2016 Special Care Advocates in Dentistry Annual Meeting Savannah, Georgia

Dentistry and Psychiatric Illness: Challenges to Oral Care

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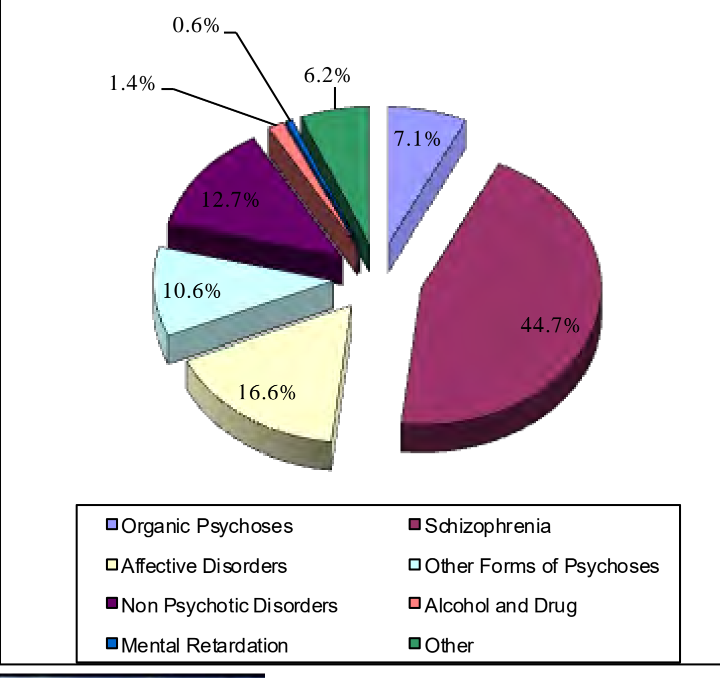
What dental professionals should know about psychiatric disorders:

- they are prevalent
- under-recognized/under-diagnosed
- frequently misunderstood
- assoc. with high rates of medical co-morbidity/dental problems
- reduced rates of compliance with Tx.
- may present with physical symptoms(pain)
- associated with higher rates of substance use disorders.
- psychotropic meds have short/long term effects
- psychotropic meds may interact with drugs in dentistry
- perceived lack of any oral health problems
- often a lack of community support services for independent self-care or assisted care.

Diagnosis on Admission

Diagnosis on Admission	
Organic Psychoses	7.1%
Schizophrenia	***44.7%***
Affective Disorders	16.6%
Other Forms of Psychoses	10.6%
Non Psychotic Disorders	12.7%
Alcohol and Drug	1.4%
Mental Retardation	0.6%
Other	6.2%



What is the “landscape” of psychiatric illness in North America?

- 1 in 5 adults in North America will meet the psychiatric criteria for a mental disorder in their lifetime.
- ~70% of MI have onset in childhood.
- *“disorder” ---- **impairment** is key*

What exactly is “Mental Illness?”

“alterations in thinking, mood or behaviour –or some combination thereof – BUT associated with significant distress and impaired functioning. The symptoms of mental illness vary from mild to severe.”

CHRONIC MENTAL ILLNESS

"Mental illness doesn't choose the most talented or the smartest or the richest or poorest. It shows no mercy and often arrives like an unexpected storm, dropping an endless downpour on young dreams"

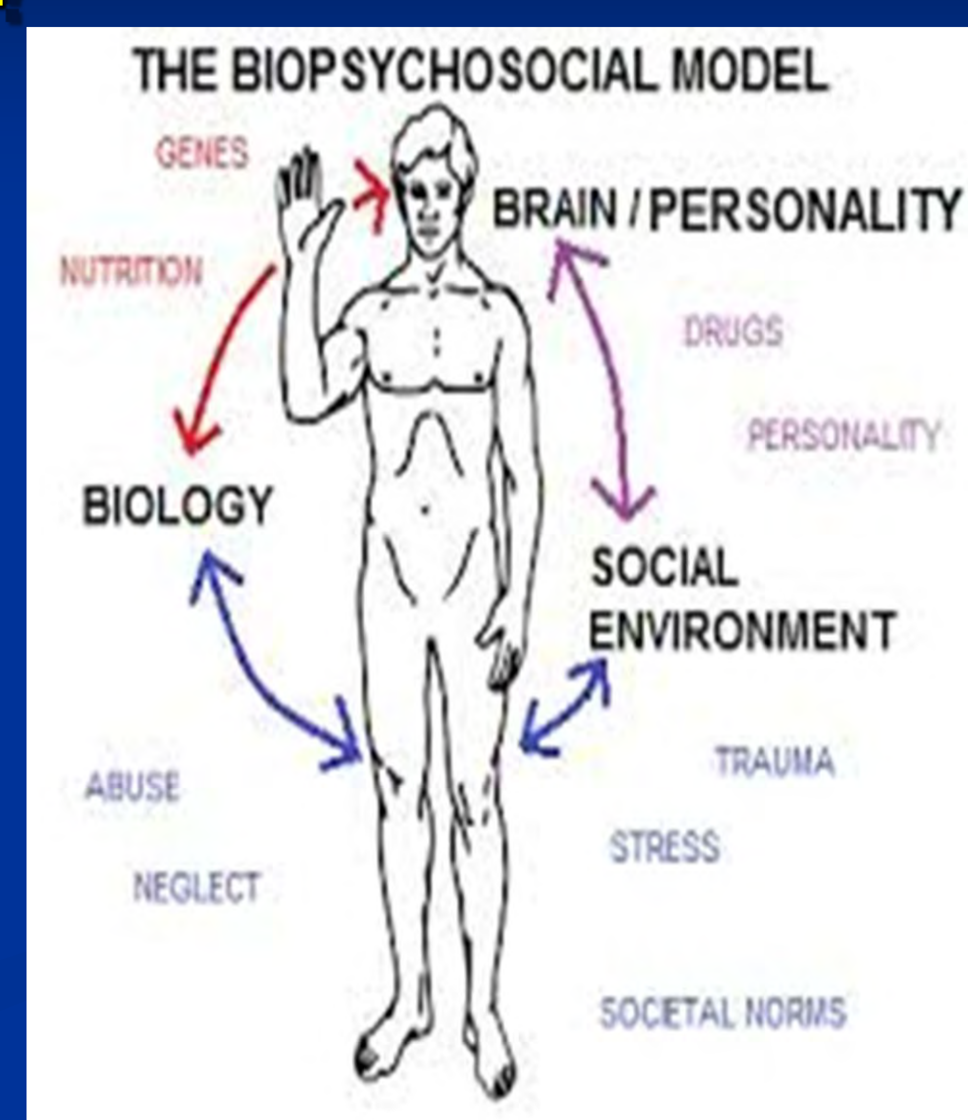
"The Soloist"

“REAL” STATISTICS

- Mental illness/addictions = $300 B per yr. in U.S. – direct/indirect costs
- 35M lost workdays/yr - Canada
- Mental health claims>heart disease for disability costs (> $5B/yr. lost work days.)
- 70-90% with serious mental disorder are unemployed.
- Schizophrenia(2006) – 4.35B(Can) $62B(US)

What are considered possible causes/triggers of Mental Disorders?

- Genetics: altered genes?
- Biochemical derangements within limbic system(emotions, behaviours)
- changes in brain structure?? (MRI,CT,PET)
- TBD



DSM V – Diagnostic & Statistical Manual of Mental Disorders

- a "descriptive" approach to diagnosis based on symptoms rather than causes.
- "clinical significance criterion

STATISTICS - Suicide

- ~2% of all deaths=suicide; 90% have a diagnosable major mental illness. M:F = 4:1
- 10th leading cause of death worldwide
- Canada: 12.2 per 100,000

STATISTICS - Suicide

- most freq. cause of death in Canadians 10-24 yrs after MVA.
- 3rd leading cause of death 15-24yrs- U.S.
- suicide rate in our First Nations communities: 12 times higher than national average. 2/3 of deaths by suicide in 2011 < 24 yrs!!!

Suicide, kids and *dental* professionals…

- ~25% of ortho practices had a patient suicide (AGD Impact, March 2007)
- ~50% had at least 1 attempted suicide
- We see kids regularly!
- We may be able to recommend a timely referral……before it is too late.

Advantage for Dentistry…?

- Dental professionals see their patients more often than MD –often over several generations.
- Dental professionals are in a unique position to develop close rapport with patients + refer to other health care providers within the medical system.

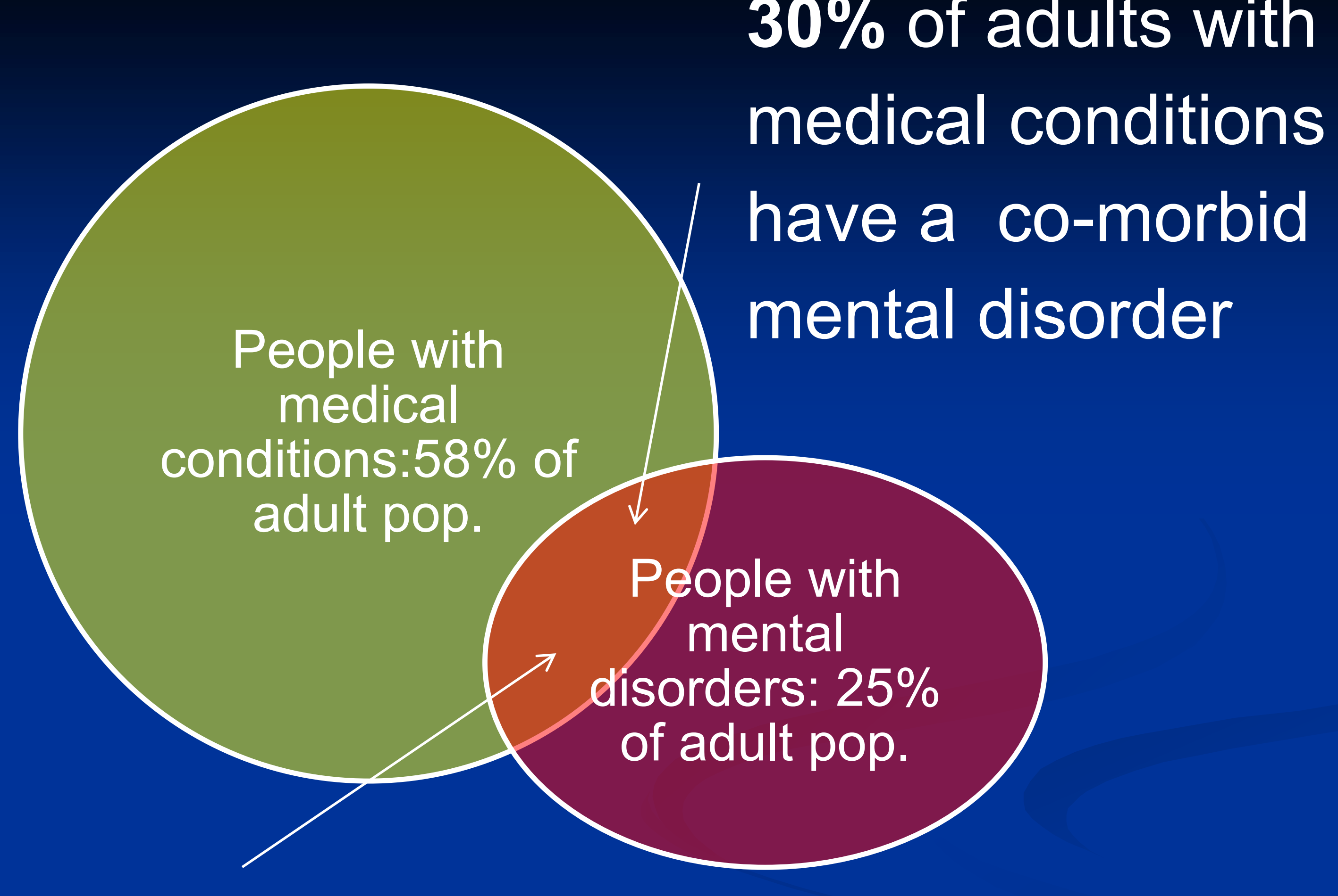
So…. what can we do??

