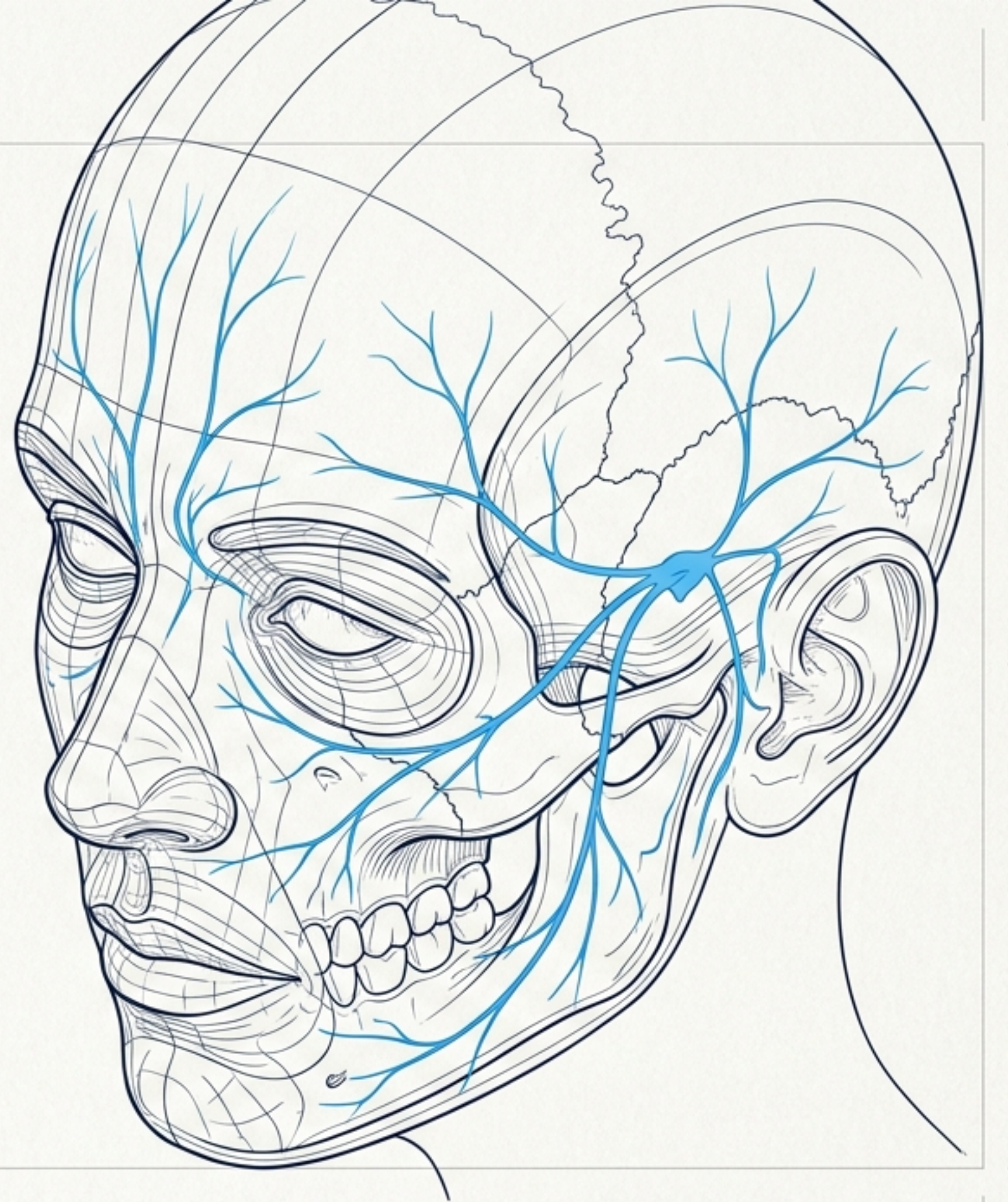
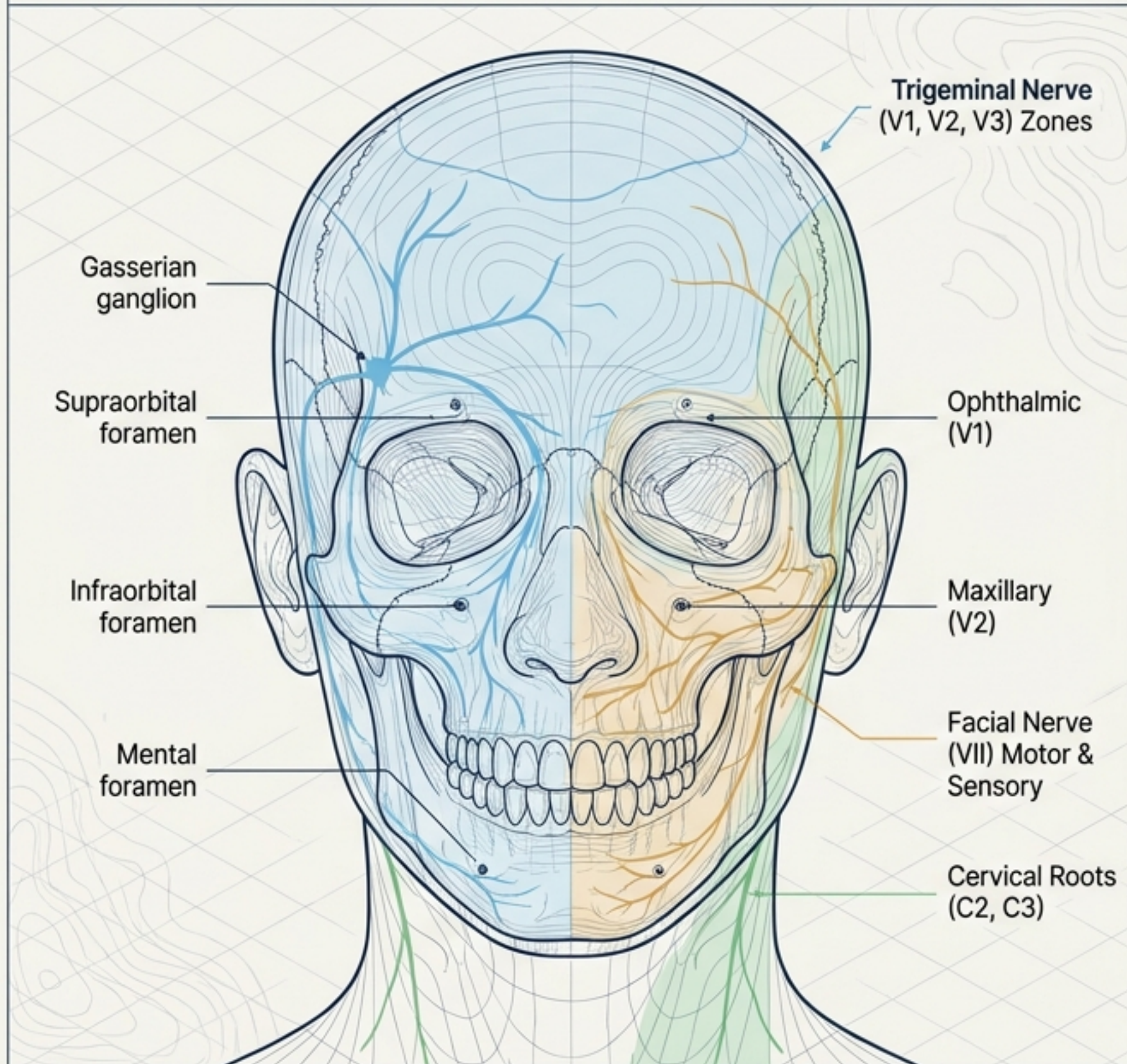


Decoding Facial Pain

A Clinical Blueprint
for Triage and
Treatment



Neuro-Anatomic Complexity & Epidemiology



5-7%

Prevalence of orofacial pain in the Australian adult population at any given time.

12.6

Per 100,000 incidence of Trigeminal Neuralgia per year (higher in women and >50s).

