ORAL HEALTH

& working with herbs



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a runner grazes their leg

Picture it ... it's 2014 ...





a cut on an elbow needs our attention

a child grazes their knee

We might use a salve, a diluted tincture, or a cloth dipped in a tepid antiseptic teat to clean a wound



plantain *Plantago spp.*

echinacea Echinacea spp.

yarrowAchillea millifolium

Why an anti-septic?

- To prevent a local infection
- To prevent bacteremia, viremia
 &/or fungemia



barberryBerberis vulgaris



turmeric Curcuma longa

So what about the mouth?

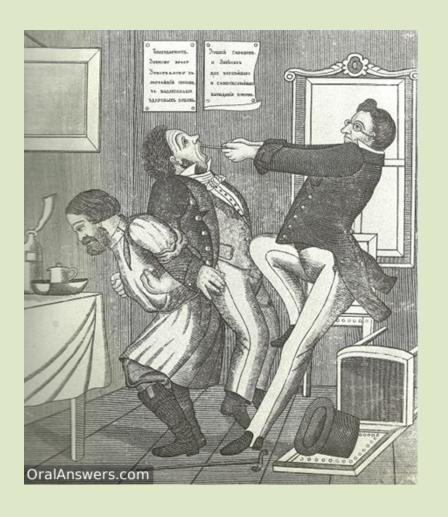
When bleeding occurs as a result of:

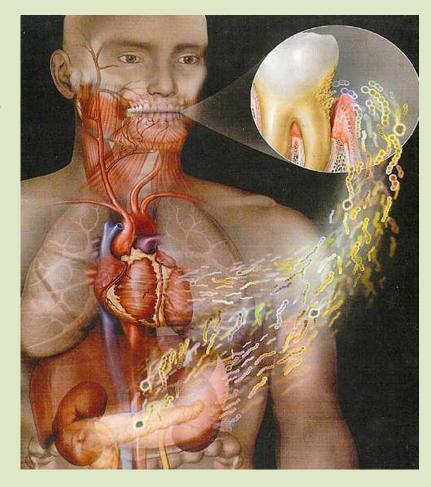
- Brushing
- Flossing
- Chewing
- Dental cleanings
- Extractions/implantations
- The fitting of prosthetics (e.g., braces)
- Disease
- Pharmaceuticals/recreational drug use
- Accident or injury



regularly ... or infrequently

"The whole organism is connected to every tooth."





quote from: Dr Johann Lechner, München Germany

There's more ... after a tongue diagnosis







During the last few years the conviction has grown continually stronger, among physicians as well as dentists, that the human mouth, as a gathering-place and incubator of diverse pathogenic germs [i.e., microorganisms], performs a significant role in the production of varied disorders of the body,

and that if many diseases whose origin is enveloped in mystery could be traced to their source, they would be found to have originated in the oral cavity.

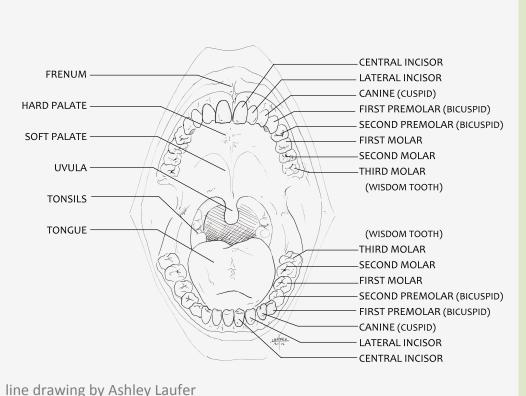
Willoughby D Miller (1853-1907) The Mouth as a Focus of Infection

Thoughts to consider

- An unhealthy mouth may impede the efficacy of any protocol designed to address systemic inflammation.
 - N.B. Gum disease is often silent, symptomless, overlooked and/or ignored.
- Failure to work **topically** in the mouth alongside of other systemic protocols (for chronic inflammation) may well give rise to a continuing root source of inflammation and hinder, possibly confound, healing.



