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UOR Extended
The Silent Signals: Recognizing Systemic Risk Through Health Histories

Watchpat $189
Your Tongue is Talking

PATHWAYS – INFLAMMATION IMMUNE MODULATION TRANSLOCATION
Inflammation & endothelial dysfunction: PD elevates systemic markers (CRP, IL-6, TNF-α), impairs NO bioavailability, linked to atherosclerotic risk
Bacteremia & endotoxemia: Toothbrushing, eating & procedures can cause transient bacteremia; >170 oral species been isolated from blood post-dental events
Microbiome dysbiosis → vascular effects: Circulating periodontal products activate TLR pathways & oxidative stress in vascular tissue.
Vesicle-mediated signaling: Periodontal pathogens release OMVs/EVs that cross barriers & amplify inflammation systemically

Hypertension
Dental action:
≥160/100 mm Hg (confirmed with repeat readings): defer elective care, document, and refer to primary care.
≥180/110 mm Hg: stop treatment and refer for urgent medical evaluation. Always confirm with multiple readings & document time, position, & cuff size

Recent Cardiac Events or Coronary Stents (≤6 months)
Red flag signal:
MI, unstable angina, coronary stent placement, or cardiac surgery within the past 6 months
Why it matters:
Heightened risk for ischemic events & thrombotic complications during stress, inflammation, or interruption of antiplatelet therapy
Dental action:
Defer elective invasive procedures when possible
Coordinate with cardiology for timing & risk stratification
DO NOT STOP antiplatelet therapy without explicit cardiology guidance
Red flag principle:
The danger is not the dentistry—it's the interruption of life-saving therapy

Diabetes Indicators

Red flag signal:

- Self-reported diabetes
- Poorly controlled periodontitis inconsistent with oral hygiene
- Symptoms: polyuria, polydipsia, recurrent infections, delayed healing

Why it matters:

Diabetes & PD have a bidirectional relationship. *Hyperglycemia* worsens periodontal inflammation; periodontal inflammation worsens glycemic control. Undiagnosed or poorly controlled diabetes often presents first in the dental chair

Dental action:

- Recommend medical evaluation or HbA1c testing when indicated
- Increase periodontal maintenance frequency
- Document findings & patient education

Red flag principle:

Inflammation that doesn't behave is often metabolic

Pregnancy-Related Risk Factors

Red flag signal:

- Active periodontal inflammation
- History of preterm birth
- Hypertensive disorders of pregnancy (gestational hypertension, preeclampsia)

Why it matters:

Periodontal inflammation contributes to systemic inflammatory burden during pregnancy - associated with adverse pregnancy outcomes, including preterm birth & hypertensive complications

Dental action:

- Prompt periodontal stabilization
- Coordinate care with OB provider
- Emphasize prevention, inflammation control, & maintenance

Red flag principle:

Pregnancy magnifies inflammation—it does not tolerate it

Obstructive Sleep Apnea (OSA) Risk

Red flag signal:

- Loud, chronic snoring
- Excessive daytime sleepiness
- Elevated neck circumference
- Scalloped tongue, retrognathia, narrow airway

Why it matters:

OSA is strongly associated with hypertension, AFIB, insulin resistance, cognitive decline, & CVD

Most patients remain undiagnosed

Dental action:

- Use validated screening tools (STOP-BANG, Epworth)
- Document airway findings
- Refer for sleep evaluation when indicated

Red flag principle:

Airway instability drives systemic disease long before diagnosis

A joint consensus report from the European Federation of Periodontology and World Heart Federation concludes that **periodontitis is independently associated with cardiovascular disease via systemic inflammation, endothelial dysfunction, and transient bacteremia**

Improved periodontal status lowers systemic CRP and oxidative stress markers, both known AFIB predictors

Atherosclerotic substrate

P. gingivalis may invade or inhabit atherosclerotic plaques, upregulate adhesion molecules, and amplify local inflammation. These mechanisms are associated with carotid disease and greater plaque vulnerability.

Systemic priming

Serology studies and cohort data suggest chronic periodontal exposure may add to thrombo-inflammatory risk beyond traditional cardiovascular risk factors. Persistent oral inflammation may contribute to systemic immune activation.

