulimia, a physician or psychologist referral is appropriate.
- A patient with alcoholism should be assisted in seeking treatment in rehabilitation programs.

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Risk reduction - options - 4/4

Enhance acid resistance, remineralization and rehardening of the tooth surfaces

- Have the patient use daily topical fluoride at home.
- Apply fluoride in the office 2-4 times a year. A fluoride varnish is recommended.

Improve chemical protection

- Neutralize acids in the mouth by dissolving sugar-free antacid tablets 5 times a day, particularly after an intrinsic or extrinsic acid challenge.
- Dietary components such as hard cheese (provides calcium and phosphate) can be held in the mouth after acidic challenge (e.g., hold cheese in mouth for a few minutes after eating a fruit salad).

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Thank you for your kind attention

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