KNOW THY MOUTH



- Hosts a variety of micro-organisms which, ideally, live in balance.
 - → > 500 different spp.
- We produce about 3 pints (1,400 ml) of saliva/day containing
 >100 million microbes per ml
 - Helps to maintain a near neutral pH in the mouth & remineralize our teeth
 - supersaturated with phosphate, hydroxyl ions & calcium
 - (Re)mineralization aides in reversing early carious lesions
- The gingival crevice can provide a habitat for a variety of anaerobic species

Hygiene matters (!) Questions to ask ourselves ... and clients

- What's your brushing routine?
 - ◆ Twice a day? Twice a week? Monthly? Before meals? Sex? After beverages?
- ◆ Are you a member of the 'in a rush I'll give a quick brush' crowd?
 - How long do you spend attending to oral health?
- When did you last use dental floss?
 - Buy it?
- When did you last change your toothbrush?
 - Rinse or wash your toothbrush?
- Do you massage your gums?
 - Manually? With foods? With oils? Do they bleed when you brush or floss?
- Do you use mouthwashes or rinses which contain [hidden] sugar? Water? Salt or herbal blends?
 - How often?

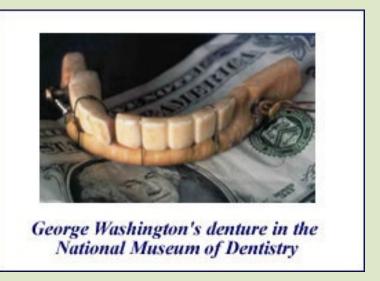


- Is your mouth dry? Have a "funny taste"?
- Any pain or discomfort?Any bleeding?
- Does your breath smell?After roasted garlic? All the time?
- How many teeth do you have? Which ones?
- How many are filled?

Decayed?

Missing? (Why and when were they removed, if at all?)



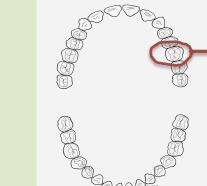


- Fillings, caps and crowns, prostheses?
 Do they fit?
- Does your mouth affect your food choices?
 Any digestive issues?
 (remember, digestion begins in the mouth)

Record keeping is not someone else's business ... it's our responsibility!

Lost rugby match & lost tooth, Oct 15





Permanent Tooth Chart

Extracted 2006, post infection

Date: ______
Number upper teeth: _____

Number lower teeth: _

Date: _____

Number upper teeth: _____

Number lower teeth: _____

Each tooth may be identified as healthy (H), decayed (D), filled (F); (M/E) can be used for missing/extracted; BR for bridgework and RC for root canal. Also include the observations about the gums throughout the mouth, noting any puffiness (P), redness (R), swelling (S), tenderness (T) or bleeding (B).

Tooth powders

* ground VERY fine * Store in an airtight container *

** Only share with a toothbrush that you trust! * *

e.g., Dr Christopher's tooth & gum powder

Equisetum arvense (horsetail): astringent, vulnerary

Mentha piperita (peppermint): aromatic, anti-inflammatory, antimicrobial

Quercus alba (white oak): astringent, antimicrobial, anti-inflammatory, vulnerary

Zanthoxylum americanum (prickly ash): circulatory stimulant, alterative, antimicrobial

Myrica cerifera (bayberry): astringent, antimicrobial, vulnerary

Ulmus rubra (slippery elm): demulcent, antitussive/emollient

Stevia rebaudiana (stevia): sweetening, reduces adsorption teeth/gums

In the absence of little or any periodontal disease:

orris root (Iris germanica), which grows in our zone, can be used as a base; in warmer growing zones arrowroot (Maranta arundinacea) can be substituted; Kudzu (Pueraria spp.) root can also be used – all are gluten free

Base: use

½ - ¾ of the volume (by weight) of total formula or4:1 base to herb (astringent, vulnerary, antimicrobial, etc.)

Powdering herbs finely is key!



Hygiene & herbs

Daily hygiene for a healthy mouth

Brushing:

Toothpastes: commercial – avoid fluoride, SLS & sugars

With a finger & warm (salt) water or other abrasive (e.g. charcoal, burnt sage (Salvia spp.))