Warning signs that might signal a student is in crisis…?

- Skipping classes
- Social withdrawal
- Eating irregularities
- Unexplained anxiety/behavioural changes
- Increasing inability to cope
- And…obvious neglect in oral health care!!

Mental Health Fact…..

… people with a psychiatric illness experience a “double–burden” = the s/s of the disease + the social stigma, isolation, discrimination that result from having that disease……….



68% of adults with mental disorders have medical conditions

Robert Wood Johnson Foundation
Retrieved from
http://www.rwjf.org/files/research.mental
health.brief.pdf

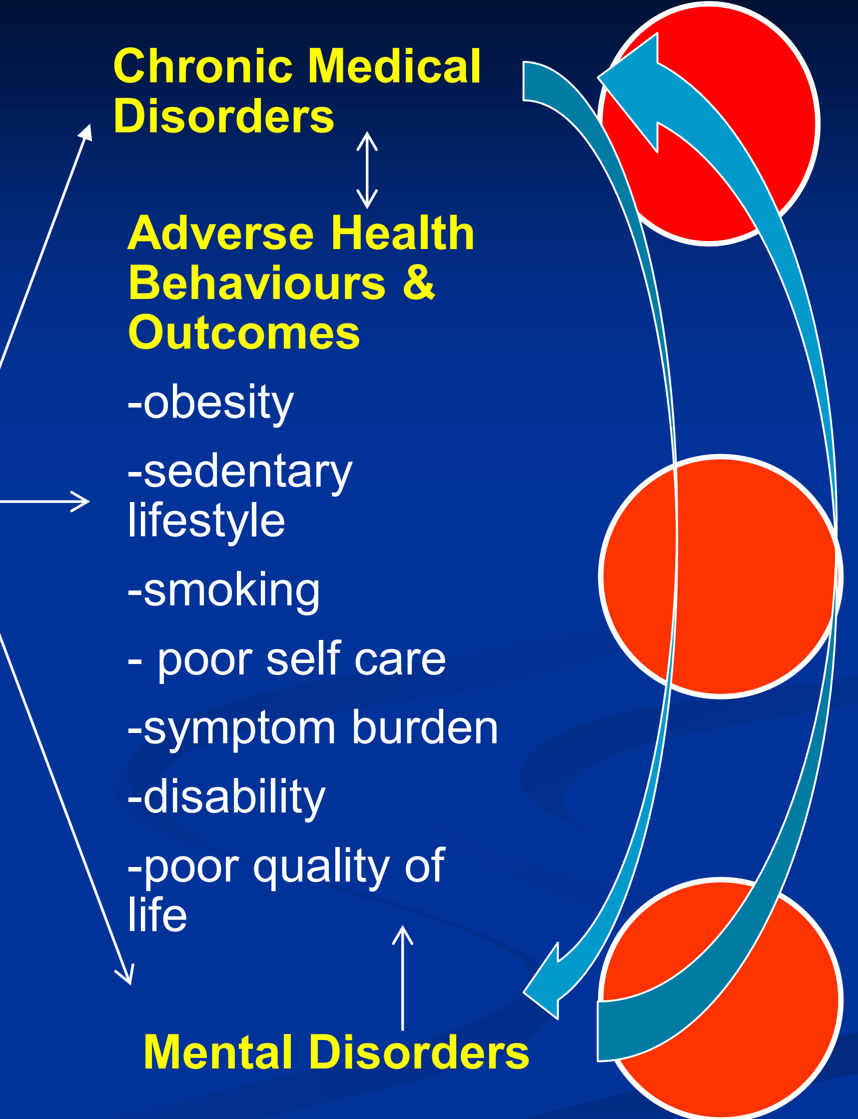
Model of interaction between mental & medical disorders

Risk Factors

Childhood Adversity
-Loss
-Abuse & neglect
-Household dysfunction

Stress
-Adverse life events
-Chronic stressors

SES
-Poverty
-Neighbourhood
-Social support
-Isolation



Modified from Katon WJ: Biological Psychiatry, Vol. 53, No. 3, 2003

FACT…

"adults with serious mental illness treated in the public health systems die about 25 years earlier than Americans overall, a gap that's widened since the early '90s when major mental disorders cut life spans by 10 to 15 years"

www.nasmhpd.org

FACT...

"…. the vast majority of people with mental illness die prematurely **not** because of the illnesses attacking their minds, but the ones destroying their hearts…."

What is “Metabolic Syndrome?”

- cluster of factors associated with increased risk of CVD and Type 2 DM
- a modifiable risk factor – for cardiometabolic risk (+ traditional risk factors; genetics)
- development/progression has visceral obesity as central component
- metabolic syndrome + obesity – chronic inflammation

Medical co-morbidities in serious Mental Illnesses

Co-morbidity	Serious Mental Illness	General Population
Smoking	Up to 85%	~23%
Cardiovascular Disease	Up to 50%	22%
Diabetes	Up to 15%	8%
HIV	3 – 6%	0.3%
Hep C	Up to 19.9%	Up to 1.8%
Hepatic Disease	Up to 9.3%	0.2%
	Sokal et al. *J Nerv Ment Disord*, 2004 Carney et al. *J Gen Intern Med*, 2006	Goff et al. *J Clin Psych*, 2005

Co-morbidities further exacerbated by…

- Failed preventable/modifiable behaviours
- Disease-specific symptoms/behaviours (e.g. depression, negative symptoms of schizophrenia)
- Social support deprivation
- Homelessness/lack of finances
- Poor access to care
- Biased attitudes of HCP's

Therapeutic Goals....
Definition of Recovery

" Recovery means…a journey toward a meaningful life…and a focus on strengths despite limitations…"

Dr. David Goldbloom

CAMH, 2016

Mental Health Facts…..

"There are really only 8 kinds of people suffering from the issues of mental health:

someone's husband, father, brother or son … someone's mother, daughter, sister or wife."

(The Last Taboo, 2001)

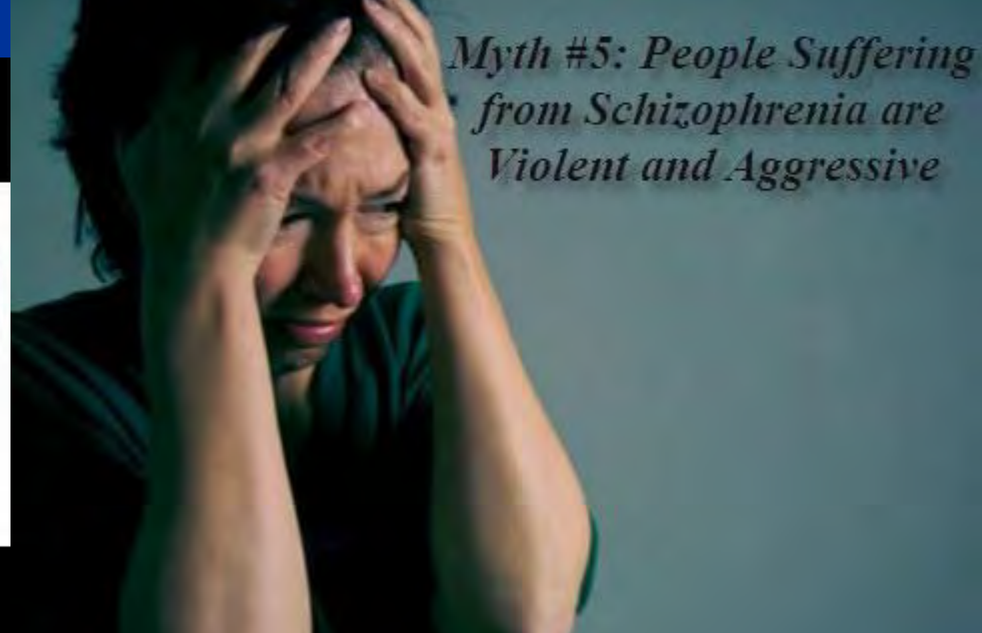
What about Mental Illness and Violence?

Don't believe everything you see in the movies...

MENTAL ILLNESS DOES NOT EQUAL VIOLENCE.

Predjudice hurts. Learn more about the reality of mental illness.

For more information about mental illness call 303.443.4591 or visit www.openthedoors.com



People who DO NOT have a mental disorder commit more than 95% of violent crime in the community….. But the “axe-wielding psycho” is just one of numerous commonly held myths about mental health.

FACT…..

….the reality is that patients will harm themselves (suicide) more than others….

….and they are the victims of crime more than the perpetrators of crime….(2.5% > general population)

Violence in metal illness…

…associating mental illness with violence helps perpetuate prejudice and discrimination – dangerousness and unpredictability are stereotypes underlying social intolerance….

Dental Perspectives…..

- Dental patients are often not inclined to offer information re: history of mental illness – **but history is important!!!!!**

Why?

-feel such information is not necessary for DDS/DH/DT

Why?

-*embarrassment*

Dental Perspectives…..

- DDS/DH/DT often will not ask for information re: patient's psychological profile/potential for abuse based on clinical findings –

Why?

-feel a lack of training/knowledge

-relevance to their work?

- offend patient?

Dental Perspectives…the patient interview

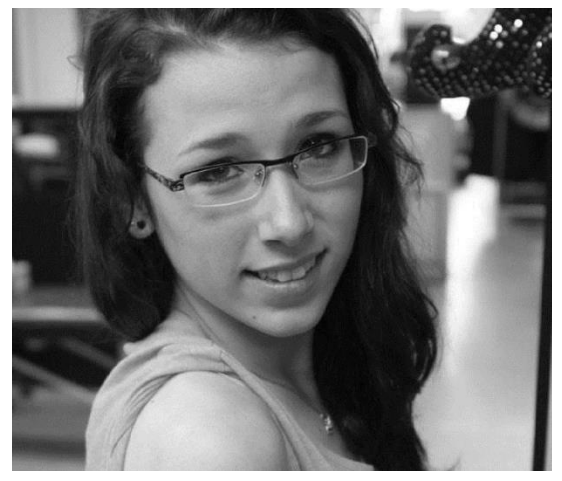
- Show sensitivity to symptoms
- Clarify severity of the disease-how might we help? Severity often more important than a specific diagnosis..
- Content of interview(verbal)
- Process of interview(non-verbal)

So, how can we help?

…demonstrate a positive, empathetic, caring and understanding attitude to what may be the more **unique needs and differing priorities** of our patients dealing with issues of mental illness.

Issues Involving a History of Sexual/Physical Abuse

…and this will include bullying.