2.5x

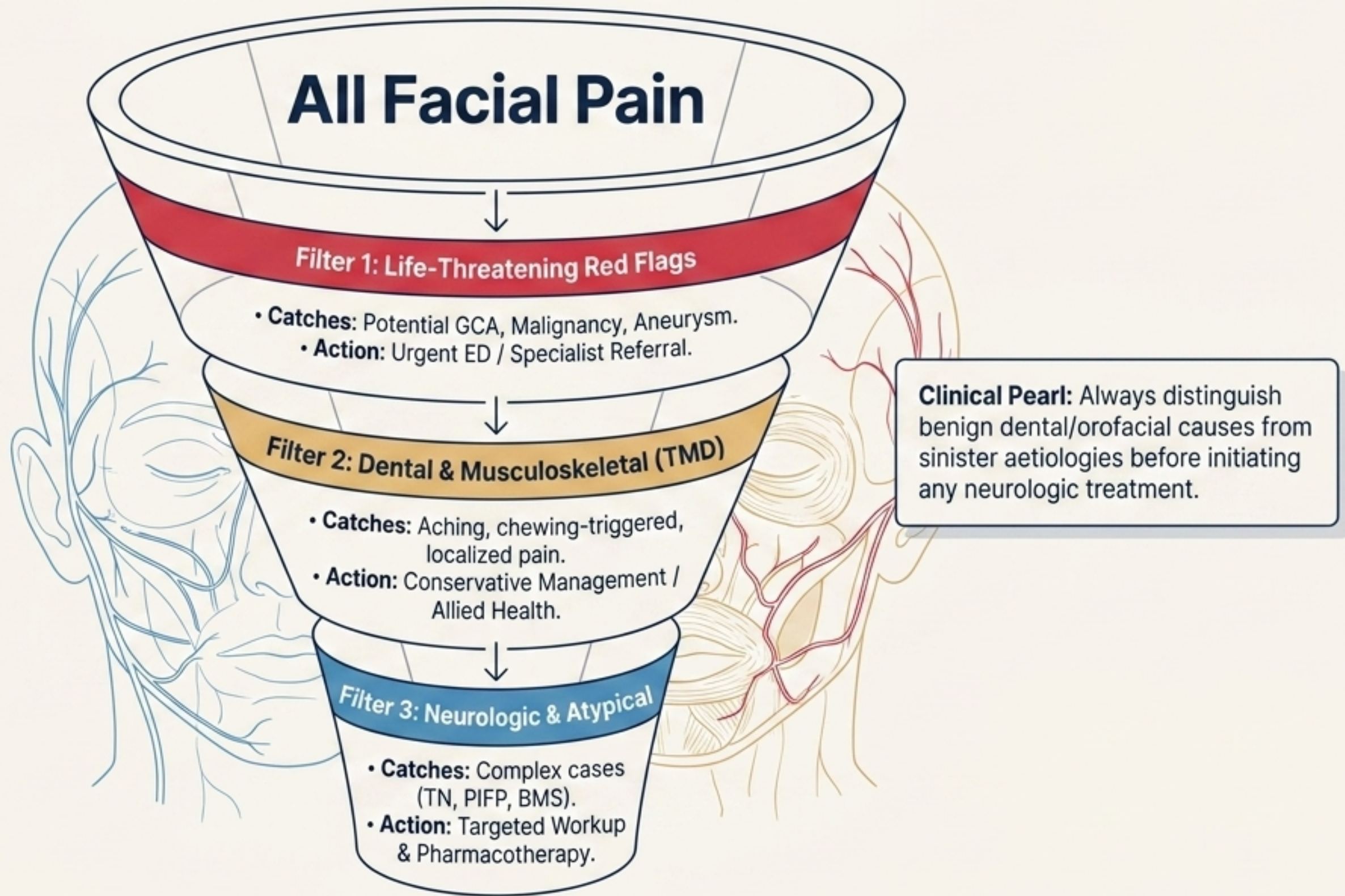
Higher rate of reported toothache in Aboriginal and Torres Strait Islander populations.

10%

Proportion of neurology clinic facial pain presentations classified as persistent idiopathic facial pain.

Insight: The face is the most densely innervated region of the body. This neuroanatomic complexity creates a massive differential diagnosis and high potential for referred pain.

The Diagnostic Funnel



Filter 1: The Red Flag Dashboard



Giant Cell Arteritis (GCA)

Age >50, new temporal headache, jaw claudication, visual symptoms, ESR >50 mm/hr.

Action: Do not wait for biopsy. Immediate high-dose prednisolone.



Malignancy / Mass Lesion

Unilateral facial numbness (V2/V3), proptosis, unexplained cranial nerve palsies, non-healing oral ulcer >3 weeks.



Cavernous Sinus Pathology

Multiple cranial nerve palsies (III, IV, V1, V2, VI), chemosis.

Action: Urgent MRI.



Acute Herpes Zoster Ophthalmicus

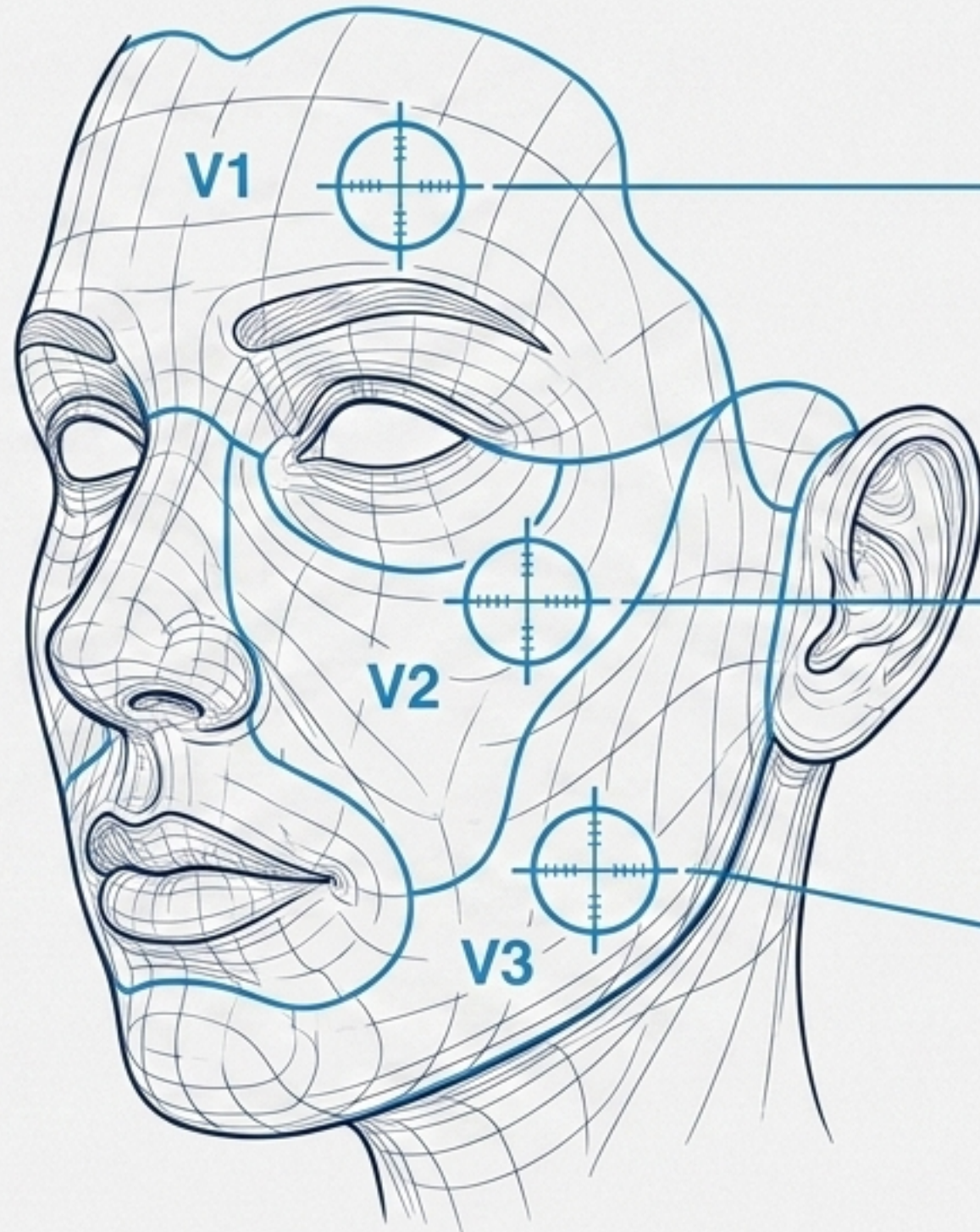
Prodromal pain, vesicular eruption in V1 distribution.

Action: Urgent ophthalmology referral (keratitis risk).