With twigs/roots

Licorice, alfalfa, and marshmallow roots (Glycorrhiza glabra, Medicago sativa & Althea officinalis, respectively) or Betula spp., (birch) and of course there's always neem (Azadirachta indica)



Glycorrhiza glabra

Clay & essential oils or tinctures/teas

Sodium chloride (salt)



NB: There is a 'move' to introduce fluoride into table salts (& bottled waters). We all need to regularly read labels – not just on water bottles

Sea salts are widely available

As a mouth rinse, 1-2 teaspoons salt per warm glass of water; stir well and rinse mouth thoroughly, while focusing on pulling the water between the teeth (over a basin after a trauma, if nec., to catch a tooth).

Rinsing with salt water can be done at various times:

- ◆ on a regular basis to maintain oral hygiene and astringe the gums ◆ when debris is lodged ◆ as a rinse after liquids
- with pain or discomfort to reduce inflammation

Brighteners, rinses & mouthwashes

Sage (Salvia officinalis): anti-inflammatory, antimicrobial, antioxidant, antiseptic, aromatic, astringent, carminative, diaphoretic (taken hot; antidiaphoretic (taken cold)), antipersperspirant, vulnerary

♦ fresh leaves can be used as a whitening agent; also has the effect of stimulating circulation in the gums

♦ a simple decoction is a very suitable mouthwash. Variations, per quart (946ml) include:

2 parts sage 1 parts sage

0.5 parts echinacea (root) 2 parts rose hips (Rosa spp.)

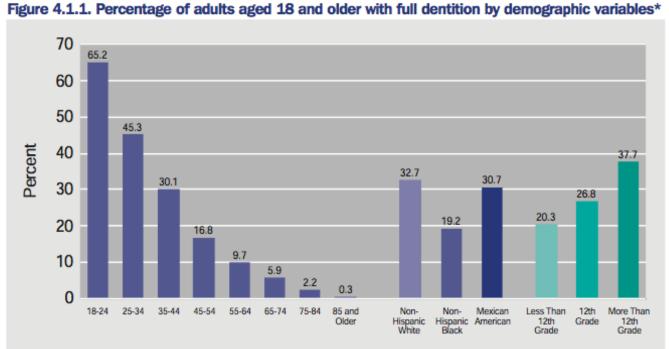
2-4 cardamom pods (Elettaria cardamomum) 1 cinnamon stick (Cinnamomum spp)

for each, steep overnight & strain

A balanced approach to daily care

- Analgesic
- Anti-inflammatory
- Antimicrobial
- Antioxidant
- Aromatic
- Astringent
- Circulatory stimulants
- Demulcent
- Flavorants (or "flavor ants" as my spell check suggested)

Is tooth loss inevitable? NO!



*Age standardized to the year 2000 U.S. population except for age groups.

Data source: The Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention.

Many clues from clients that warrant probing about the mouth, such as ...

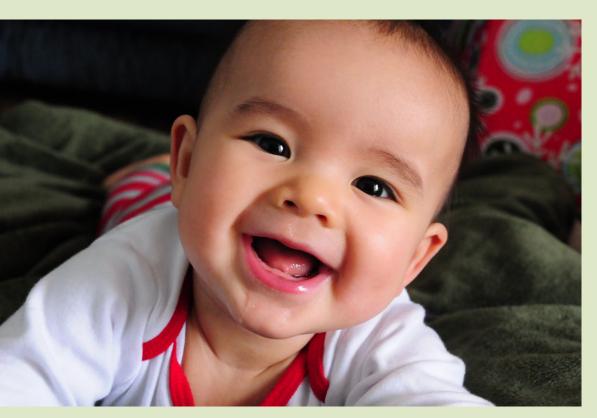
- Rx (xerostomia, bleeding, altered taste, inflammation, cavities, bone loss/hardening, sores, discoloration of the gums, enlargement of the gums, thrush)
- Pain (constant, upon chewing, upon arising)
- Systemic inflammation (of most any type)
- Redness (anywhere particularly in the mouth)
- Heat (anywhere particularly in the mouth)
- Local swelling (in the mouth)
- Halitosis
- Bloating/gas (bolus)
- Nutritional deficiencies (change of diet/poorly fitting teeth)
- Social isolation (fear of smiling, opening the mouth, pain upon talking)
- Irritability
- Insomnia