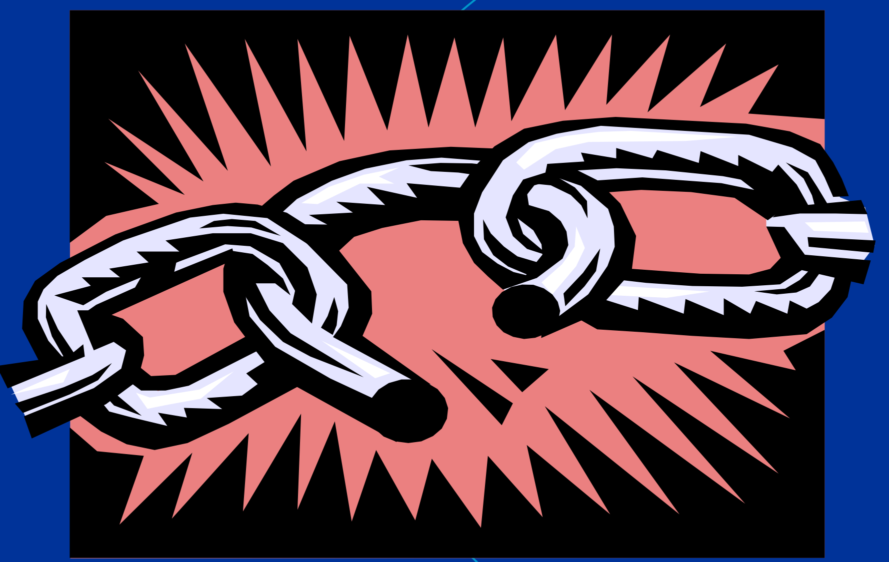
…..concept of risk factors can be considered as potential important clues or as the "weak links" in the chain of good mental health…..

Family hx

Hx sexual/ physical trauma – can "trump" genetics

Low income

Overall health status



Weak links…….

Sexual/physical abuse/bullying = strong predictors for future mood, chronic pain & addiction problems

Sexual abuse victims

- ~ 20% of female(~8%M) patients seeking dental care may have experienced childhood sexual abuse.
- ~22%F/~4%M – victims of sexual abuse as adults
- therefore…DDS/RDH may often unknowingly treat survivors of sexual abuse several times/wk.

(Sexual)abuse victims – reasons for emergency dental Tx:

- Orofacial injures following battering(ask Q's about origin of injuries)
- H&N injuries in > 50% child abuse cases
- Oral cavity – frequent site of sexual abuse in kids

Victims of sexual abuse-
awareness of patient characteristics in the dental office

- Discomfort with body/chair positioning
- Dislike of being touched
- Sense of loss of control – e.g. crying; irrational fears
- Fear of judgement
- Sensitivity to perceived criticism
- Sensitivity to specific smells-e.g. latex
- Sensitivity to having instruments in the mouth – e.g. gagging

Long-term (adverse) coping skills become…

- Anxiety/Depression (poor attendance/cancellations)
- Substance abuse(oral neglect)
- Obesity
- Eating disorders(low self-esteem/self-worth;damage to teeth)
- Self-harm
- ....suicide

Victims of sexual abuse-
awareness of patient characteristics in the DENTAL office

- ….negative coping skills therefore can often result in an increase in:
  - dental decay
  - periodontal disease
  - grinding habits (bruxism)
  - tooth loss and…
  - loss of self-esteem and decreased quality of life

Ontario Shores
Centre for Mental Health Sciences

ANXIETY DISORDERS

- most common of mental illnesses.
- MAY INVOLVE:
- an internal psychological conflict,
- environmental factors (may lead to gene expression),
- physical disease,
- side effects of medications
- or combination of these findings.

Anxiety Disorders you might see….

- ✓ generalized anxiety
- ✓ specific phobia
- ✓ Post-traumatic stress disorder(PTSD)
- ✓ social phobia
- ✓ Agoraphobia
- ✓ OCD
- ✓ panic Disorder
- ✓ Substance-induced anxiety disorder

Anxiety

A sense of uneasiness, apprehension or discomfort caused by feelings of conflict, frustration or symptoms of a disease process.

- low level anxiety can be “normal” but… anxiety often is a component of mood disorders, dementias, panic disorder, psychoses etc.

Management Strategies

(NON-PHARMACOLOGIC)

- ****empathetic approach!!!!!
- distraction techniques
- open dialogue – DDS/patient
- behavioural strategies: "tell-show-do"
- hypnosis

PHARMACOLOGIC:

- Oral moderate sedation
- N2O
- deep sedation/ GA

“TREATING PATIENTS WITH TRAUMATIC LIFE EXPERIENCES”

Journal of the American Dental Association(JADA) 145(3): March 2014

Result of exposure to a traumatic event *outside* of usual realm of human experiences: combat, *sexual/physical abuse*, MVA, natural disasters etc.

Cardinal features:

- hyper arousal-easily startled
- intrusive symptoms-nightmares, insomnia, flashbacks
- numbing of one's psyche; irritability; aggression

Diagnosis made if onset of s/s is at least 6 mths. post

trauma or when s/s have been present > 3 mths. (DSM-IV)

Post-Traumatic Stress Disorder

*** Personal pre-disposition necessary for s/s to develop after traumatic event / genetic(?) factors contributing to individual vulnerability***

Commonest Postdeployment Mental Health Problems

- Post-traumatic stress disorder
- Substance abuse!!! – alcohol, drugs
- Depression
- Pain
- Traumatic brain injury
- Sleep disturbances
- …..and suicide

Post-Traumatic Stress Disorder and…Dental Treatment??

Dental fear may be due to the fact that dental treatment **provokes** memories of traumatic experiences such as mistreatment during childhood including sexual/physical abuse = anxiety, depression, flashbacks etc.

OBSESSIVE – COMPULSIVE DISORDER (OCD)

Obsessions = unwanted, persistent and recurring ideas causing significant impairment – e.g fear of germs; left something unlocked or appliance left on.

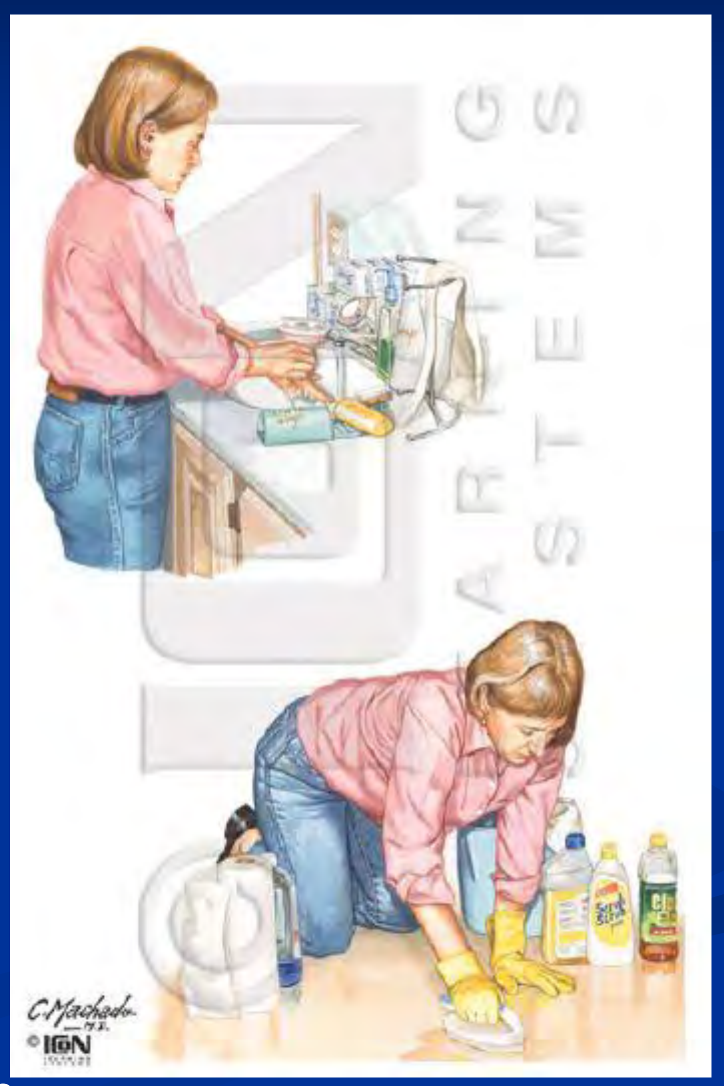
Compulsions = repetitive behaviours performed according to "rules" or in a specific fashion.

Obsessive-Compulsive Disorder

e.g. cleaning, checking – cause embarrassment, anxiety, depression?

ORAL RELEVANCE?

H2O2 – xs. usage – can cause white contact mucosal lesions!



MOOD DISORDERS

- Major Depressive Disorder
- Bipolar Disorder (formerly, Manic-Depressive Illness)
- Postpartum Depression
- Seasonal Affective Disorder (SAD)
- Late Life Depression (>65 yrs)

(impairment of mood, thought context, behaviour)

FACT about depression…

Depression will be…..

the second leading cause of disability worldwide by 2020.(CVD = #1)

(MINISTERIAL ROUNDTABLES - 2001
54TH WORLD HEALTH ASSEMBLY (W.H.O.)

5/10 leading causes of disability worldwide are mental/nervous disorders – (e.g. alcohol abuse, schizophrenia, bipolar disorder)

Depression is really…..

- “an equal opportunity illness”
- an illness (as is diabetes, heart disease)

….. and a leading cause of suicide (15%)

Depression is ***not***……

- just having the “blues”
- a character flaw or weak personality
- a “mood” someone can “snap out of”
- something to be ashamed of

Prevalence and Course of Major Depression

- F> M
- Lifetime prevalence: M = 13.2%
  F = 20.2%
- Recognition rate: 50-70%
- Treatment rate: 30-50%
- ~50-70% will experience a recurrence within first 5 years..

Depression is… Pain

- Pain is second most common somatic symptom in depression, second only to insomnia.
- Pain occurs in over 50% of depressed patients

Depression is… Pain

- Common pain in depressed patients: headaches, facial pain, neck and back pain, chest and abdominal pain and extremity pain
- Pain often dominates clinical picture overshadowing other depressive symptoms

When patients with chronic pain are depressed…

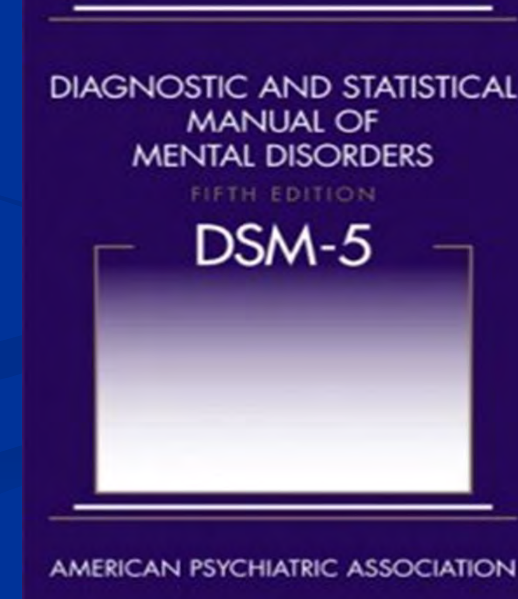
- …..the risk of "adverse selection": pairing of high risk patients with high risk opioid therapy (CNCP) – an increasingly troubling trend in medicine.

Chronic Pain in *Elderly Patients*

2013 AAGP – Chronic pain affects 50% > 65; 70% > 85 = > depression ,anxiety, lower physical quality of life.

Key features of major depression(DSM-V)….

- Persistent loss of interest OR persistent depressed/ low mood most of the day, every day x 2 weeks.
- s/s = IMPAIRMENT, in work, education, social functioning.
- Mild – moderate - severe



What is Bipolar Disorder?

A group of affective disorders, which together are characterized by depressive and manic or hypomanic episodes.