Actionable angle

Treating periodontal disease has been shown in multiple trials and meta-analyses to improve endothelial function (FMD) and reduce systemic inflammatory markers. This supports a favorable adjunctive role in cardiovascular prevention.

FMD
Higher FMD = better endothelial function
Lower FMD = endothelial dysfunction

Anticoagulant

Reduces clot formation by interfering with the clotting cascade, involving fibrin (produced from fibrinogen). They don't directly reduce fibrinogen levels; they prevent the *overactivity* of fibrinogen in forming clots

Antiplatelet agents

Inhibit platelet aggregation, working in concert with fibrinogen to stabilize blood clots. Reduces the pro-clotting activity associated with elevated fibrinogen

Antiplatelets: aspirin, clopidogrel (**Plavix**), prasugrel (Effient), ticagrelor (Brilinta)

Anticoagulants: Coumadin (warfarin), DOACs—**Eliquis**, **Xarelto**, Pradaxa, Savaysa—and LMWH (Lovenox)

2019 data - Medicare part D - 5 million people on an anticoagulant
Currently >8 million US adults

Tooth extraction:
• Bacteremia occurs in 30–100% of cases

• Higher incidence than routine care, but short-lived (<30 min)

Scaling

• Bacteremia reported in 36–88% of patients

• Peaks immediately post-procedure, rapidly declines

Tooth brushing:

• Bacteremia in 20–68% of episodes

• Occurs multiple x's/day, creating greater cumulative exposure

Chewing food:

• Bacteremia detected in 7–51%, especially with gingival inflammation

Orthostatic Hypotension

Drop in systolic ≥20 mm Hg or diastolic ≥10 mm Hg w/in 3 minutes of standing

Tricyclic antidepressants (TCAs) - amitriptyline, nortriptyline, & imipramine - *worst offenders*. Block alpha-1 adrenergic receptors—instead of vessels tightening, they chill out & pressure drops

Monoamine oxidase inhibitors (MAOIs) - phenelzine & tranylcypromine - effect on sympathetic tone

SSRIs and SNRIs (sertraline, fluoxetine, venlafaxine, duloxetine) milder but can blunt baroreceptor reflexes or cause mild volume depletion in older adults

Mirtazapine & Trazodone are sneaky—they act on serotonin but also antagonize alpha receptors - they can cause a slump when you stand up

High-Risk Offenders

(Strong α-adrenergic blockade or major autonomic effects)

Amitriptyline – classic TCA; textbook alpha-blocker.

Imipramine – similar profile; causes dizziness, blurred vision, and BP drops.

Nortriptyline – slightly "cleaner" but still risky in elders.

Clomipramine – potent serotonergic + anticholinergic; not friendly to the baroreflex.

Doxepin – sedation plus hypotension = nap time on the floor.

Trimipramine – same class, same vascular betrayal.

Maprotiline – tetracyclic cousin of TCAs; still antagonizes α1 receptors.

Phenelzine (Nardil) and Tranylcypromine (Parnate) – MAOIs; suppress sympathetic tone.

Trazodone – marketed as "sleep aid," doubles as postural BP saboteur via α1 blockade.

Nefazodone – similar to trazodone but with hepatic baggage.

Mirtazapine (Remeron) – sedative, appetite booster, and occasional hypotensive villain.

Moderate-Risk or Context-Dependent

(Mild effects or interaction-driven)

SSRIs:

Paroxetine – mild α1 antagonism, some anticholinergic effect.

Sertraline, citalopram, escitalopram, fluoxetine – generally safe but can lower BP slightly in frail or poly-medicated patients.

SNRIs:

Venlafaxine, duloxetine, desvenlafaxine – usually increase BP but can paradoxically cause orthostatic dips when dehydration, hyponatremia, or autonomic dysfunction coexist.