And of course we mighn't have a clue ... any number of oral conditions are asymptomatic



- Look to the digestive tract ... Halitosis
 - Bitters
 - "Spice lily tea"
 - 2 pts cardamom pod (Elettaria cardomomum)
 - 1.5 pts cumin seed (Cuminum cyminum)
 - 1.5 pts fennel seed (Foeniculum vulgare)
 - 0.5 pt orange peel (Citrus sinensis)
 - Bruise seeds and steep in a mug of hot water 10 minutes or more, covered. Sip before, during or after a meal.
 - (an excellent tea adapted from Susanne Poth & Gina Sauer)
- ◆ As a daily mouthwash, add 1 part echinacea (*Echinacea spp.*) & bring the total volume to 1 quart (946ml); for use TID
- Consider adjusting daily oral regime & don't forget to look to the mouth

Remember the age of a client can affect some of their oral health experiences



Teething can generally begin anywhere between 5 months to a year; some children begin earlier, others later. Don't forget, teeth emerge from infancy well into adulthood!

Symptoms? Redness or swelling of the gums ◆ irritability ◆ sleeplessness

- ♦loss of appetite
- ◆dribbling (increased saliva production)
- ◆chewing ◆crying ◆changing bowel habits ◆clinginess

Earaches, fevers, respiratory symptoms, as well as facial rashes can accompany teething.

Applications: teething

- **Gum massage**: pads of the finger; circular motions inside and outside; without herbs or with e.g., teas of catnip (*Nepeta cataria*), chamomile (*Matricaria recutita*), fennel (*Foeniculum vulgare*) or a witch hazel (*Hamamelis virginiana*) extract
- Anesthetize with cold (e.g., frozen washcloths, popsicles)
 - 0.5-1 oz (14-28g) dried herb to 1 pint (454ml) water; steep covered 10-15 min; cool; either saturate cloth or freeze in cloths/popsicles etc.
- Chews: roots (Althea officinalis), dried dates (Phoenix spp.)
- Plasters, pastes & rubs for direct application to the gums:
 - 1 drop (gtt) clove oil (Syzygium aromaticum) to
 - 1T (15ml) honey as a rub, applied TID or PRN
 - (carrier oils can be substituted for honey)
 - Powdered slippery elm (*Ulmus rubra*); a paste with chamomile tea
- Topical oils infused with chamomile & calendula (Calendula officinalis)
- Heating compress, hops (Humulus lupulus) or dried milky oats (Avena sativa) & hops
 - ~ lavender (Lavendula spp.) for aroma/nervine
- Syrups might best be avoided if sugar-based.
- Nervines for the breast feeding Mom (& other household members!)



Making a paste or a poultice





healthy gums ...



... hold our teeth securely

... are firm, not limp, often pink in color reflecting oxygenation & good blood supply which carries toxins away

... are rarely red, grey, purple, blue, white or black although mucosal coloration is related to race and ethnicity

... fill the spaces between our teeth

... are dimpled somewhat like the skin of an orange

... are not tender

... don't bleed when brushed or flossed

... don't smell!



and then ... there's Periodontal Disease



Gingivitis: little or no discomfort; the gums are discolored, often red, swell and bleed easily. It's reversible & associated with poor oral hygiene, ill-fitting dentures & mouth breathing.

Chronic worsening; pockets deepen, the gums pull away from the teeth



Periodontitis: eventually, teeth can become loose; bone loss is common and teeth may have to be removed ... or they just drop out.

Periodontal Disease begins with Poor Hygiene and Plaque

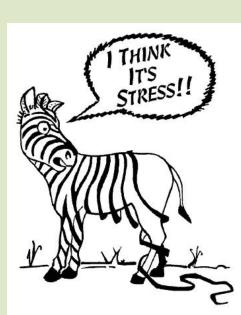
- Plaque precedes tartar (P before T).
- Plaque ...
 - ... is soft, sticky, colorless and contributes to bad breath.
 - ... is continually being deposited on our teeth & gums
 - ... has recently been redefined as a "biofilm" as it harbors microbes and is continuously being formed and reformed.
- When it sits on the teeth, it absorbs minerals in saliva, changing the pH of the mouth.
- Plaque If removed regularly, the likelihood of gum disease diminishes.
- When not removed, it will harden and attach to the tooth. This is tartar.
- Tartar ... AKA Calculus (hard? It is!)
 - ◆ It harbors bacteria and other microbes; inflammation of the gums ensues if it's not removed; the bacterial acid bi-product breaks down enamel; tooth sensitivity can ensue as will tooth decay.