These disorders include:

- ✓ Bipolar Disorder I
- ✓ Bipolar Disorder II (hypomania)
- ✓ Rapid cycling disorder(20%)
- ✓ Bipolar Disorder NOS

Bipolar I Affective Disorder (MANIC EPISODES- DSM V)

- feeling indescribably good –all powerful
- require little or no sleep
- easily explode into anger
- flight of ideas, impaired judgment

Bipolar I Affective Disorder (MANIC EPISODES- DSM V)

- lose touch with reality= psychoses, delusional thoughts, hallucinations
- excessively talkative
- uninhibited; lack of insight into one's behaviour e.g. sexual, financial = risk taking behaviours

Bipolar I Affective Disorder

" a roller coaster of mood"

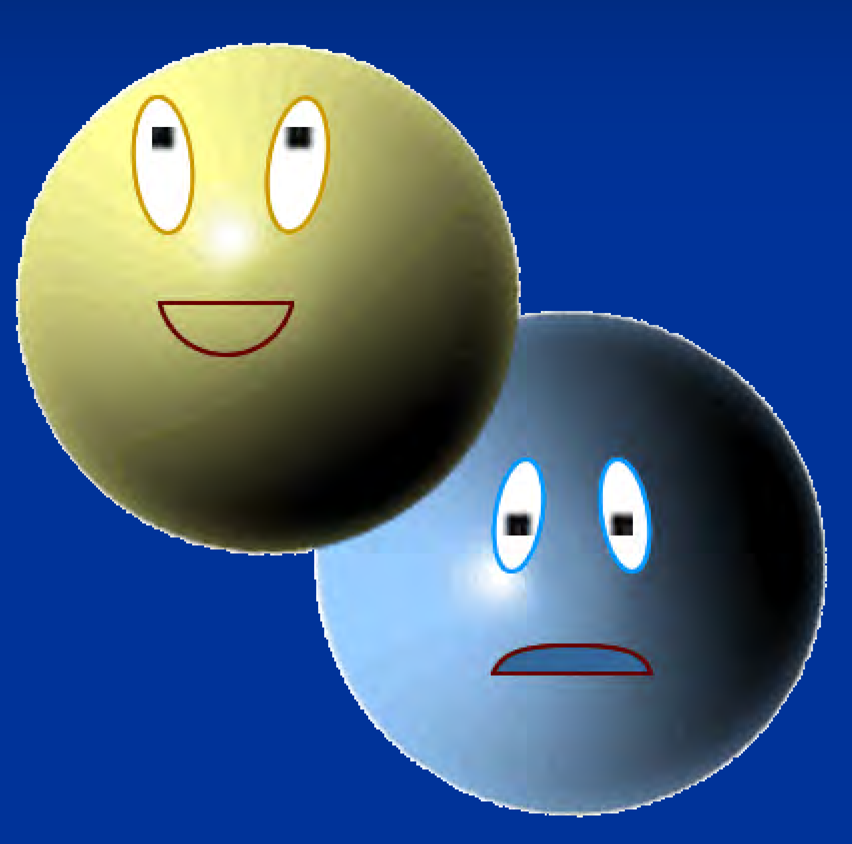
- ~700,000 in Canada
- U.S. –lifetime prevalence rate:4.4%(2011-CDC)
- F > M ~ 3:2

Bipolar I Affective Disorder

“ a roller coaster of mood”

- 32 – 65% adults have onset of BD < 18 yrs of age
- Earlier onset=
  - > impairment
  - inc. recurrences
  - inc. suicide risk
  - more episodes –more s/s

Bipolar I Affective Disorder



- lowest of lows = s/s of major depression
- highest of highs = manic episode, preceded often by "hypomania" = HIGH FUNCTIONALITY but not dangerous to self/others.

Bipolar I Affective Disorder

….poorer prognosis, increased substance abuse, impaired quality of life and increased rates of suicide.

…the "mosts"

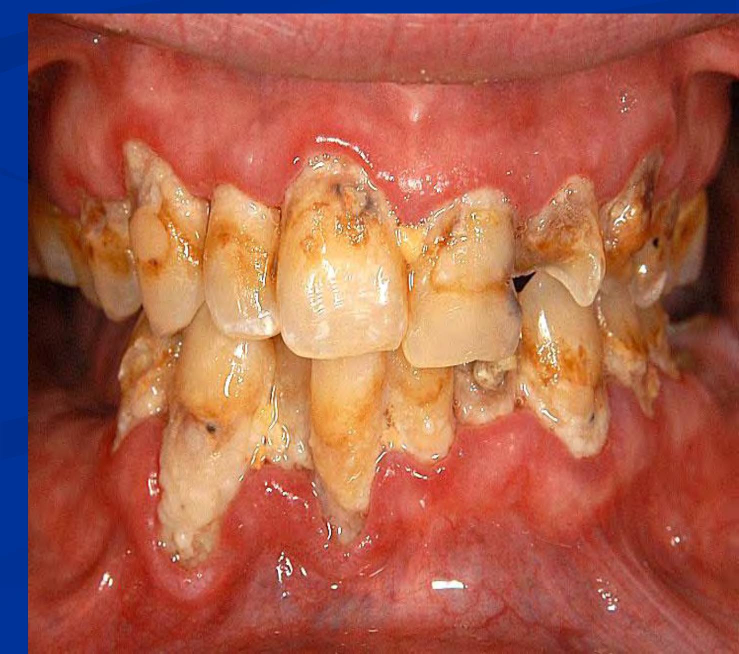
- most lethal; most recurrent; most co-morbidities

Common Orofacial Findings in Bipolar Disorder

Manic Phase	Depressed Phase	Medication related
Mucosal/gingival abrasions and lesions secondary to aggressive brushing habits of teeth	Lack of any form of oral hygiene	Dry mouth
	Increased rates of decay	Dysgeusia
	Tooth loss	Bruxism
	Advanced periodontal disease	Stomatitis/glossitis
	Non-compliance for following oral hygiene instructions	

…also:

- missed appts (lack of interest; cognitive symptoms)
- non-adherence/non-compliance to recommendations for maintaining oral care
- self-blame/guilt for misfortunes



Bipolar Disorder: Oro-facial findings

Rampant dental decay

….. can in turn be a separate stigma producing influence against overall patient rehabilitation & recovery!...

DRY MOUTH(XEROSTOMIA)

Can lead to:

- Choking, dysphagia
- Difficulty speaking
- Dental decay
- Bad breath
- Dysgeusia, burning sensation
- Swollen, red tongue; candidiasis
- Painful, bleeding gums
- Difficulty keeping dentures in

Tricyclic Antidepressants

amitriptyline (Elavil)
clomipramine (Anafranil)
imipramine (Tofranil)
desipramine (Norpramin)

- initially most popular first line Rx.- 1960's
- prevent re-uptake of noradrenaline & serotonin = inc. levels.
- **problems with non-compliance due to S/E of dry mouth (50%) as well as other systemic side effects….

  but nortriptyline less drying than amitriptyline.

TCA’s – Amitriptylline(Elavil)

AMITRIPTYLLINE, clomipramine, imipramine

* Used now mainly for neuropathic pain 12.5 mg vs 150-300 mg for depression

Drug-Drug Interactions…

Tricyclics & MAOI’s

- Limit epinephrine to 0.04mg.(high dose TCA’S)
- potentiate effects of CNS depressants incl. ethanol, opioids, benzodiazepines.
- inhibit metabolism of warfarin – inc. INR.

Selective Serotonin Reuptake Inhibitors (SSRIs)

fluvoxamine

fluoxetine

paroxetine

sertraline

citalopram

…………

"other" antidepressants

- buproprion – selective norepinephrine & dopamine re-uptake inhibitor.
- venlafaxine – serotonin, noradrenaline re-uptake inhibitor. (3rd generation antidepressants)
- Mirtazapine(Remeron) *** only SSRI not causing bruxism but get wt. gain/sedation

Possible Orofacial S/E to Antidepressant Medications

Adverse Reaction	Citalopram	Fluoxetine	Fluvox-amine	paroxetine	sertraline	bupropri on
xerostomia	Y	Y	Y	Y	Y	Y
sialadenitis	N	Y	N	Y	N	N
dysgeusia	Y	Y	Y	Y	Y	Y
stomatitis	Y	Y	Y	Y	Y	Y
gingivitis	Y	Y	Y	Y	N	Y
Bruxism (~5-10%)	Y	Y	N	Y	Y	Y
glossitis	Y	Y	Y	Y	Y	Y
Modified from friedlander	Bostock J. JADA Vol 131 No3					

Mood Stabilizers

- lithium
- divalproex sodium **(Epival) (Valproate)**

++++ expanded use of the following:

- Risperidone **(Risperdal),** olanzapine **(Zyprexa)**
- Quetiapine **(Seroquel)**
- carbamazepine **(Tegretol)**
- Lamotrigine **(Lamictal)**

First line treatment of bipolar I disorder can include:

- ✓ Lithium (mood stabilizer)
- ✓ Lamotrigine (anti-seizure medication)
- ✓ Divalproex (anti-seizure medication)
- ✓ Olanzapine (anti-psychotic)

Valproate

- Increases availability of GABA at post synaptic receptor sites –inc. inhibitory effects
- Used as an alternate to lithium
- S/E: insomnia, alopecia; thrombocytopenia, tremors, nausea, diarrhea, vomiting

Possible Orofacial S/E to Mood Stabilizers

Adverse Reaction	Lithium	Carbamazepine	Valproate sodium
Xerostomia	Y	Y	Y
Dysphagia	N	N	N
Dysgeusia	Y	N	Y
Gingivitis	N	N	N
Glossitis	N	Y	Y
Sialadenitis	Y	N	N
Bruxism	N	N	N
Other	CHO craving	CHO craving	CHO craving
		Neck pain	
Modified from Friedlander et al. JADA Vol 133 Sept			

Side Effects of Long Term Use of Lithium

• Neurologic	lethargy, fatigue, weakness, fine tremors, memory impairment
• Renal	**kidney failure (10-20%+)**
• Thyroid	lithium-induced hypothyroidism
• CVS	T-wave depression on ECG
• GI	nausea, vomiting, diarrhea, abdominal pain
• Hematologic	benign leukocytosis
▪ **ORAL**	**xerostomia, lichenoid drug rxn, metallic taste sensation**

Drug-Drug Interactions…

Lithium

- NSAID's – chronic use may impair renal excretion of lithium, thereby inducing lithium toxicity.(sedation,tremor,seizures,coma)
- Metronidazole – may cause renal retention of lithium with possible lithium toxicity.

Drug-Drug Interactions…

SSRI's

- Prozac, Paxil, Wellbutrin ***reduce*** efficacy of codeine containing cmpds./erythromycin (e.g. Tylenol 3) via action on cytochrome P450 hepatic microsomal enzymes (inhibit CYP2D6)- e.g. post-extraction analgesia
- inhibit metabolism of warfarin – inc. INR
- potentiate depressant effects of sedatives, barbiturates.

Tramadol

- SSRI's
- Possible serotonin syndrome(CAS) – avoid concurrent use
- Carbamazepine (Tegretol)
- Decreased tramadol levels
- MAOI's
- MAOI toxicity enhanced

What about St. John's Wort?

- in combination with psychotropics – may significantly decrease INR
- can ppt. serotonin syndrome
- #1 herbal that interacts with > 60 Rx drugs
- Interaction with other drugs makes these drugs far less effective!! e.g. HIV, BCP cardiac, cyclosporine, anti-depressa anti-anxiety drugs etc. etc.

Electroconvulsive Therapy (ECT) ~ 80 yr. history …what is it exactly?

- for major depression, bipolar disorder refractory to medication/psychotherapy- often geriatric patients; also for patient’s with schizophrenia, Parkinson’s disease

Electroconvulsive Therapy (ECT)

- ? – seizure itself is therapeutic
- ? – seizures cause chemical release - therapeutic
- ***Dental:*** r/o loose/broken teeth re: possible aspiration; identify CD/RPD. Use of bite blocks to protect teeth & tongue.

EATING DISORDERS

Group of psychopathological disorders affecting a patient's relationship both with food and one's body manifesting as a disordered and chaotic eating behaviour.

Characterization of food related problems as an outlet to express psychic suffering and other disturbances.