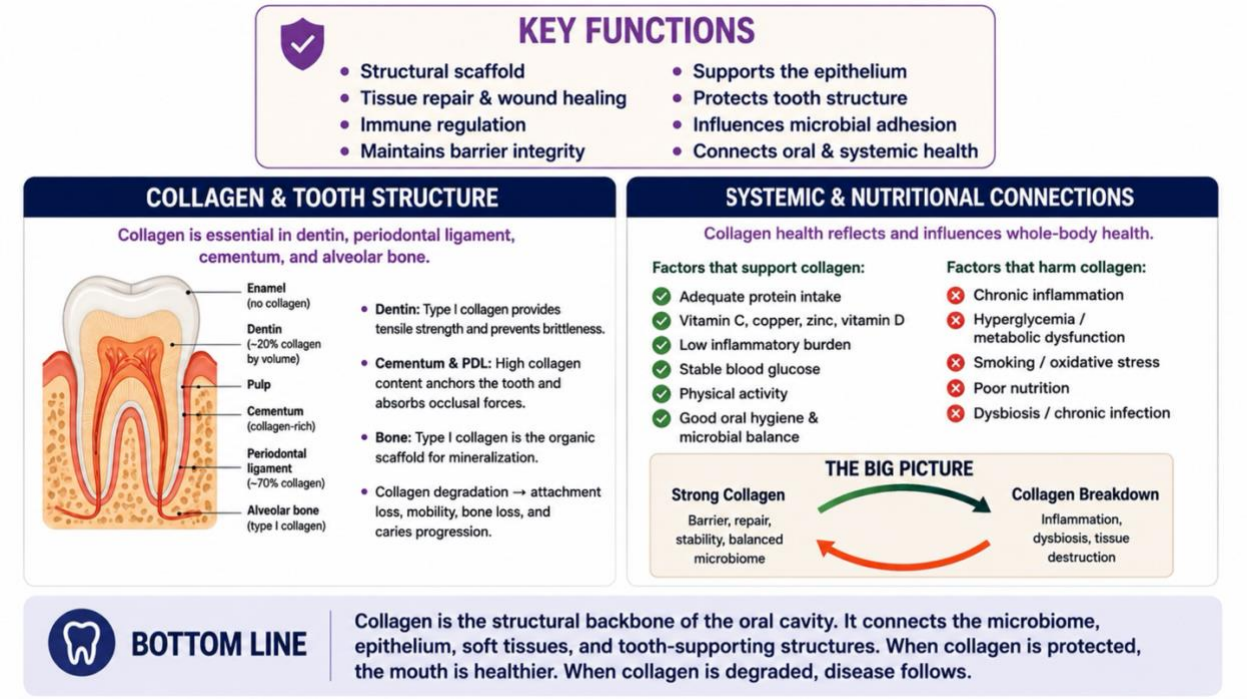
Agomelatine (Europe) – rare, but occasional orthostatic changes noted.

Vortioxetine – minimal

Prediabetes (~115M) + diabetes (~40M) (90-95% T2D) = a massive, largely undiagnosed metabolic burden
8 in 10 with prediabetes don't know it!

Metabolic Syndrome 3 of 5
Abdominal (central) obesity
Waist ≥ 40 in./men ≥ 35 in./women
Cholesterol
Triglycerides ≥150 mg/dL or on drug treatment for elevated triglycerides
Low HDL cholesterol <40 mg/dL- men <50 mg/dL – women
or on drug treatment for low HDL
Elevated blood pressure
≥130/85 mm Hg or on antihypertensive medication
Elevated fasting glucose
≥100 mg/dL or on drug treatment for hyperglycemia

Hyperthyroidism increases bone turnover, allowing osteoclastic resorption to outpace repair, contributing to accelerated alveolar bone loss
Hypothyroidism slows bone and connective tissue remodeling - delayed healing & impaired tissue repair
Autoimmune thyroid disease sustains systemic inflammation, increasing susceptibility to periodontal tissue breakdown
Thyroid dysfunction alters fibroblast activity & collagen metabolism, weakening gingival connective tissue



Osteoporosis weakens alveolar bone through altered remodeling & inflammatory signaling, increasing vulnerability to bone loss & impaired healing

Parkinson's signs

Reduced arm swing (often unilateral)
- One of the earliest signs

Slower walking speed
- Not obvious to patient, others may notice moving slower

Shortened stride length
- Steps become slightly shorter, can *precede* the classic "shuffling gait"

Increased gait variability
- Less consistent step timing, subtle instability

Decreased trunk rotation
- More rigid, "en bloc" movement, less natural fluidity when walking

Subtle balance impairment
- Not falling—but:
  - Hesitation turning
  - Slight unsteadiness

Early festination (very subtle)
- Slight tendency to **speed up with shorter steps**

Parkinson Meds

Dopamine Replacement (The "Gold Standard")