The Root Cause Matrix

Dental / Odontogenic	Neurologic (e.g., TN)	Musculoskeletal (TMD)
<ul style="list-style-type: none">● Character: Dull, aching, throbbing.● Location: Localized to specific tooth.● Triggers: Hot/cold, sweet, biting.● Duration: Minutes to hours.● Signs: Swelling, caries, resolves with dental block.	<ul style="list-style-type: none">● Character: Electric, shooting, lancinating.● Location: Dermatomal distribution (V1-V3).● Triggers: Light touch, wind, eating.● Duration: Lasts seconds.● Signs: Associated with sensory loss or trigger zones.	<ul style="list-style-type: none">● Character: Dull, aching.● Location: Pre-auricular, masseter, temporal.● Triggers: Worse with jaw use, chewing, yawning.● Duration: Lasts hours, worsens throughout day.● Signs: TMJ click/crepitus, limited opening.

The Trigeminal Target Map



V1 (Ophthalmic)

Primary target for Post-Herpetic Neuralgia and Cavernous Sinus Pathology.

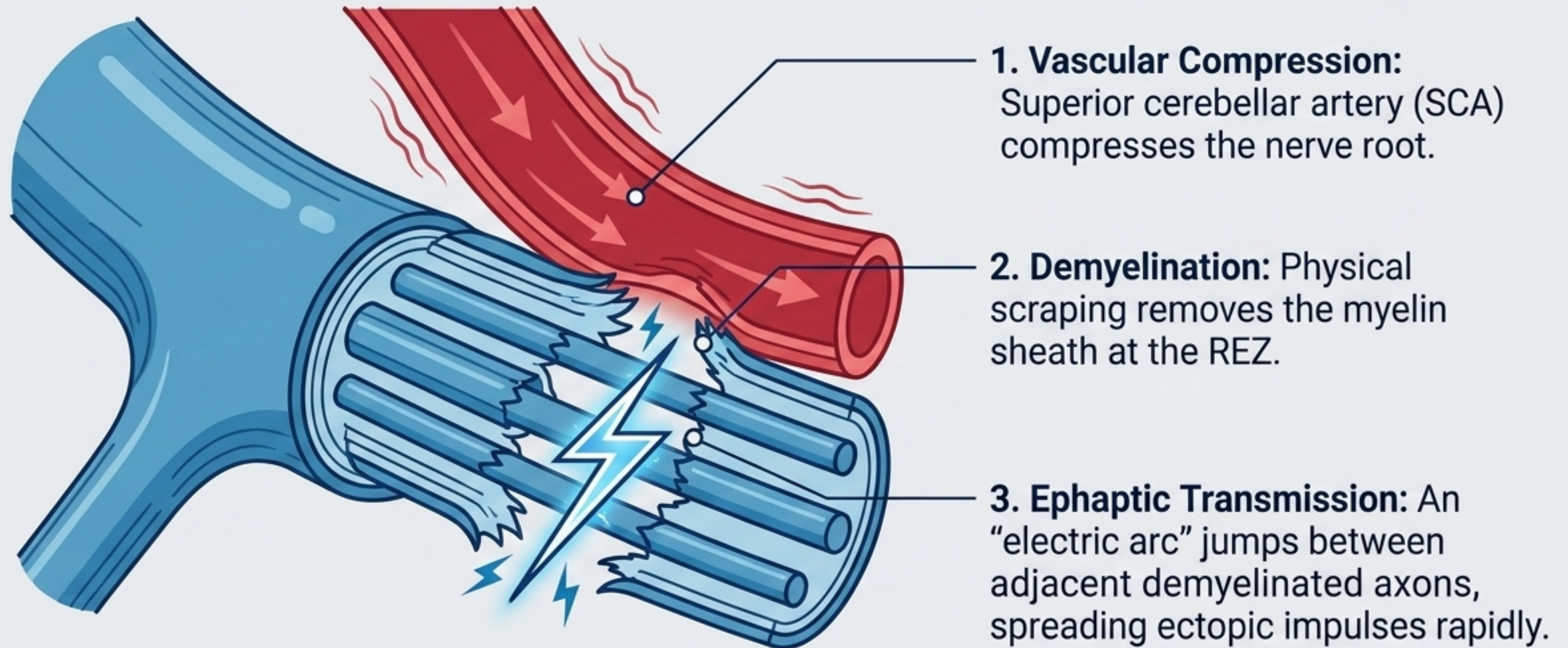
V2 (Maxillary)

Common target for Classical Trigeminal Neuralgia and Malignancy (causing numbness).

V3 (Mandibular)

Common target for Trigeminal Neuralgia. Note: V3 includes the motor root (testing jaw opening/closing against resistance).

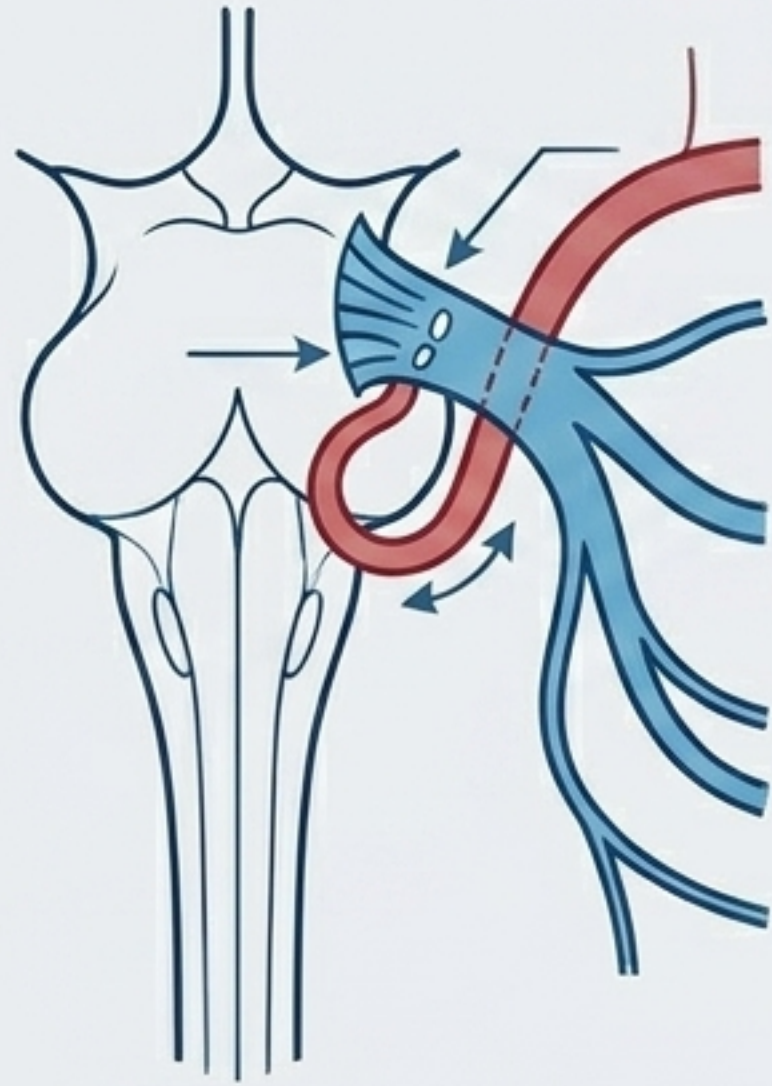
The Short Circuit: Trigeminal Neuralgia Pathophysiology



Mechanism: Explains why an innocuous stimulus (e.g., light breeze) triggers a severe, paroxysmal electric-shock response. Central sensitisation eventually causes background aching.