It's not just cigarettes, but also pipes, other tobaccos (including organic), cannabis, "chew" and snuff

Predisposing factors for periodontal disease include:

- Certain medications
- Xerostomia
- Defective dental work
- Diabetes & other inflammatory conditions
- Genetic predisposition
- Misaligned teeth
- Hormonal fluctuations
- Immuno-deficiencies
- Poor nutrition
- Alcohol & sugar
- Smoking & chewing
- Poor oral hygiene
- Stress



Recognizing inflammation



Judy
24 y/o female
wanting to conceive



Healthy gums



Healthy Teeth &	Gingivitis	Early	Moderate	Advanced
Gums		Periodontitis	Periodontitis	Periodontitis
Gums are pink or coral colored; tissue firm and resilient; few, if any, crevices or pockets	Gums are inflamed at the neck of the tooth; some pocketing and gingival bleeding on probing; with no deterioration of supporting tooth structure	Inflammation of periodontal ligaments*; minor loss of attachment; some pocketing and gingival bleeding; no tooth mobility; no connective tissue loss	Moderate loss of attachment and/or moderate to deep pocket formation. 30%-50% loss of bone support; slight tooth mobility	Advanced breakdown of supporting periodontal tissues; deeper pocket depth &/ or significant gingival recession; severe loss of attachment; > 50% loss of bone support & considerable tooth mobility

^{*} tendon-like tissue, surrounding the root, attaches the tooth to the jawbone

Periodontal disease and the oral systemic connection

Enamel

Dentin

Pulp

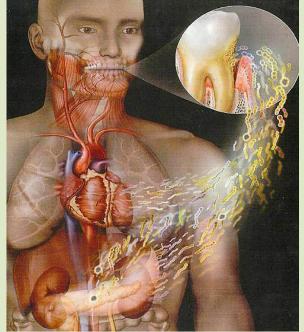
Cingina

Alveolar

bone

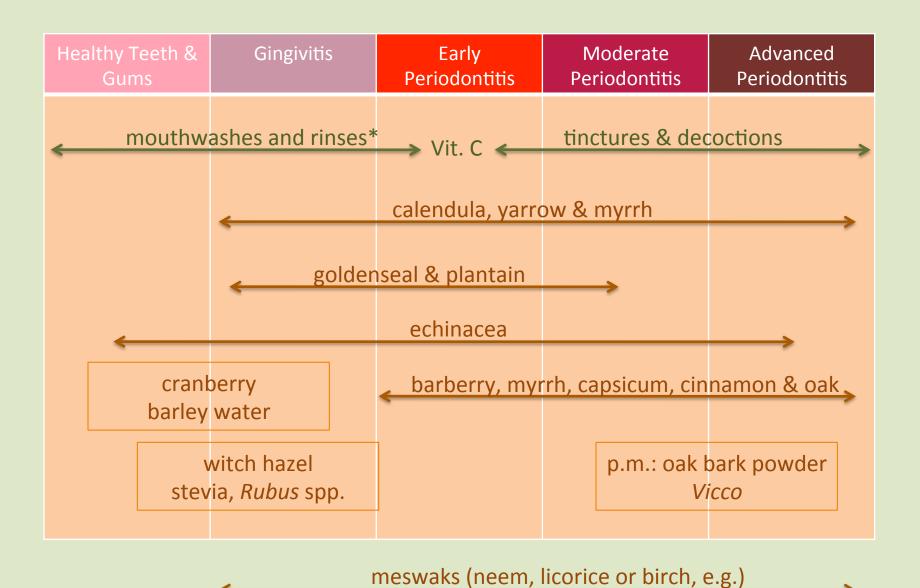
Nerve anerry

and ven



- Alzheimer's disease
- arthritis
- •autoimmune diseases incl. MS, RA, Crohn's
- brain abscesses
- candidiasis
- carotid artery stenosis
- cognitive dysfunction
- colon cancer
- diabetes
- erectile dysfunction
- •gastrointestinal cancer
- genetic disorders (many)
- heart diseases
- herpes-related
- HIV
- •immune susceptibility
- infectious endocarditis
- mono (glandular fever)