Levodopa/Carbidopa: Sinemet, Rytary (extended-release), Dhivy, and Duopa (intestinal gel)

Newer versions (as of 2024–2026): Crexont (long-acting pill) & Vyalev (a continuous under-the-skin infusion approved in late 2024 to reduce the "highs and lows" that cause grinding)

Dopamine Agonists - trick the brain into thinking it has more dopamine. They are often used in younger patients but can still trigger jaw restlessness

Pramipexole (Mirapex), Ropinirole (Requip), Rotigotine (Neupro patch), Apomorphine (Apokyn or Kynmobi)—usually used for "rescue" when other meds wear off.

COMT Inhibitors

These don't contain dopamine themselves; they "block the blocker" to make your Levodopa last longer

Entacapone (Comtan), Opicapone (Ongentys), Tolcapone (Tasmar), Stalevo (a "3-in-1" pill containing Levodopa, Carbidopa, and Entacapone)

MAO-B Inhibitors

These prevent the breakdown of dopamine in the brain. They are generally "gentler" but can contribute to overall mouth movements if combined with high-dose Levodopa

Selegiline (Eldepryl, Zelapar), Rasagiline (Azilect), Safinamide (Xadago)

Anticholinergics

Treat tremors – dry mouth

Trihexyphenidyl (Artane), Benztropine (Cogentin)

Levodopa | Sinemet, Rytary | **Causes rhythmic grinding** (dyskinesia)
Agonists | Mirapex, Requip | **Can cause jaw restlessness**
Anticholinergics| Artane | **Causes severe dry mouth**
Amantadine | Gocovri | Often **reduces** grinding/dyskinesia

Alzheimer's Medications

Cholinesterase Inhibitors
Donepezil (Aricept), Rivastigmine (Exelon), Galantamine (Razadyne)
What they do
Increase acetylcholine → improve cognition and memory (temporarily)
Oral effects
↑ Salivation (sometimes excessive), Drooling (especially later stages)
Nausea → may affect oral intake, Possible bruxism (less common)

NMDA Receptor Antagonist
Memantine (Namenda)
What it does
Regulates glutamate → protects neurons from excitotoxicity
Oral effects
Xerostomia (dry mouth)
Dysgeusia (taste changes)
Occasional stomatitis

Newer Anti-Amyloid Therapies (infusion)
Lecanemab, Aducanumab
What they do
Target amyloid plaques → slow disease progression (selected patients)
Minimal Oral effects

OSA
Sleepdoctor.com Watchpat $189

Connection: OSA + periodontal disease = amplified systemic inflammation & vascular dysfunction
Oral Indicators: Bruxism, scalloped tongue, enlarged tonsils, narrow palate, high Mallampati score, retrognathia, mouth breathing
Remember: Hypoxia + inflammation + dysbiosis → increased cardiometabolic & stroke risk

UARS Upper Airway Resistance Syndrome Arousals w/out frank apnea still trigger chronic sympathetic activation, fatigue, pain sensitization, & inflammatory signaling

OFTEN misclassified as having anxiety, insomnia, or "normal" sleep studies

Asthma
Dental Considerations: Rinse after inhaler use; fluoride support; avoid triggering bronchospasm during care (stress, anxiety, aerosols, irritants, chemical, supine position, cold dry air)

Aspiration Pneumonia
What's being aspirated:
Saliva laden with oral bacteria
Dental plaque fragments
Pathogens & biofilm enzymes
High-risk populations
Older adults
Stroke & TIA survivors
Parkinson's disease & dementia
COPD
Sedated or hospitalized
Long-term care residents
Oral contributors
Poor plaque control
PD
Denture biofilm
Reduced salivary flow
Dysphagia & impaired cough reflex

O2
Excess O2 can worsen CO_2 retention = risk of respiratory acidosis & altered consciousness
Do NOT adjust their O2 flow—leave it as prescribed

GI
Medications
- Corticosteroids (prednisone, budesonide)
- Immunomodulators (azathioprine, methotrexate)
- Biologics (infliximab, adalimumab, vedolizumab)
- JAK inhibitors (tofacitinib)

Risks
- Infection
- Delayed healing
- Candidiasis

Bleeding
Anemia & platelet issues

A 2024 salivary biomarker study showed patients with serologically confirmed celiac disease on a gluten-free diet showed significantly *lower periodontal parameter values compared with controls*