Prevalence

- 1 in 10 will suffer from a serious eating disorder in their lifetime
- ~1 in 2 girls/ 1 in 5 boys of Grade 10 were either on a diet or wanted to lose weight (Health Canada)

Eating Disorders

- Majority do not access treatment
- Delays in Tx = medical/psychological/social/ORAL-DENTAL complications
- Long lasting implications on development
- Misperception that EDs ONLY HAPPEN to WHITE middle class adolescent girls
- Leading causes of death: starvation, suicide, sudden cardiac death.

Anorexia

What is it exactly???

A serious, life threatening eating disorder characterized by self-starvation and excessive weight loss.

Restricting Type

Binge/purging type

ANOREXIA

Diagnostic Criteria

- refusal to maintain body wt at or > minimal normal wt for age/ht.
- **distortion of** body image.
- amenorrhea – 3 consecutive mths.

Eating Disorders: Illnesses of adolescence

- more common with each new generation of kids
- 2nd most common chronic illness in adolescent girls
- highest mortality rate of any psychiatric disorder in this age group - 12x > than in non-affected individuals
- 1 in 5 die by suicide
- can shorten life span by 20 yrs.

Signs & symptoms

- Refusal to eat certain foods…no carbs at all
- Food rituals – ordered eating patterns; rearranging food on a plate; cutting food into tiny pieces
- Pre-occupation with reading recipe books etc.
- Ease of cooking/preparing/serving food for others

Starvation in children & adolescents

- Leads to serious medical & psychological complications
- Every organ system is affected – resulting ultimately in organ shutdown………..

Progressing to…..

- **amenorrhea**
- constipation
- kidney dysfunction
- UTI
- impaired memory & cognition
- muscle spasms
  seizures

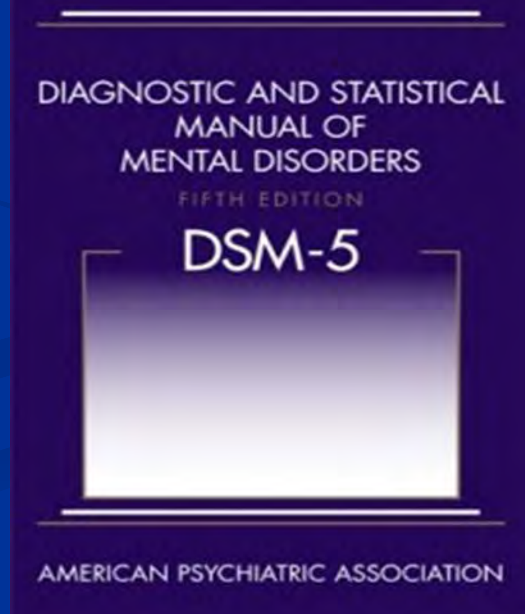
- intolerance to cold
- hypotension
- bradycardia
- osteopenia; osteoporosis
- alopecia
- electrolyte imbalance
- sudden death (ventricular tachyarrhythmia's)

BULIMIA

Binge eating twice weekly over a 3 month period of time followed by self-induced vomiting, laxatives, diuretics, enemas, excessive exercise regimens.

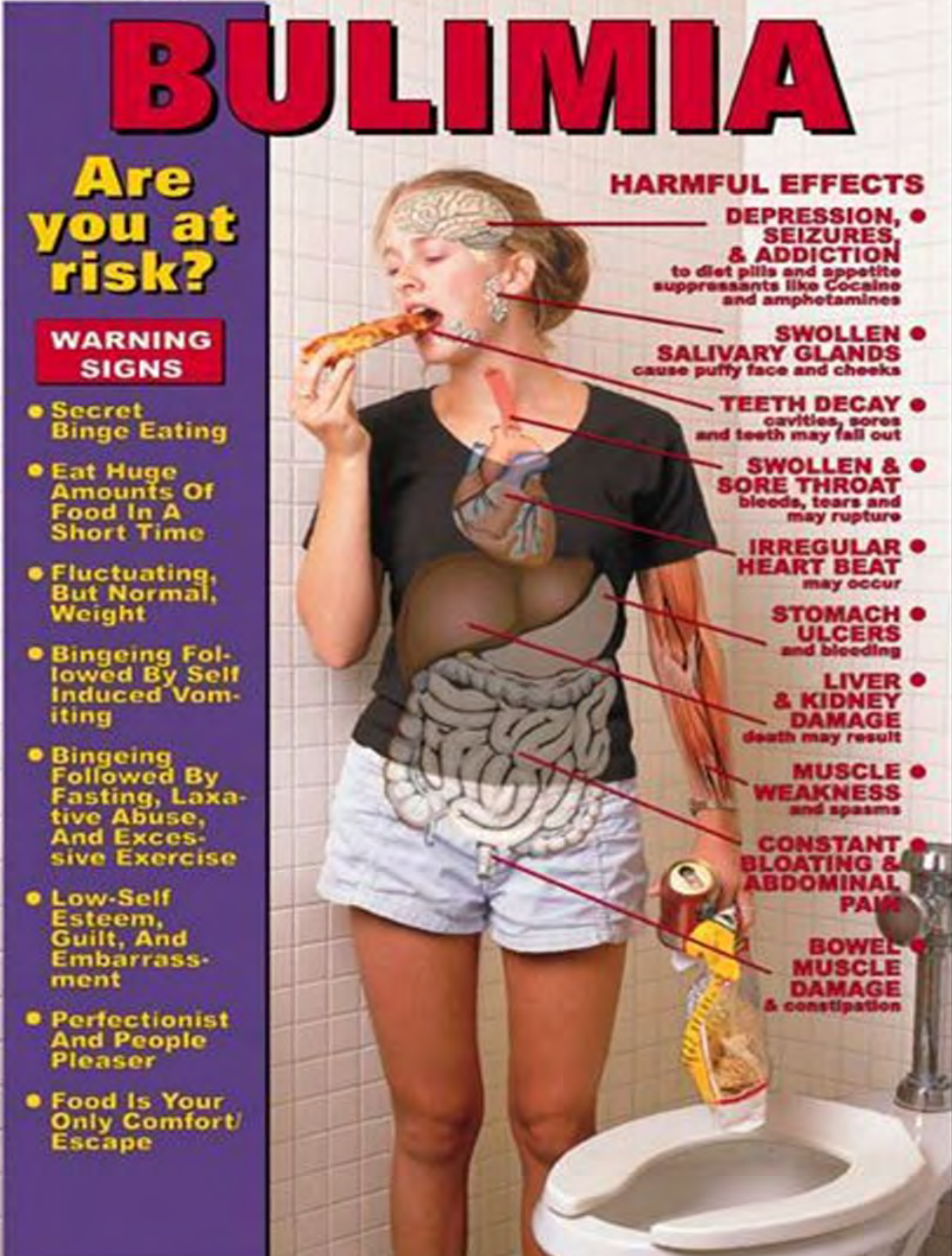
(may in fact be of a more normal weight)

- Mean age onset ~17-18 yr
- Prevalence: 1 – 2.3%



“binge eating and purging

- 35% of patients with Anorexia also suffer from Bulimia
.
- 35% of patients with Bulimia abuse alcohol/drugs.
- 50% of patients with Bulimia suffer personality disorders.



BULIMIA
Signs & Symptoms

- compulsive ingestion of excessively large amounts of food.
- depressed upon the cessation of eating; create anxiety, guilt, shame.
- **secrecy component**

  - which can prolong the dx of dental pathology.

BULIMIA - *Complications*

- aspiration pneumonias.
- esophageal/gastric rupture…bleeding
- dehydration-loss of K+ & Na = cardiac arrhythmias/ electrolyte imbalance.
- pancreatitis.
- muscle weakness
- Ipecac – induced myopathy/cardiomyopathy.
- depression (35-70%)
- substance abuse
- suicide (> than with anorexia)

MEDICAL COMPLICATIONS

- *Anorexia*: arise as a result of starvation (restricting) and weight loss. More susceptible to major depression, substance abuse, anxiety disorders throughout life.

- *Bulimia*: related often to the mode and frequency of purging.

What is ….Diabulimia??

An eating disorder in which people with Type 1 diabetes will deliberately administer less insulin than they need, for the purposes of weight loss.("disturbed eating behaviour")

Oral Manifestations of Eating Disorders

"The dental treatment team may be the first people to become aware of an eating disorder (e.g. bulimia) through detection of the erosive pattern on the teeth; discoloration and staining of teeth and ……………………….

……… must be prepared to discuss and/or refer the patient for a proper medical diagnosis and treatment."

Oral Manifestations of Eating Disorders

As a result of:

- Nutritional disturbances/altered nutritional habits accompanying metabolic impairment
- Lack of regular and effective oral hygiene
- Underlying psychological co-morbid disturbances -depression, substance abuse.
- s/e of medications
- Physical changes e.g. modes of purging

Eating Disorders and Possible Oral/Dental Complications

May cause:

- ✓ Impairment of oral function
- ✓ Oral discomfort & pain
- ✓ Deterioration of esthetics
- ✓ Poor quality of life

- ➢ Can occur very early in the onset of eating disorders –significant diagnostically for the patient

Oral Manifestations of Eating Disorders

Mucosal lesions:

- Mucosal atrophy –deficiency Vit B group; iron deficiency = atrophic glossitis
- Palatal lacerations secondary to frictional trauma by objects placed intraorally used to induce vomiting.

- … and if detected early enough may avoid further dental trauma via earlier dx…

Oral Manifestations of Eating Disorders

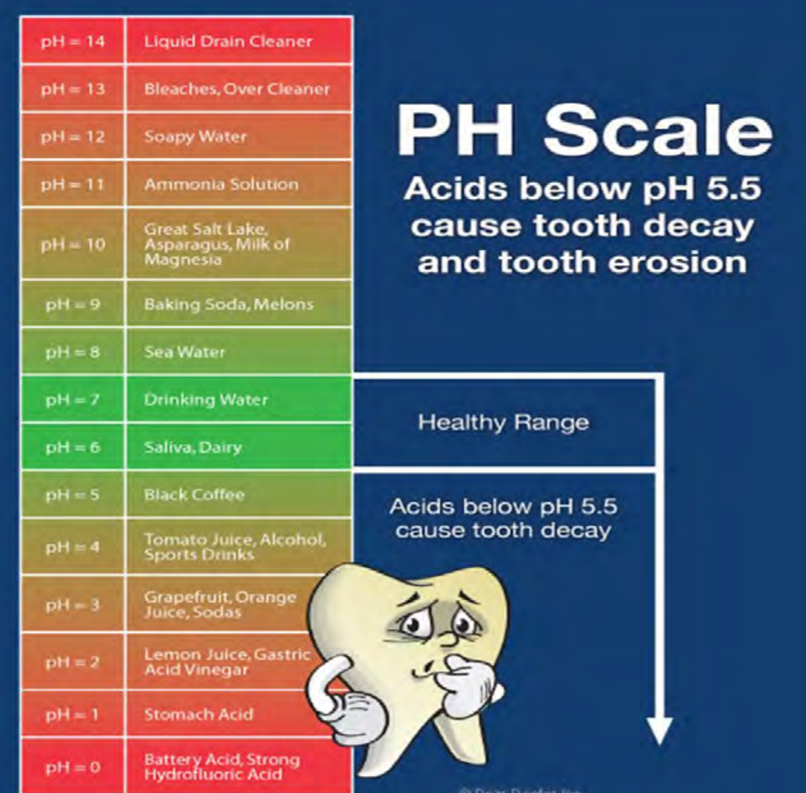
Periodontal("gum related") lesions:

- Nutritional deficiency (Vit C) can be associated with gingival swelling, bleeding, ulcerations, periodontal infection, tooth mobility – all w/wo oral pain.
- Gingivitis – poor oral hygiene.