- kidney infection
- •liver disease
- •lung cancers
- low fertility in men
- lung infection/COPD
- mouth and throat cancer
- osteoporosis
- pancreatic cancer
- pre-term/low birth weight
- respiratory infection
- stroke
- syphilis
- systemic lupus
- tuberculosis
- ulcers
- Vitamin C deficiency



^{*} which often are diluted tinctures, teas and decoctions

Healthy Teeth &	Gingivitis	Early	Moderate	Advanced
Gums		Periodontitis	Periodontitis	Periodontitis
Vit. C: look first to foods, supplement if smoking, & with other health concerns, incl. stress	self heal & p dash of ro elderberry (Topical CoQ10, calendula, yarrov 3:2:1 parts, 5ml Q barberry, myrrh, o 5:0.5:1:1 parts, 2 lantain water, a se honey and mulberry) juice: outhwash.	ID, 30 days)	on & oak

Remember oral health can vary by age, economic status, ethnicity & geographically. It can be affected by injury & hygiene.

It will vary from one tooth to the next tooth!

It can also be affected by disposition, heredity, pharmaceuticals, habits and state of mind

(to name but a few variables).

Oh, it's also affected by what we eat, who we kiss & how often we brush our teeth*

Dental Caries

- Infectious disease of teeth in which organic acid metabolites lead to gradual demineralization of enamel; destruction of tooth structure
- Any tooth surface can be affected
- Streptococcus mutans—most common bacteria involved
- Time
- Drop in salivary pH to below 5.5
- Cariogenicity of foods
- Frequency of consumption of fermentable carbohydrate
- Food form—slowly dissolving
- Food combinations
- Nutrient composition of food/beverages
- Timing (end of meal)



Caries & Cavities - a bacterial infectionoften causing holes in our teeth



Oral health begins in utero

Decay? Caries can begin with the first bottle!



Healthy primary (baby) teeth

Baby bottle decay often results when young people are put to bed with <u>sugar</u>

Feeding until a child falls asleep, even at the



Mild decay

Milk, juices, sodas ... sugar

breast, should be avoided



Moderate decay

Oddly enough? Sipping a soda or indeed any sugary drink, including alcohol, throughout the day challenges the integrity of the mouth (throughout our lives!)







Cariogenic vs. Cariostatic

Cariogenic: contain fermentable carbohydrates; can cause a decrease in salivary pH to <5.5 and demineralization when in contact with microorganisms in the mouth; promoting caries development

- ◆Fermentable carbohydrates
- ◆Result in lower mouth pH
- Incl.: crackers, chips, pretzels, cereals, breads, fruits, sugars, sweets, desserts

Cariostatic: not metabolized by microorganisms in plaque; do not cause a drop in salivary pH to <5.5

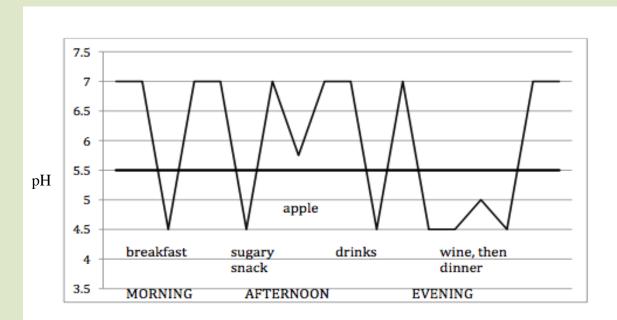
Incl.: protein foods, eggs, fish, meat and poultry; most vegetables, fats, sugarless gums

Anticariogenic Foods:

May increase salivation or have antimicrobial activity

Incl.: xylitol (sweetener in sugarless gum) and hard cheeses

Stephen Curve



Stephan Curve illustrates pH changes in the mouth associated with eating, drinking and snacking. Note, demineralization can occur at or below pH 5.5.