Diagnostic Dichotomy: Trigeminal Neuralgia

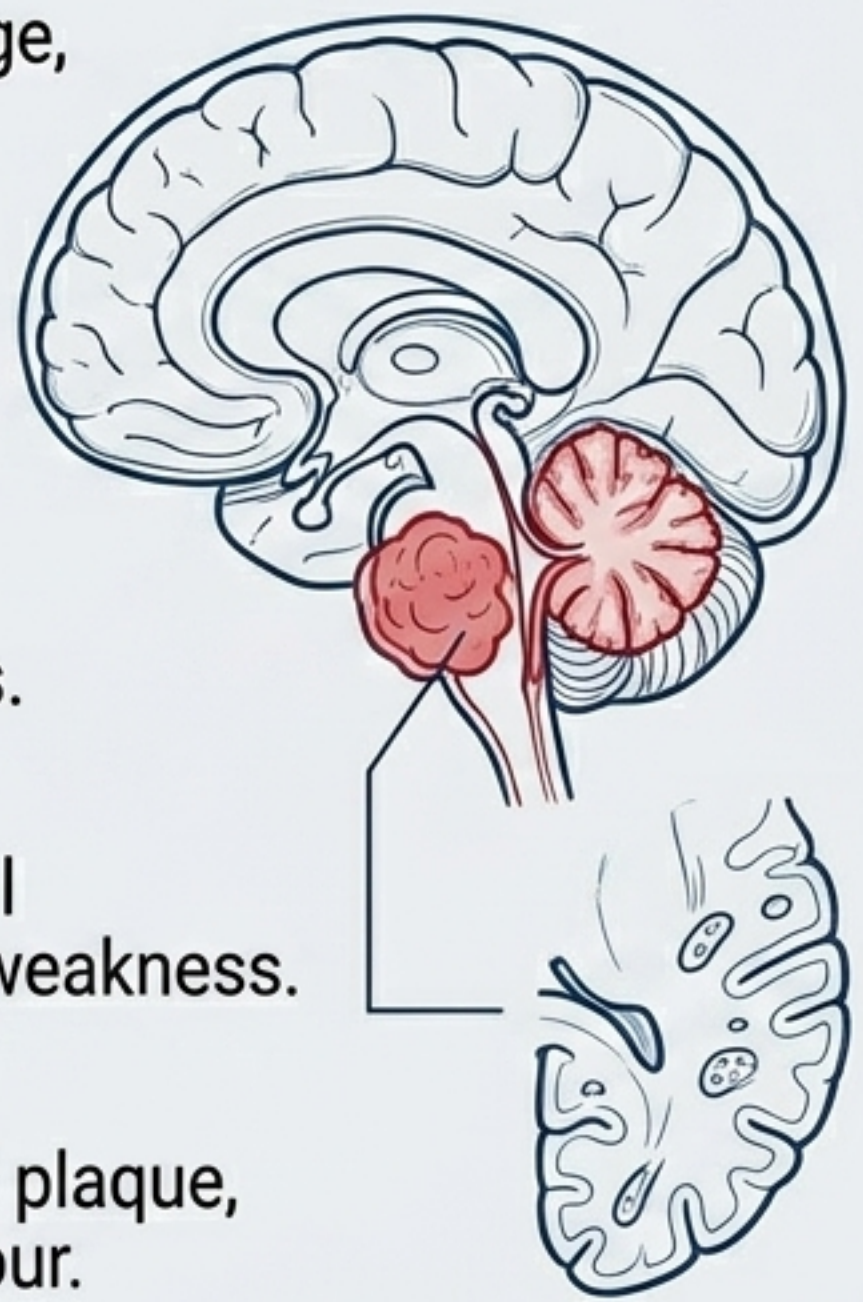
Classical TN



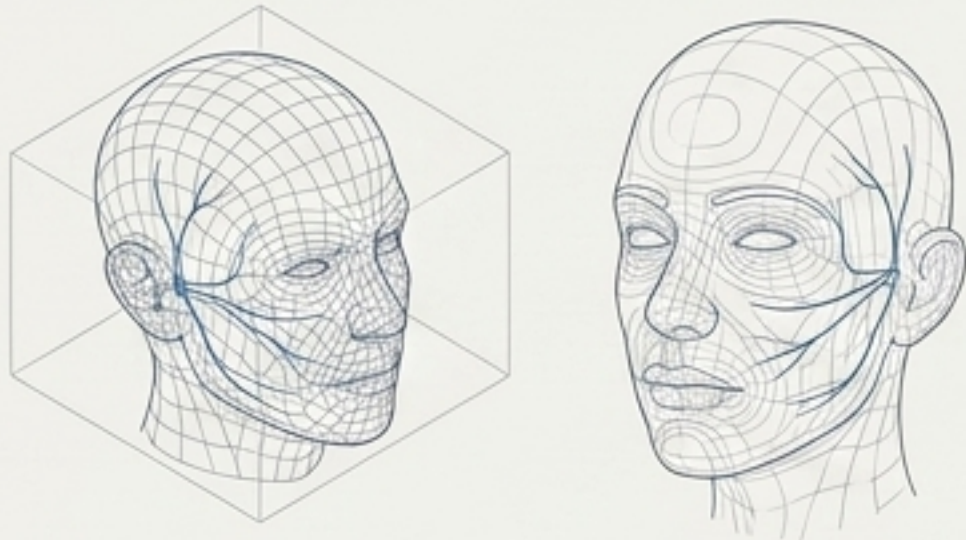
- **Age of Onset:** Typically >50 years.
- **Laterality:** Almost always unilateral.
- **Triggers:** Well-defined trigger zones.
- **Neurologic Signs:** Usually normal exam.
- **MRI Findings:** Neurovascular contact at REZ.

Secondary / Symptomatic TN

- **Age of Onset:** Any age, often younger.
- **Laterality:** Bilateral more common, especially in MS.
- **Triggers:** Less consistent, may be spontaneous.
- **Neurologic Signs:** Sensory loss, corneal hyporeflexia, motor weakness.
- **MRI Findings:** Structural lesion, MS plaque, posterior fossa tumour.



Treatment Staircase: Trigeminal Neuralgia



Step 1: First-Line Agents

Carbamazepine (200–1200 mg/day)
or Oxcarbazepine (300–1200 mg/day).

Note: Monitor FBE, LFTs, UEC, and Sodium.

Warning: HLA-B*1502 Screening.

TGA mandates testing before CBZ/OXC initiation in patients of Southeast Asian, Han Chinese, or Indian ancestry due to severe SJS/TEN risk.

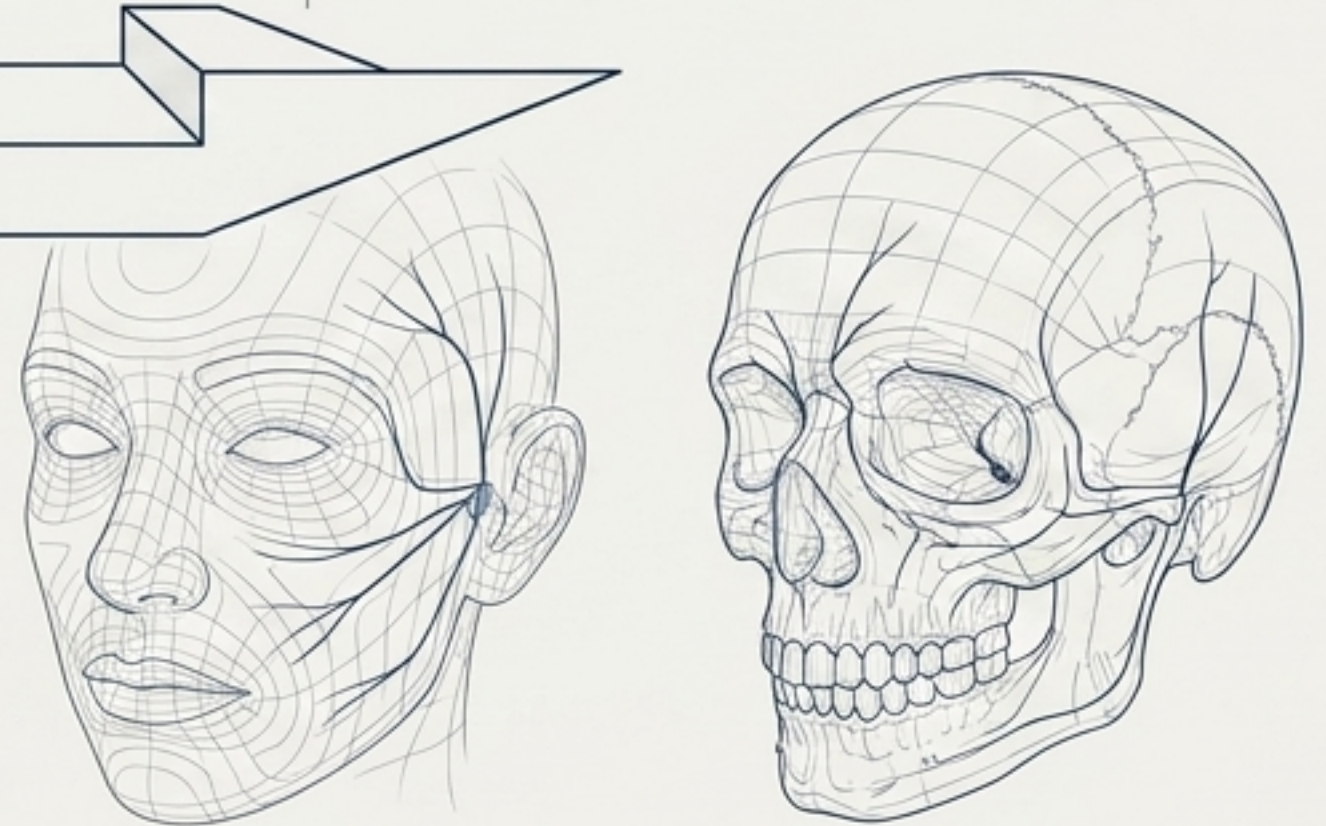
Step 2: Second-Line / Adjuncts

Lamotrigine (Titrate slow to 200–400 mg/day) or Baclofen (40–80 mg/day).