Oral Manifestations of Eating Disorders

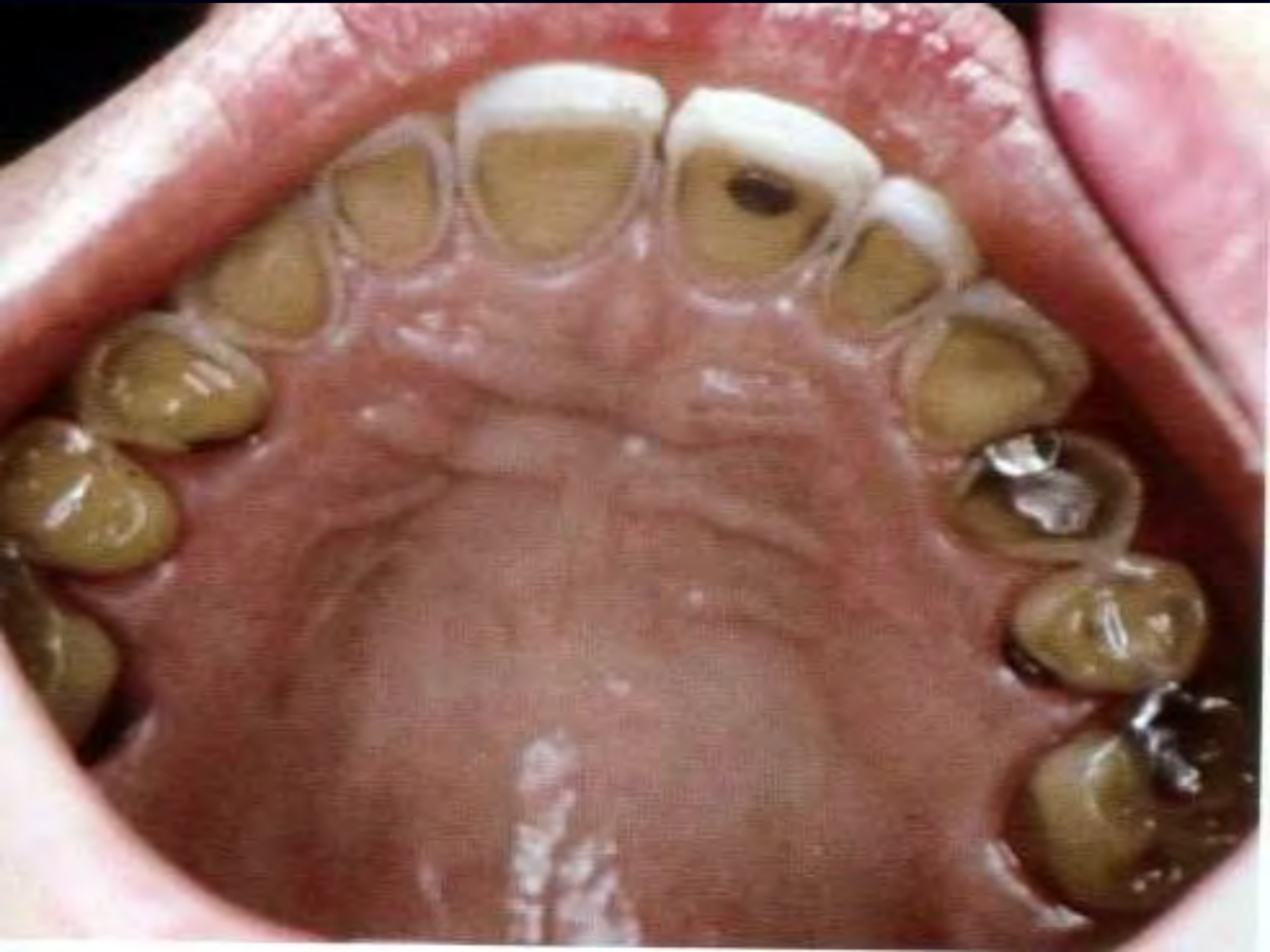
Changes to the teeth:

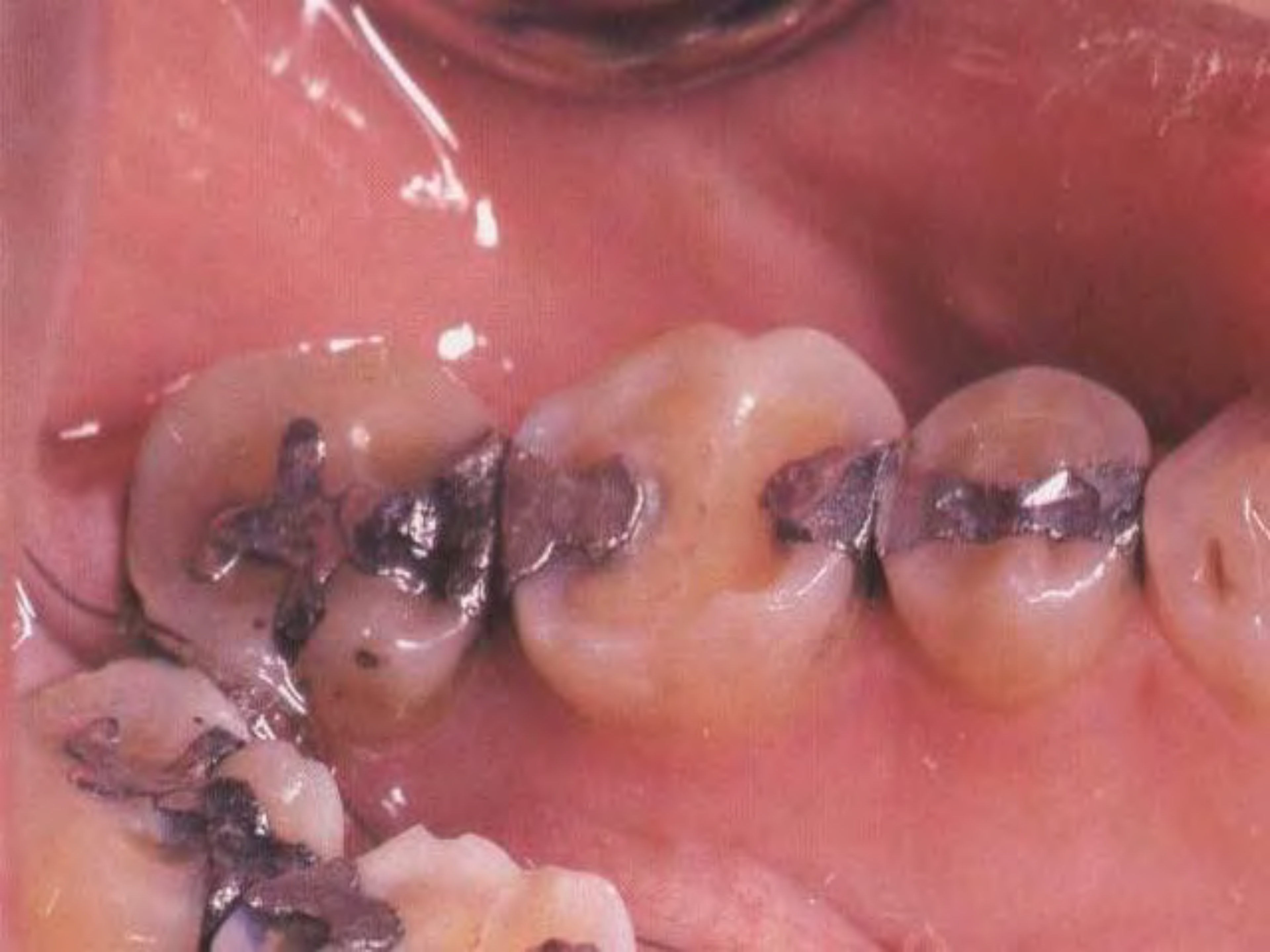
- Dental erosion (perimolysis) especially palatal surfaces of anterior/posterior teeth.



FYI…other causes of dental erosion…

- GERD
- Alcoholism
- Sjogren’s syndrome (autoimmune related)
- Occupational: e.g. pool maintenance; battery manufacturing
- Substance abuse: e.g. methamphetamines





Other causes of dental erosion in Eating Disorders

- ✓ Acidic sports drinks during physical activity
- ✓ Abnormal use of caffeinated/carbonated drinks used to boost energy levels or decrease reflex hunger stimulus.
- ✓ Use of vinegar/lemon slices to diminish hunger stimulus

Oral Manifestations of Eating Disorders

Changes to teeth:

- Dental caries –sweetened beverages, sweets, chewing gum – e.g. xs CHO consumption during binge eating episodes
- Dental sensitivity

EATING DISORDERS

Extra- 0ral Complications

Also an increase in parotid gland size in 10-60% of patients with bulimia = SIALADENOSIS

(sometimes the initial diagnostic clue of the illness) **[autonomic neuropathy]**

(Palatal minor salivary glands also affected)
- Journal of Oral Pathology, 2004.

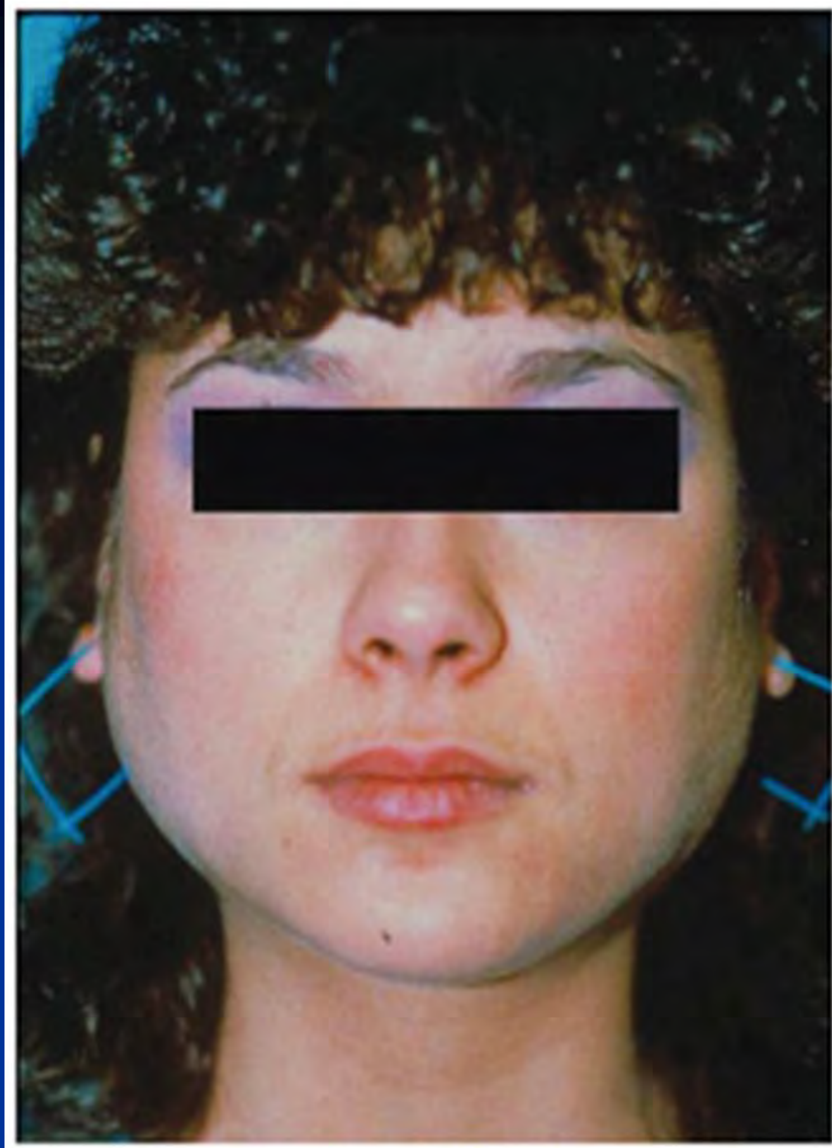


Figure 2. Bilateral parotid enlargement associated with bulimia nervosa. From: *Burke RC. Bulimia and parotid enlargement. Case report and treatment. J Otolaryngol. 1986;15:49-45.*

Other oral manifestations of Eating Disorders…

- Oral burning sensation
- Glossodynia
- Dysgeusia
- Osteopenia with subsequent osteoporosis(anorexia) – risk potential for MRONJ (e.g. bisphosphonate use)
- Reports of dissolution of cement/resins retaining orthodontic brackets

EATING DISORDERS
Oral Complications

Finding	Anorexia Nervosa	Bulimia Nervosa
Lingual erosion	no	yes
Tooth sensitivity	no	yes
Xerostomia	yes	yes
Dental caries	yes	yes
Perio. disease	no	yes
Enlarged parotid	no	yes(20-60%)
Mucosal atrophy,glossitis, palatal erythema	yes	no
Poor oral hygiene	no	yes

Objectives for Preventive Dental Treatment

1. Reduce frequency of acid exposure on teeth.

- achieving a reduction in the no. of episodes of vomiting towards eventual complete cessation.