Things that get in the way of dental exams/interventions

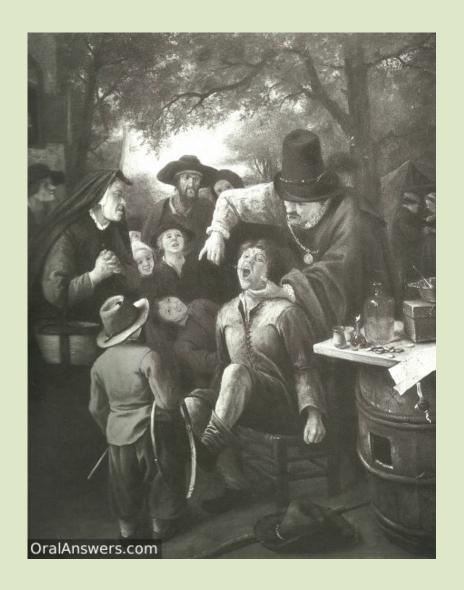


**** Cost of dental care** (≈ \$50 - \$4,500 per filling) **** Mental gymnastics** (e.g., "It's been too long ...") **** Fear & Anxiety**



Piper methysticum, kava kava

- It is a useful anxiolytic for those with a fear of dentists
 (also airplanes, hot air ballooning, etc!)
- Combines well with e.g., milky oats (Avena sativa), lemon balm (Melissa officinalis) & skullcap (Scutellaria laterifolia)
- 5ml an hour before an appt; 5ml upon arrival; 2.5 ml every 30' thereafter
 - * long term dosing to be avoided (especially using this dosing strategy)



Hypericum perforatum, St John's wort



For nerve pain topically and internally and as a (mild) anxiolytic

Multiple drug interactions reported; topical applications can be sensitive to sunlight

- infused oil (externally)
- tea (2t/mug)
- tincture (40-60gtt QID)



also for pain ...

- Pack the tooth with ground clove (Syzygium aromaticum), or willow root (Salix spp.) or yarrow root (Achillea millefolium) or turmeric (Curcuma longa) or prickly ash bark (Zanthoxylum americanum).
- A pinch of these ground herbs can also be combined or added individually to slippery elm (Ulmus rubra) to form a nutritive paste/poultice*; relief is generally speedy.
- Charcoal, betonite clay or plantain (Plantago spp.) can be added as drawing agents.

Poultices should not be swallowed but spit out and replaced hourly.

- EOs if on hand ...
- Heat helps some; cold helps others!
- AVOID ... sugar (that means alcohol also)
- See a dentist if discomfort/pain persists (probably)!

* avoid *U. rubra* if thrush is suspected



How? Bacteria, such as *Staphylococci*, infect the tissue inside a tooth and spread to surrounding mucosa.

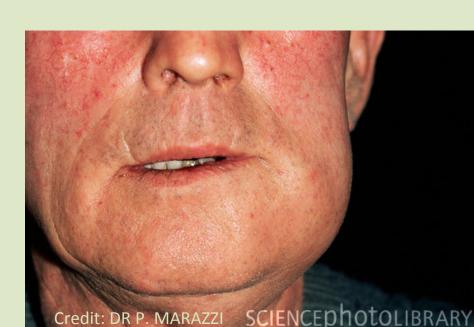
First, the abscess must be drained before either filling or extracting the tooth.

- Draw the infection; use anti-microbials; relieve discomfort & remain well hydrated.
- If symptoms persist, see a dentist

Abscesses

Dull aching to severe pain on touching the affected tooth, on biting or chewing.

Swelling of the gum over the root of the tooth. Possible release of pus into the mouth so perhaps a nasty taste in the mouth.