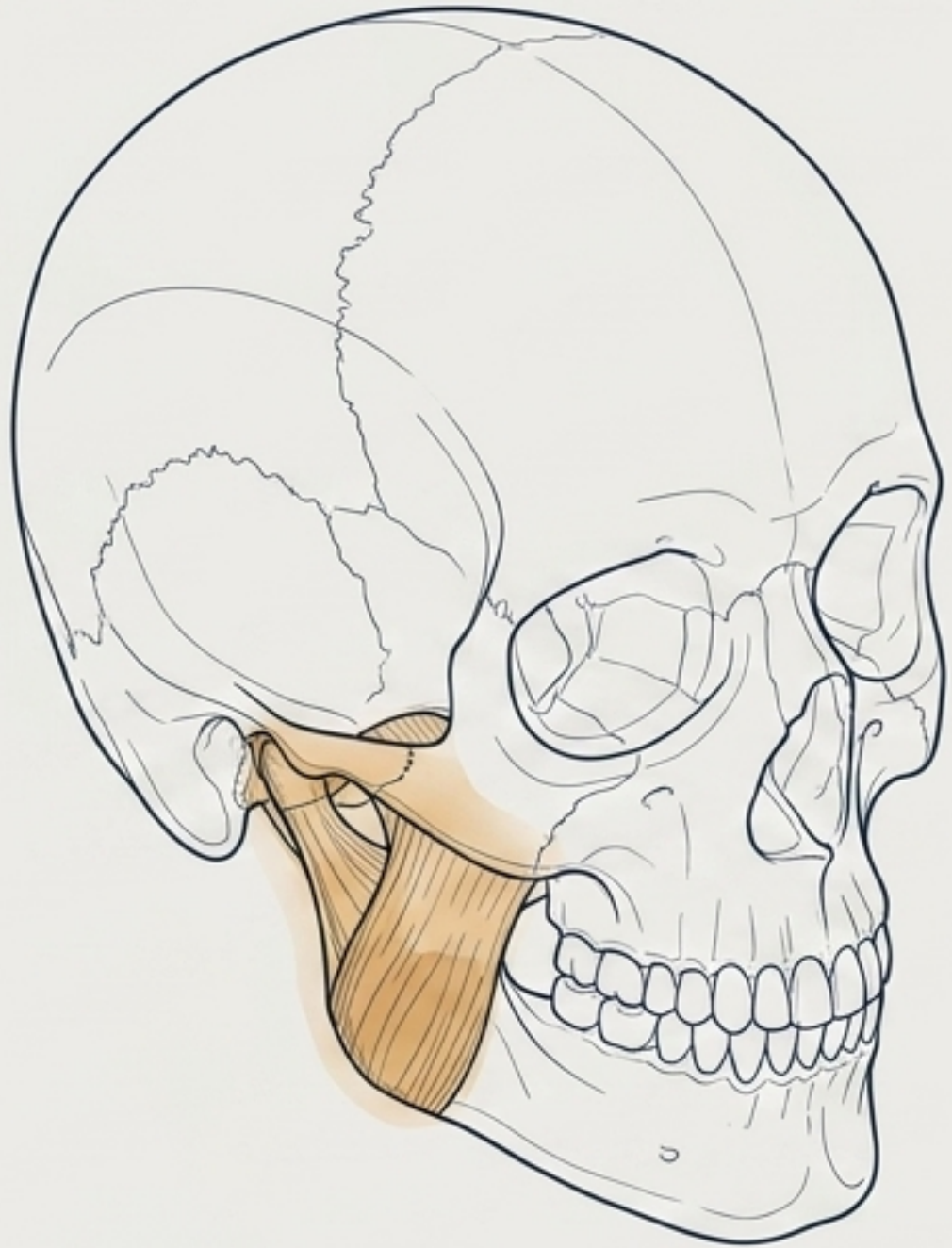
Step 3: Neurosurgical Intervention

Microvascular Decompression (MVD) offers best long-term outcomes (70-90% pain-free at 1 yr). Alternatives:

Percutaneous procedures,
Gamma Knife.



Temporomandibular Disorders (TMD)



Classification

- Group I: Myofascial pain (45% of cases).
- Group II: Disc displacement (clicking/locking).
- Group III: Arthralgia/osteoarthritis.

Conservative Management Core

- Patient education: soft diet, avoid yawning, warm compresses.
- Occlusal splint therapy (fitted by dentist).
- Physiotherapy: jaw exercises, dry needling.
- Short-course NSAIDs (Ibuprofen 400mg TDS for 7-14 days).

The Temporal Differentiation of Pain



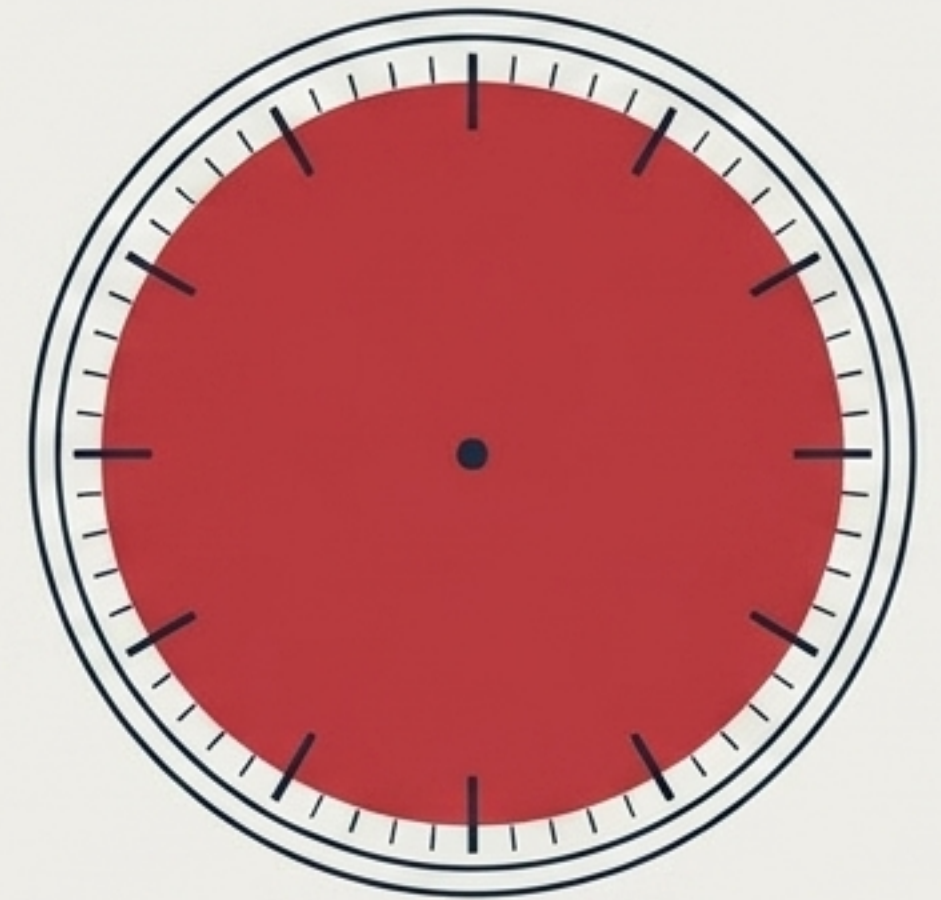
Duration: Fractions of a second to 2 minutes.

Diagnosis: Trigeminal Neuralgia.



Duration: Hours, worsening through the day.