2. Enhance salivary flow.(i.e.reduce the effects of dry mouth)

Objectives for Preventive Dental Treatment

3. Neutralize acids in the mouth.

- use of alkaline mouth rinse immediately after vomiting($NaHCO_3$), water, milk

4. Increase resistance of enamel to demineralization.

- daily fluoride rinse 0.5%
- fluoride gels (1.1%) in custom trays (x 5 min 0D)

Objectives for Preventive Dental Treatment

5. Minimize abrasive brushing techniques
   - soft brush, circular motion, floss
   - avoid brushing immediately after episodes of vomiting (x 1 hour)
6. Caries prevention
   - NaF varnishes
   - sealants?
   - snack substitutes
   - desensitizing agents

“Oral care behaviour after purging in a sample of women with bulimia nervosa.”

Journal of the American Dental Association 145(4) pp 352-354; 2014

201 of 330 patients in major ED Tx centres completed a survey

Mean age: 27.4 yrs

"Oral care behaviour after purging in a sample of women with bulimia nervosa."

92.4% 1 or > dental problems

- 69.1% sensitive teeth/gums
- 63.8% erosion of enamel
- 46.7% change of colour, shape, length of teeth
- 42.9% tooth pain
- 18.1% oral lesions
- 37.1% dental decay
- 32.9% dry mouth

“Oral care behaviour after purging in a sample of women with bulimia nervosa.”

Journal of the American Dental Association 145(4) pp 352-354; 2014

- Most participants(84%) rinsed after purging
- 33% brushed immediately after purging.****!!!!
- 30% felt OHP was most helpful source of information but 84% used the Internet.

“Oral care behaviour after purging in a sample of women with bulimia nervosa.”

Main findings from the study include:

Communication is key!!!

- Include info about ED & oral care on websites
- Display relevant material in waiting room

“Oral care behaviour after purging in a sample of women with bulimia nervosa.”

- Brief ED screening questionnaire on med hx form
- Encourage patient-initiated discussion/lessen negative emotions about ED

What about definitive dental treatment?

Such treatment is discouraged/delayed until a patient is medically and/or psychologically stable i.e. eating disorder is controlled –purging has ceased

What is Schizophrenia?

"Break with Reality"

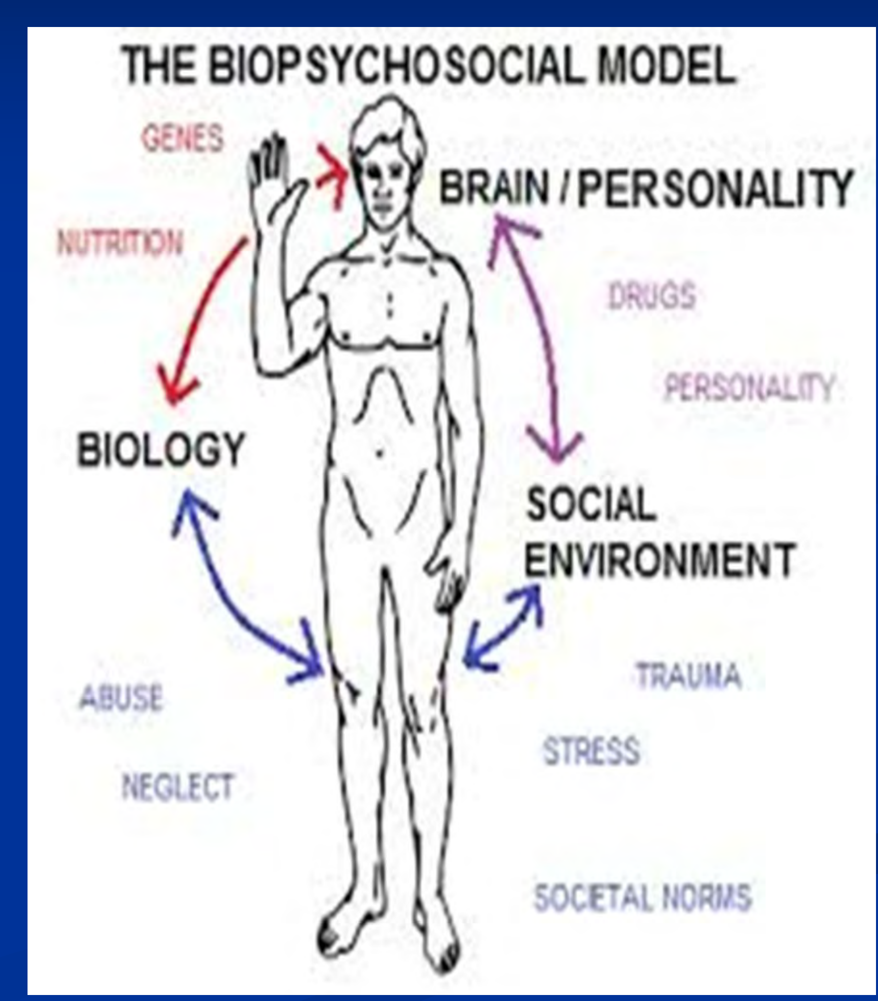
- commonest form of psychosis affecting mood, thought and behaviour = delusions, hallucinations.
- one of the most serious of all mental illnesses.
- no "cure"

Who gets Schizophrenia?

- ~1- 2% world population;
- Canada: 1% of pop. = >300,000 (~1 in 100)
- onset often late teens/early adulthood - gradual or sudden.(~75%)
- M(15-25) > F(25-35); M=F(adulthood)
- Schizophrenia(2006) – \$4.35B(Can) \$62B(US) – both direct & indirect costs

What is the cause of Schizophrenia?

- (genetics) altered expression of genes:10-15% with one parent; 30-40% - 2 parents
- differences in brain chemistry- (imbalances in neurotransmitters, e.g. dopamine, glutamate receptors)
- changes in brain structure?? (MRI,CT,PET)



SCHIZOPHRENIA signs and symptoms?

A diagnosis is further subcategorized according to the dominant presenting symptom: (active within at least the past month)

- positive (e.g. paranoia, “voices”)
- disorganized (e.g. catatonic)
- negative (e.g. withdrawal).

Positive Symptoms

Does not mean "good" but s/s that are present *but* shouldn't be there: best response to neuroleptic meds

- ✓ exaggeration of thought
- ✓ distortion of normal function, e.g. delusions (control of one's thoughts, actions) hallucinations (sensory: ***auditory-*** [patient hearing "voices"] visual, tactile)

Disorganized Symptoms

- ✓ rapid shift of ideas
- ✓ incoherent speech
- ✓ poor thought relation
- ✓ disorganized, bizarre behaviour e.g. stereotypical, imitation of others speech, gestures etc.

Negative Symptoms

The absences of behaviour that *should* be there.

- ✓ flat affect
- ✓ lack of motivation
- ✓ monotony of speech
- ✓ apathy
- ✓ social withdrawal
- ✓ ***absence of normal drives or interests such as those involving one's self care (general/oral).

SYMPTOM	MANIFESTATION
Positive - Hallucinations	**Auditory,** command type, tactile (electrical, tingling, burning sensation) somatic
Positive - Delusions	Persecutory type, reference type, thought broadcasting, thought insertion, thought withdrawal, being controlled by others
Negative - Disturbances of Affect	Absence of emotion, monotony of speech, cold and incongruous attitude, lack of expression
Negative - Impaired interpersonal relationships	Social withdrawal, emotional detachment
Disorganized - Psychomotor Disturbances	Grimacing, repetitive and awkward movements, rigidity, mutism, pacing
Disorganized - Thought Disturbances	Incoherent speech, rapid shift of ideas, poor relation of thoughts
Disorganized	Ritualistic, stereotypical behaviour
Negative = *Lack of self-care, motivation, initiative*	******Poor oral/general hygiene, dental caries, periodontal disease******

Issues around non-compliance

(50% within 30 days of discharge from hospital)

Therefore… will not seek treatment….will not take prescribed meds…will not comply with oral care.

Schizophrenia – a disease of neurocognitive impairments

- Poor “executive functioning”
- Trouble focusing or paying attention
- Problems with “working memory”

= poor quality of life; emotional stress

Pharmacological Treatment

Neuroleptics (antipsychotics)

Limbic system

SCHIZOPHRENIA

"Conventional" Antipsychotics (1950's)

chlorpromazine(Thorazine), methotrimeprazine (Nozinan), haloperidol(Haldol),

- Blocking of dopamine D2 receptors in the basal ganglia/mesolimbic system of the brain affecting mood & thought processes; e.g. were effective in managing **"positive" symptoms only….**
- **Major side effect: tardive dyskinesia (20%); acute dystonia(~2%)**

Motor related side effects(extra-pyramidal side- effects EPS)

- Parkinsonism – slow, stiffness of limbs, neck; rigid = falls risk!! (acute)
- Dystonia – spasm of axial muscles e.g. neck(acute)
- Akathisia – restlessness espec in legs(acute)
- Tardive dyskinesia – abnormal involuntary movement (chronic)

“Atypical” antipsychotics - 1980’s

Clozapine (Clozaril)

Risperidone (Risperdal)

Olanzapine (Zyprexa)

Quetiapine (Seroquel)

Ziprasidone** (Zeldox,Geodon)

Lurasidone (Latuda)

Asenapine (Saphris)

Atypical antipsychotics

- Less likely to cause movement disorders
- why? – these drugs possess a high ratio serotonin:D2 activity …therefore referred to as "serotonin-dopamine antagonists" vs. conventional antipsychotics or "dopamine antagonists."
- provide better management of both "positive", "negative" & "disorganized" symptoms.

CLOZAPINE

limiting factor for use:

AGRANULOCYTOSIS <3000 wbc/c.c.

-1-2% risk

-patients require routine blood work weekly or biweekly

- we need to know!

Possible Orofacial S/E to Antipsychotic Medications

Adverse Reaction	Risperidone	Quetiapine	Olanzapine
Xerostomia	Y	Y	Y
Dysphagia	N	N	N
Dysgeusia	Y	Y	N
Gingivitis	Y	Y	Y
Glossitis	N	Y	Y
Sialadenitis	N	N	N
Bruxism	N	Y	N
Stomatitis	Y	Y	Y
Other	Toothache, tongue paralysis	Oral ulceration	Candidiasis ,neck rigidity
Modified from Friedlander et al. JADA Vol 133 Sept			

Side-effects of antipsychotic medications – implications for dentistry??