Abscesses (con't)



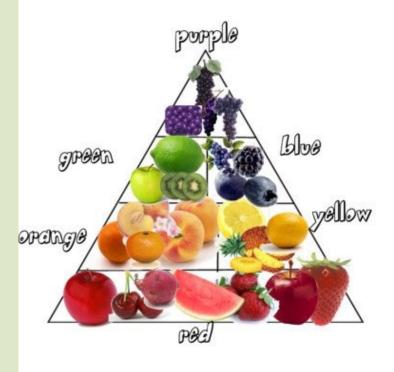
Pack with freshly chewed plantain leaf & dried echinancea root (3:1), moistened with witch hazel.

Eat plenty of antioxidants & remain well hydrated.

Hydrastis canadensis (goldenseal): 20gtt QID

Rinse with warm salt water frequently and/or a blend of myrrh (*C myrrha*) & clove (Syzygium aromaticum) or neem (Azadirachta indica)

See a dentist



Braces, other prostheses

Often soreness results from the fitting of braces, following lengthy manipulation of the mouth

Abrasion and possibly some bleeding may occur upon initial fitting and subsequent tightenings & /or adjustments



A mouth rinse of plantain, echinacea and myrrh pre- & post exam is very helpful



Externally, on the cheek: infused oils of arnica (Arnica montana) & calendula (Calendula officinalis)

Teas: milky oats (Avena sativa), calendula, cleavers (Galium aparine)

Tincture: willow (Salix spp.) or turmeric (Curcuma longa) e.g., internally &/or applied to the gums with a Q-tip or swilled as a rinse to ease discomfort

Recurrent Aphthous Stomatitis (RAS), canker sore

Recurrent, discrete ulcers found on the mucosa and the tongue

Almost always very uncomfortable

Cause? Stress for certain.

May begin in youth; known to resolve in 3rd decade; often a family history of RAS

Are not known to be infectious, contagious, or sexually transmitted





Adaptogens, nervines, anodynes and immune stimulants; a diet particularly high in antioxidants; slow down (physically, emotionally); water/herbal teas

E.g., mouthwash of goldenseal (Hydrastis canadensis) and cinnamon (Cinnamomum cassia) (10 and 5gtt, respectively per mug warm water); lemon balm (Melissa officinalis) tea can be substituted for hot water

Xerostomia (dry mouth)

- 3 salivary glands produce about 3 pints (1,400 ml) QD
- Flora, pH & minerals
- Sympathetic stimulation reduces the saliva blocking the receptor sites of the neurotransmitter acetylcholine
- Parasympathetic stimulation increases the secretion of saliva.
 (N.B. smell, taste, chewing, chemical stimulation may also have +/- effects)

Look to sialagogues & bitters, incl.:

- cardamom
- cayenne
- ginger
- licorice
- prickly ash



Some Rxs to watch:

- Anxiolytics
- Anticonvulsants
- Antidepressants
- Antihistamines
- Antihypertensives
- Diuretics
- Narcotics
- Sedatives
- Tranquilizers
- ETC.



Candidiasis (thrush)

- Early oral symptoms (at any age &/or depleted conditions):
 - Redness, soreness, inflammation; white patches on cheeks &/or tongue; possible burning or difficulty swallowing; if left, deep cracks (angular cheilitis) may develop in the corners of the mouth)
- White patches can present as a continuous membrane & shouldn't be dislodged as this can worsen the infection; if [easily] scraped off, tissue is likely to bleed.

Care to swab nipples if nursing both before and after feedings; avoid alcohol/sugars, other exacerbants (e.g., yeast, carbs)

Look to barley water; swab the mouth frequently with an infusion of 1 oz. (30ml) warm water, & 5 gtt each of tinctures of black walnut (Juglans nigra), bloodroot (Sanguinaria canadensis), & spilanthes (Spilanthes spp.); follow with a Lactobacillus bifidus solution (1 capsule to 4 oz. warm water per day) as a daily wash until symptoms disappear (after Mary Bove)



DENTAL HERBALISM

NATURAL THERAPIES FOR THE MOUTH



Leslie M. Alexander, Ph.D., RH(AHG), and Linda A. Straub-Bruce, BS Ed, RDH

thanks for your attention

& many thanks to ...

the plants and my teachers, clients, colleagues, friends and family

For consultations, teaching & workshop opportunities, or if you have an interest in herbs for the mouth, please do get in touch



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