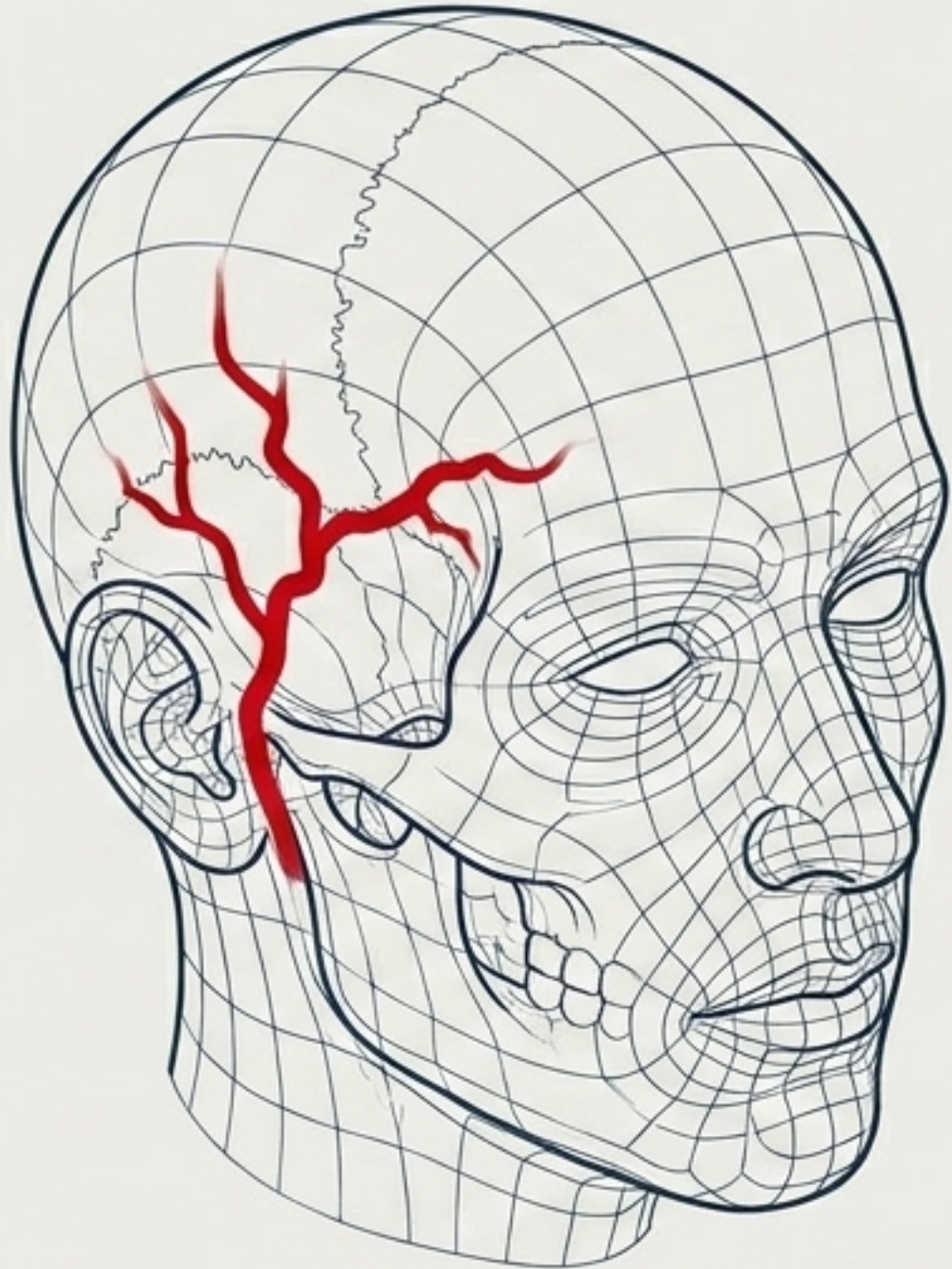
Diagnosis: TMD / Burning Mouth Syndrome.



Duration: >2 hours/day for >3 months (Constant/Near-constant).

Diagnosis: Persistent Idiopathic Facial Pain (PIFP).

Giant Cell Arteritis (GCA)



Diagnosis (ACR 1990 Criteria - ≥ 3 of 5)

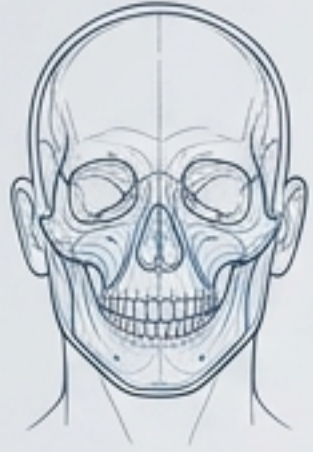
- Age ≥ 50 years.
- New-onset/new-type headache.
- Temporal artery tenderness / reduced pulse.
- ESR ≥ 50 mm/hr.
- Abnormal temporal artery biopsy.

Note: Jaw claudication is highly specific but not in ACR criteria.

Emergency Protocol

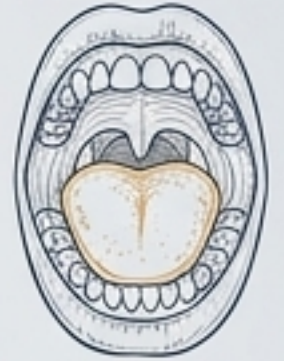
- Initiate High-Dose Prednisolone (50–100 mg PO) **IMMEDIATELY.**
- Do **NOT** wait for biopsy confirmation.
- If visual symptoms present: IV Methylprednisolone (500mg–1g) to prevent irreversible blindness.

The Atypical Spectrum Matrix



Persistent Idiopathic Facial Pain (PIFP)

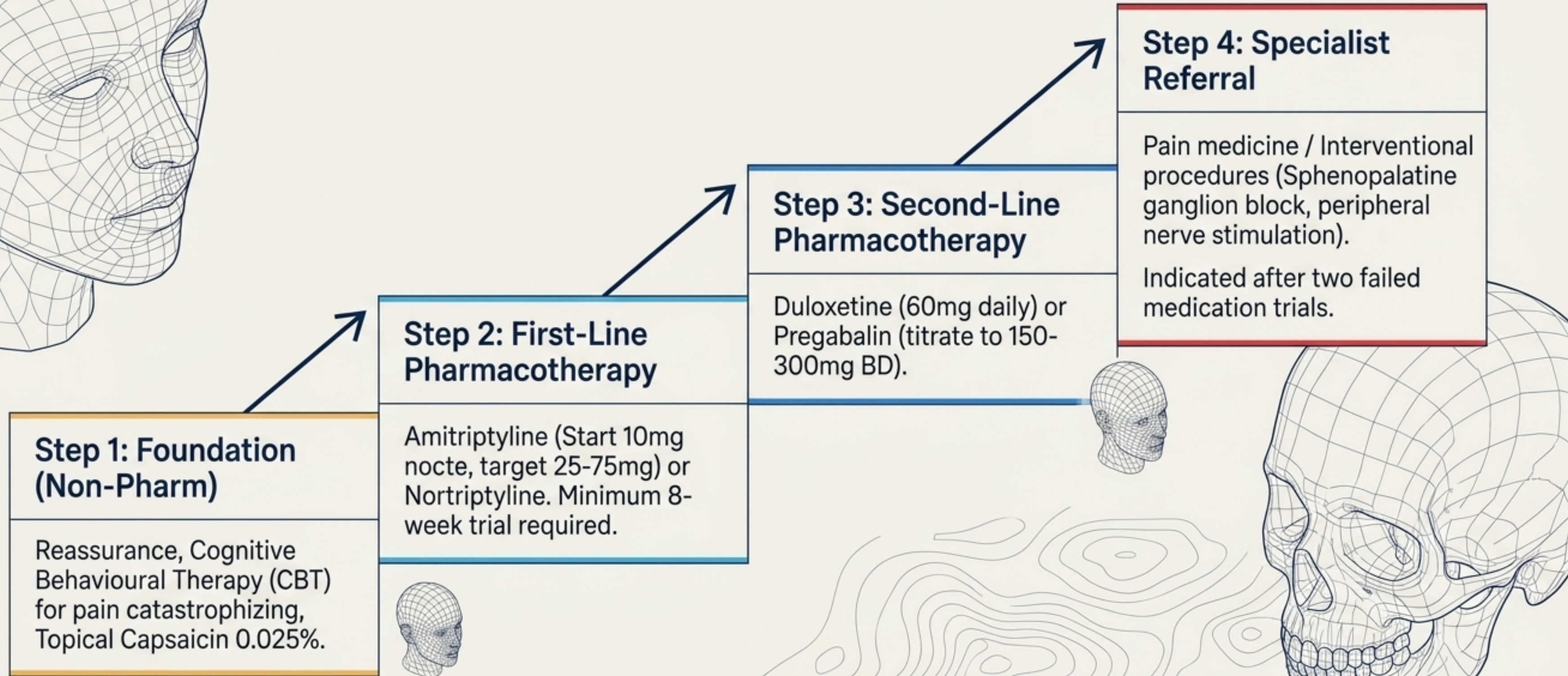
- **Character:** Deep, dull, poorly localized, constant aching.
- **Demography:** Broad adult population.
- **Pathophysiology:** Peripheral/central sensitization, impaired descending pain
- **Rule:** A strict diagnosis of exclusion. Never apply on first presentation.