Anticoagulants / Antiplatelets
Warfarin (Coumadin) — anticoagulant → bleeding risk (INR dependent)

Apixaban (Eliquis), Rivaroxaban (Xarelto), Dabigatran (Pradaxa), Edoxaban (Savaysa) — DOACs → bleeding risk
Clopidogrel (Plavix), Prasugrel (Effient), Ticagrelor (Brilinta) — antiplatelets → prolonged bleeding

Antiresorptives / Bone-modifying agents
Alendronate (Fosamax), Risedronate (Actonel) — osteoporosis → MRONJ risk (lower, oral)
Zoledronic acid (Zometa/Reclast) — cancer/osteoporosis → high MRONJ risk (IV)
Denosumab (Prolia, Xgeva) — RANKL inhibitor → MRONJ risk

Oral Bisphosphonates:
Alendronate (Fosamax)
Risedronate (Actonel, Atelvia)
Ibandronate (Boniva) — oral monthly option
Etidronate (older, less common)
Tiludronate (rarely encountered)
IV / Injectable Bisphosphonates
Zoledronic acid (Reclast for osteoporosis, Zometa oncology dosing)*
Ibandronate (Boniva IV form)
Pamidronate (Aredia)*
Clodronate (more common outside U.S. in some settings)
* higher risk MRONJ
Bisphosphonates (used for osteoporosis, Paget disease, metastatic bone disease, hypercalcemia

Immunosuppressants / Biologics
Prednisone — corticosteroid → infection risk, delayed healing
Methotrexate — DMARD → immunosuppression, mucositis
Adalimumab (Humira), Infliximab (Remicade), Etanercept (Enbrel) — anti-TNF → infection risk
Secukinumab (Cosentyx) — IL-17 inhibitor → infection risk (esp. fungal)

Cancer therapies
Cisplatin, 5-FU, Doxorubicin (chemo agents) — cancer → mucositis, immunosuppression
Pembrolizumab (Keytruda), Nivolumab (Opdivo) — immunotherapy → immune-related oral reactions
Radiation (head/neck) — cancer → xerostomia, ORN risk

Antihypertensives
Amlodipine, Nifedipine (CCBs) — hypertension → gingival overgrowth
Lisinopril (ACE inhibitor) — hypertension → angioedema risk
Beta-blockers (Propranolol) — hypertension → interaction w/ epinephrine

Diabetes medications
Insulin — diabetes → hypoglycemia risk
Metformin — diabetes → generally safe, watch GI
SGLT2 inhibitors (Jardiance, Farxiga) → dehydration, infection risk (mild)

Respiratory medications
Albuterol — bronchodilator → xerostomia
Inhaled steroids (Fluticasone) — asthma/COPD → oral candidiasis
Anticholinergics (Ipratropium, Tiotropium) → severe dry mouth

Psych / CNS medications
SSRIs (Sertraline, Fluoxetine) — depression → xerostomia, bleeding (platelet effect)
TCAs (Amitriptyline) — depression → severe xerostomia
Benzodiazepines (Diazepam, Alprazolam) — anxiety → sedation, respiratory depression

Bisphosphonate-adjacent / chemo bone drugs
Bevacizumab (Avastin) — anti-angiogenic → impaired healing, MRONJ-like risk
Common Oncology Uses: colorectal cancer, lung cancer (non-squamous NSCLC), glioblastoma, ovarian cancer, cervical cancer, renal cell cancer (some settings/combinations), liver cancer historically
Blocks VEGF (vascular endothelial growth factor). VEGF normally helps maintain endothelial health & NO signaling = raises BP

Hormonal / endocrine
Hypothyroidism
- Levothyroxine (Synthroid) Liothyronine (Cytomel)→ generally safe
- Estrogen / HRT → gingival inflammation (mild)
- Propranolol — (controls tachycardia, tremor, palpitations)

Hyperthyroidism
- Methimazole
- Radioactive iodine, surgery

Around 6–8% of the U.S. population may be taking thyroid hormone medication

Antibiotics (chronic use)
Doxycycline (long-term) — perio/acne → photosensitivity, resistance concerns
Frequent antibiotic history → oral dysbiosis, candidiasis

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