- excessive sedation – lose interest in eating –weight loss common in elderly
- drug-induced EPS – decrease ability to feed oneself; affect choice of foods …
- oral dyskinesia – may reduce ability to chew/swallow properly
- esophageal dysmotility – choking behaviours
- judicious use of epinephrine(L.A.) – orthostatic hypotension
- potentiation of other sedative, hypnotic, narcotic agents
- bone marrow suppression(clozapine)
- neuroleptic malignant syndrome

Drug Interactions between Neuroleptics and…

- Coumadin – increase INR
- Tricyclic antidepressants – inc. TCA
- Antacids – reduce absorption from GI
- Smoking- reduce blood levels
- Alcohol –risk of respiratory depression/hypotension
- Anxiolytics – resp. depression/sedation
- Sympathomimetics(epinephrine) – inc risk of hypotension

Antipsychotic medications and…

- judicious use of epinephrine(L.A.) – orthostatic hypotension
- potentiation of other sedative, hypnotic, narcotic agents
- bone marrow suppression(clozapine)
- neuroleptic malignant syndrome

Clozapine: Paradoxical Oral Effect

Clozapine-induced hypersalivation

- 1/3 of cases, early in treatment, nighttime
- stigmatizing with inc. rates of non-compliance

Why?

- antagonist M3/agonist M4(muscarinic receptors) = hypersalivation
- impaired swallowing mechanism=pooling of saliva=hypersalivation

Dental Perspectives

Where do we need to start?

- Complete medical/drug history
- GP physician/psychiatrist consult(as needed)
- Capacity to consent to treatment

Schizophrenia: Oro-facial findings

Poor oral hygiene

Rampant dental decay

…both can in turn be a separate stigma producing influence against overall patient rehabilitation & recovery!...

Schizophrenia
Medication Side Effects

Tardive Dyskinesia: a side effect of longstanding use of antipsychotic medication - ~ 20% of patients; higher risk in elderly earlier on in tx.

Involuntary tongue movements = tongue thrusting/protrusions; lip smacking; puckering of lips; chewing movements; cheek puffing; repetitive movements of the extremities and trunk …… all having potential implications for providing dental care e.g. removable prosthetics

Schizophrenia: Oro-facial findings

Delusional thinking focusing on the oral cavity….

Delusional thinking…

- placement of transmitters into teeth
- oro-facial/self-mutilation –cheek biting, lip biting, tongue biting
- excoriation of gingiva
- burning of oral tissues e.g. cigarette

Patient Case: 23 yr. old male with schizophrenia

Schizophrenia …other oral findings

- higher prevalence of parafunction = severe tooth damage due to extensive attrition.
- ? CNS abnormalities and/or neuroleptic induced mechanisms.
- actual pain sensitivity thresholds higher in pats. with schizophrenia vs. healthy controls.
- delays in diagnosis and Tx. resulting in serious clinical consequences.

Oral Surg Oral Med Oral Pathol Jan.2007

Addictions

Methamphetamine
related oral damage include:

- ✓ ***it’s ability to cause dry mouth***
- ✓ drug-induced cravings for high-calorie carbonated drinks - inc. metabolism; physical activity
- ✓ inc. neuromuscular activity= parafunction =muscle trismus ,cusp fracture

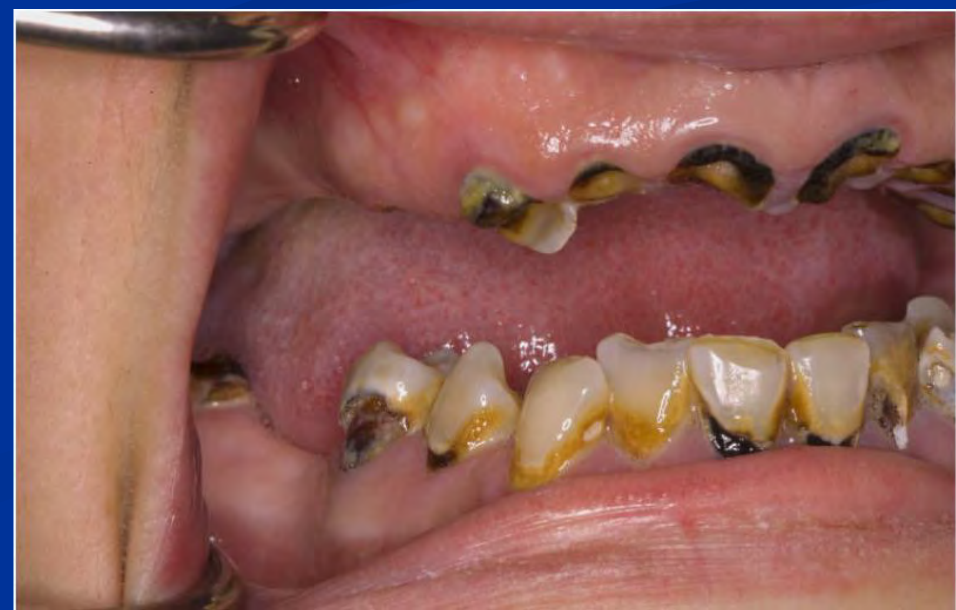
Addictions

- lengthy duration of drug effects (>12 hrs) = long periods of no oral hygiene
- acidic nature of methamphetamine (if drug taken orally)
- GI regurgitation/vomiting

Methamphetamines

Therefore.....methamphetamine use encourages an environment that **maximizes** caries risk:

1. decrease saliva
2. frequent exposure to sugars
3. poor oral hygiene
4. Methamphetamine “cut” with phosphoric acid = makes it acidic



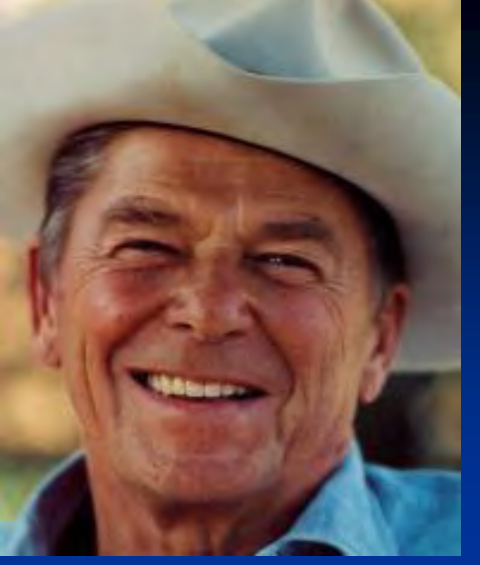
Alcohol abuse -Oral Complications-

- Xerostomia = caries
- Inc. bleeding tendency (liver disease)
- facial fractures (fights, falls)
- poor wound healing;
- risk of post-op infections.
- dental erosion
- glossitis, angular cheilitis, gingivitis, periodontitis; (nutritional deficiencies e.g. Vit B complex)
- sialadenosis (++ parotid gland)

What about NITROUS OXIDE?

- Should be used in caution in people on psychotropic medications due to potential for initiating a:
  - a) hypotensive reaction and
  - b) increased risk of hallucination in psychotic patients.
- Use of N20/O2 in recovered alcoholics and drug abusers could increase the risk of relapse.

DEMENTIA



Dementia is a clinical syndrome characterized by a progressive loss of cognitive and emotional abilities severe enough to interfere with daily functioning and the quality of life.

Highest risk for oral disease?
→ Cognitively impaired elderly

- **Forget to brush their teeth**
- **Decreased salivary flow**
- **Not comprehend what is a toothbrush, etc.?**
- **May resist assistance**
- **Have difficulty receiving or reporting pain**
- **Negative cycle…**

Potential Negative Cycle:

Oral Pain

Responsive Behaviours

Reduction in frequency and/or quality of oral care

Behavioural dental problems with Alzheimer's Disease

Early: forget dental appts / instructions

Late:

- Neglect oral health; method of care; need for OH
- Lost/broken dentures
- Increased caries/perio disease
- Halitosis
- Difficulty eating

Changes in behaviour indicative of oral pain…

- Refusal to eat (often hot/cold items)
- Pulling at face or mouth
- Leaving dentures out of mouth
- Increased restlessness, moaning, shouting
- Disturbed sleep
- Refusal to participate in activities
- 'Aggressive' behavior/self injurious

Parkinson's Disease

- Progressive neurodegenerative movement disorder – loss of dopamine producing neurons
- Average age of onset: >60 (5-10%<40)
- S/S: resting tremors –"pill-rolling"
  - drooling (xs ACTH; dec. dopamine)
  - bradykinesia
  - postural instability
  - cogwheel rigidity
  - dementia(later), cognitive decline

Parkinson's Disease

- ~ 50% of patients with Parkinson's disease develop psychotic symptoms; up to 90% - symptoms of depression during the illness
- Psychoses = hallucinations, delusions, delirium.
- >50% - irregular BP - orthostatic hypotension

Parkinson's Disease

Levodopa + Carbidopa (Sinemet) – frontline drugs of choice to increase dopamine levels in brain

Side-effects: hallucinations, depression, hypomania, delirium, cognitive impairment…

Parkinson's Disease: Dental Concerns

- Constant trembling/involuntary movements
- Reduced chair time due to fatigue
- Anxiety, mood disorders, compulsive
- Need for anxiety/stress reduction
- Impact of dyskinesias on reduced compliance for OH; caries;infections
- Importance of caregiver role/written instructions

Huntington’s Disease

- Fatal, genetic disorder: 1 in 10,000-20,000
- Autosomal dominant; M=F
- s/s in early 30’s – 40’s with life expectancy after diagnosis of 15-20 yrs.
- Progressive involuntary movements(jerky, rapid)/cognitive decline(dementia)
- Those affected often in denial; may continue to have children

Huntington’s Disease

Early: mood swings; irritable; depression; anger --- memory/judgement impaired; decision making

Late: difficulty swallowing, eating, speaking, walking….death

-Reduced GABA/Ach –pharmacotherapy aimed at increasing levels of these neurotransmitters

Personality disorders (PD)

Longstanding symptoms which reflect the person’s way of interacting with the world.

Must be an impairment in > 1 domain

(e.g. home and work)

“mad”……”bad”……”sad”

- “mad” – distrustful, unforgiving, withdrawn, prefers to be alone, eccentric
- “bad” – histrionic(dramatic, flirtatious), borderline PD, narcissistic(exaggerated self-importance), antisocial(disregard rules/regs-no remorse)
- “sad” – avoidant(hypersensitive to criticism= social discomfort),dependent(“clingy”),O-C PD(perfectionist)

What about Treatment Planning??

- Consult with GP/psychiatrist(as required) – ensure stability, control, capacity to consent.
- to maintain oral health, comfort, and function
- Be flexible & dynamic & realistic – compliance issues; financial constraints
- Positive attitude
- Aggressive on prevention- frequent use of auxiliary oral preventive agents
- Morning appts?

Communication guidelines – symptom behaviour

- Allow personal space – those who experience paranoia may often need more personal space
- Do NOT dispute the person’s reality or experiencing delusions/hallucinations
- Accept that this is what the person truly believes or perceives
- Encourage use of a quiet space
- Stay calm
- Be clear, practical, concrete
- Allow time for a response
- Ask one question at a time –be brief, repeat as needed
- Set limits on behaviour
- Be aware of threatening statements and take them seriously

So…in conclusion.. what can we do??

CLIENT, FAMILY,SOCIAL WORKER, FRIEND EDUCATION and REINFORCEMENT of DENTAL SELF-CARE – build awareness wherever AND whenever possible….

Assessing the Capacity to Consent

- An individual must be able to make & express a choice.
- An individual must display a factual understanding of his/her situation.
- An individual must not only know the facts but also appreciate their significance.
- An individual must come to a decision in some “sensible” or “rational” way.

- Early recognition, conversation, opportunity for referral and treatment of severe mental illness can improve both quality of life and health outcomes

- Severe mental illness is prevalent and **can** have a direct effect on one's behaviour, health, compliance with medical care and….ORAL HEALTH.

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