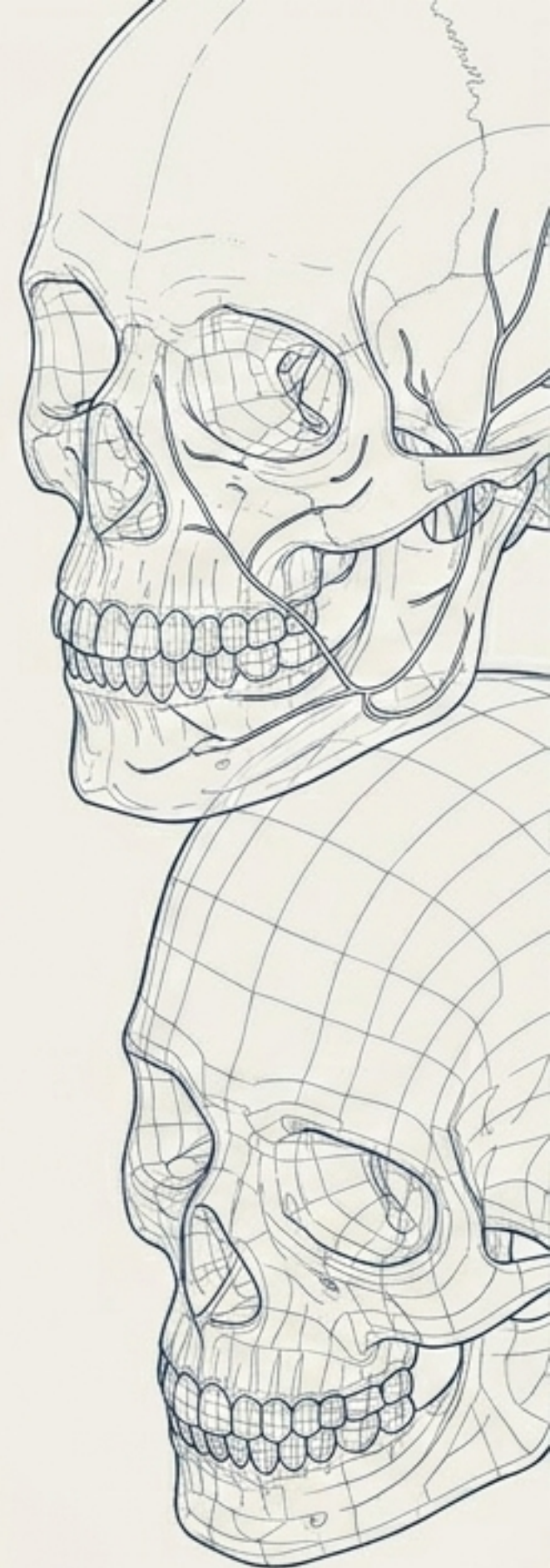
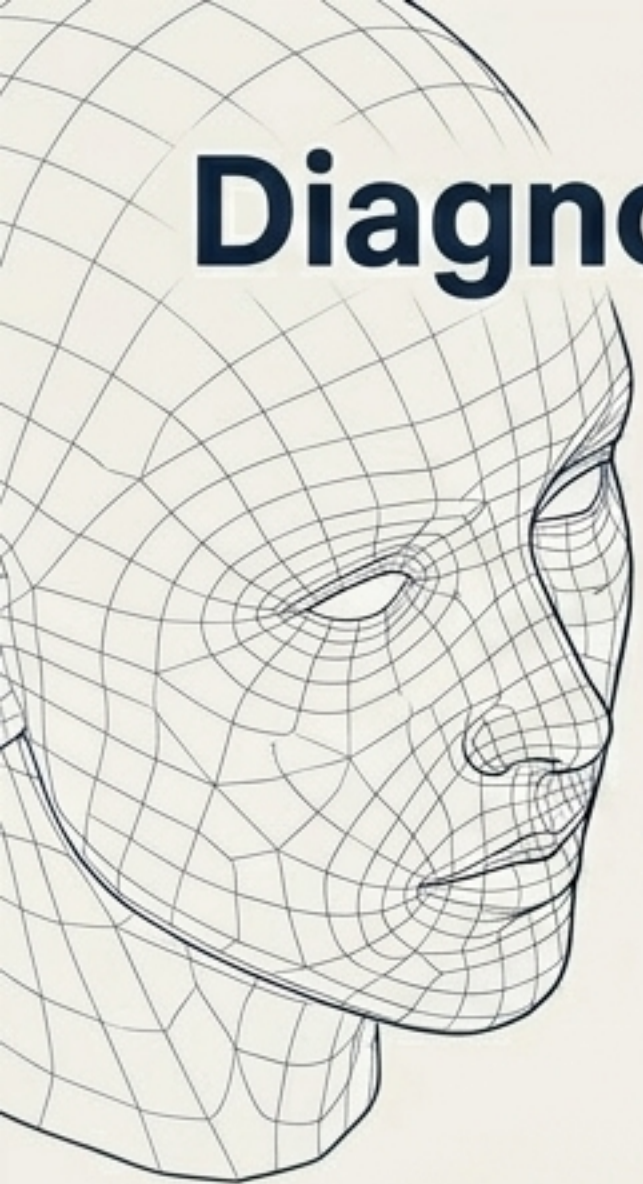
Burning Mouth Syndrome (BMS)

- **Character:** Burning/scalding of tongue, palate, lips. Worsens throughout day. Includes xerostomia and dysgeusia.
- **Demography:** Post-menopausal women (7:1 ratio).
- **Pathophysiology:** Small-fibre neuropathy of intraoral afferents.
- **Must Exclude:** Oral candidiasis, B12/Folate/Iron deficiency, ACE inhibitors, Sjögren syndrome.

Treatment Staircase: Atypical Pain (PIFP/BMS)



Diagnostic Investigations Framework



Tier 1: Essential (Primary Care)

FBE, ESR, CRP (screen for GCA).
B12, folate, ferritin, HbA1c, TSH (exclude secondary causes for MS).

Tier 2: Available (Imaging)

MRI Brain with Trigeminal Protocol (High-res CISS/FIESTA to assess neurovascular contact or MS).
OPG / Dental Radiograph to exclude caries/abscess.

Tier 3: Specialist Procedures

Temporal Artery Biopsy (within 2 weeks of steroids).
FDG-PET/CT (large-vessel vasculitis).
Quantitative Sensory Testing (QST).
Trigeminal Reflex Testing.

Clinical Context Overlay: Aboriginal and Torres Strait Islander Health

Dental Disease Burden

1.6x higher rate of untreated decay. Prioritize urgent dental referral and ACCHO services to address the root cause of many facial pain presentations.

CA-MRSA Prevalence

Higher rates in remote communities. Adjust facial soft tissue infection empiric therapy (trimethoprim-sulfamethoxazole or clindamycin) based on local antibiogram.

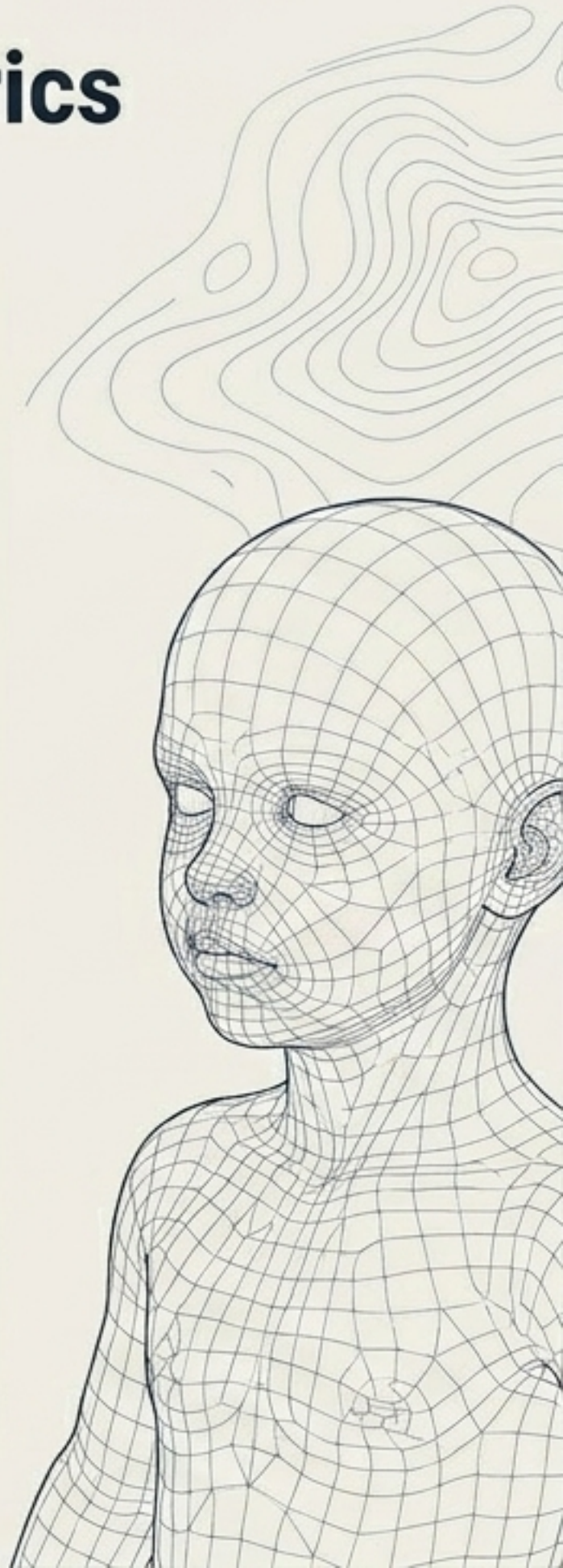
Medication Adjustments

Polypharmacy is common.
Avoid Carbamazepine (CYP3A4 inducer) due to drug interactions;
Oxcarbazepine preferred.
Ensure supply continuity via Remote Area Aboriginal Health Services.

Clinical Context Overlay: Pregnancy & Paediatrics

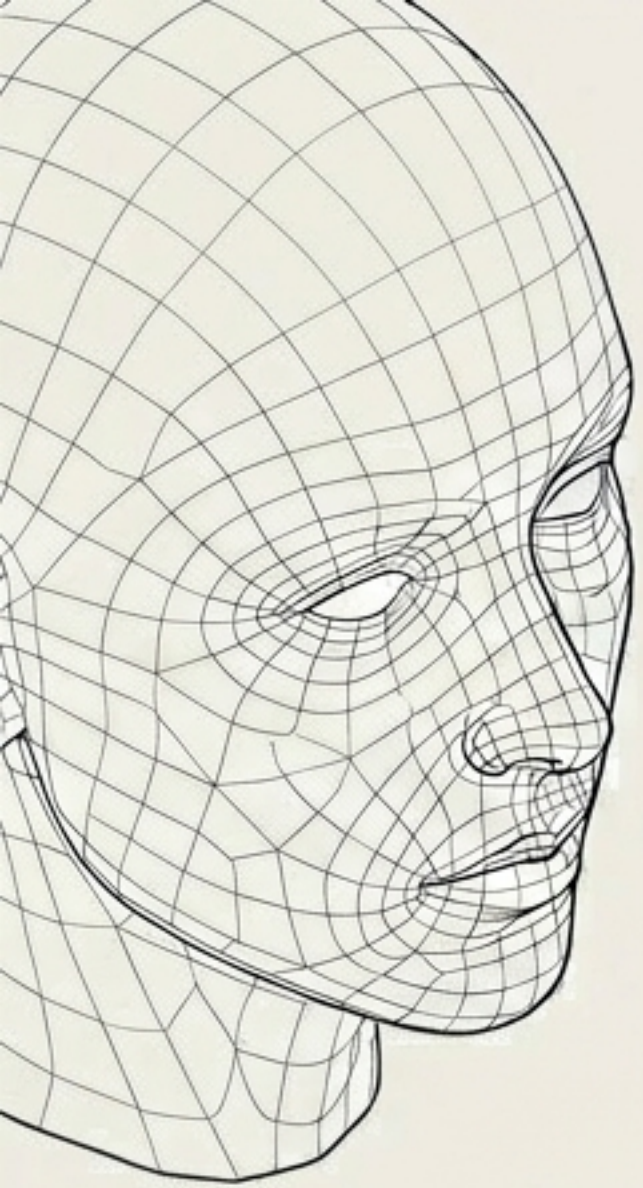


Pregnancy	Paediatrics
<p>Challenge: Carbamazepine & Oxcarbazepine are Category D (teratogenic: neural tube defects, facial clefts).</p> <p>Action: Avoid. Lamotrigine (Category B3) is preferred anticonvulsant. Supplement high-dose folic acid (5mg/day).</p>	<p>Challenge: TN is extremely rare. High index of suspicion for secondary causes (MS, posterior fossa tumour) is required.</p> <p>Action: MRI Brain is mandatory. Neurology referral essential. Avoid TCAs without specialist oversight.</p>




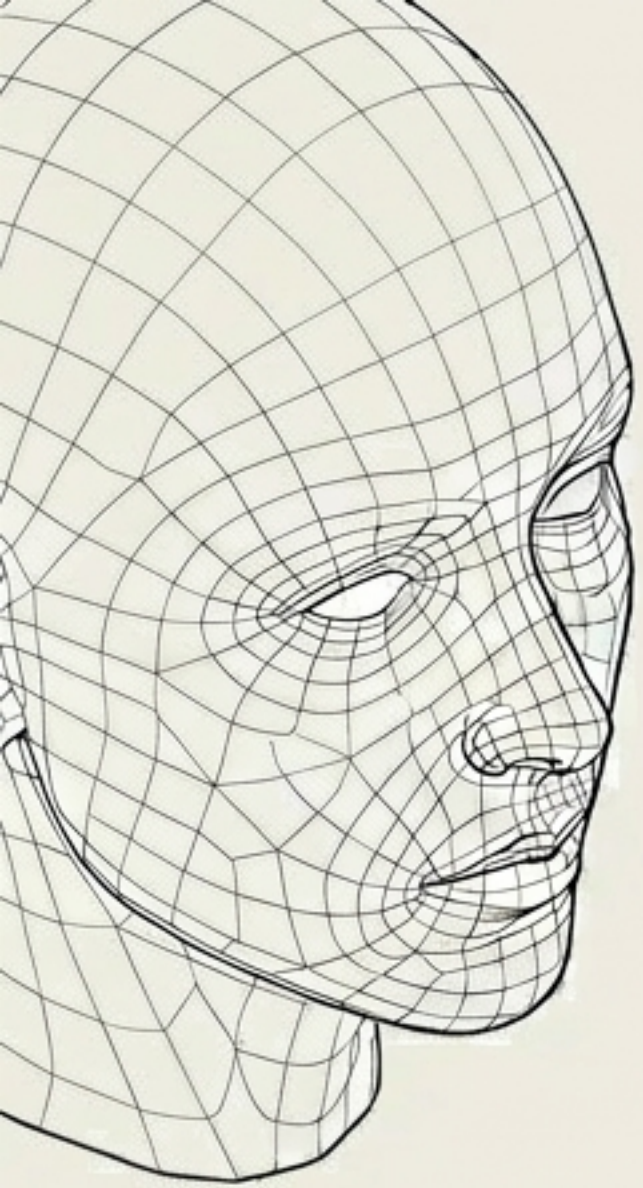


Clinical Context Overlay: Comorbidities

Elderly	Renal & Hepatic Impairment	Immunocompromised
<p>High risk of GCA (>50yrs). Use Carbamazepine with caution (start 50-100mg) due to hyponatraemia and falls.</p> <p>Action: TCAs are potentially inappropriate (Beers Criteria); if needed, use Nortriptyline over Amitriptyline.</p>	<p>Pregabalin, Baclofen, and Gabapentin require significant dose reductions in CKD.</p> <p>Carbamazepine requires close LFT monitoring and is contraindicated in severe hepatic impairment.</p>	<p>Higher risk of severe, multi-dermatomal Herpes Zoster.</p> <p>Action: Aggressive IV Acyclovir (10mg/kg TDS). Consider atypical opportunistic infections (mucormycosis).</p>



The Master Diagnostic Dashboard



Paroxysmal / Shooting	Classical Trigeminal Neuralgia Secondary TN Glossopharyngeal Neuralgia	
Constant / Dull	Giant Cell Arteritis TMD Dental Abscess Post-Herpetic Neuralgia	Persistent Idiopathic Facial Pain (PIFP) Burning Mouth Syndrome
	Structural / Vascular	Idiopathic / Functional

The Master Algorithm: Place the patient's presentation on this map to immediately define the clinical workup and triage priority.