

Temporomandibular Joint and Cervico-cranial Instability in the EDS Patient



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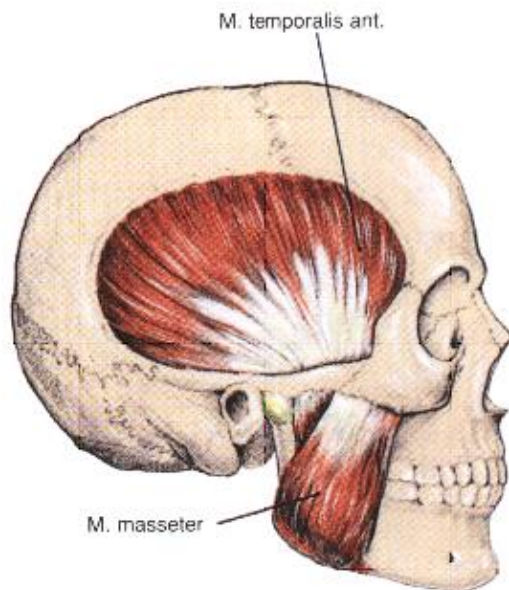
**How TMJ and CCI
impact the EDS patient
- they can occur
separately or more often-
together!**

EDS

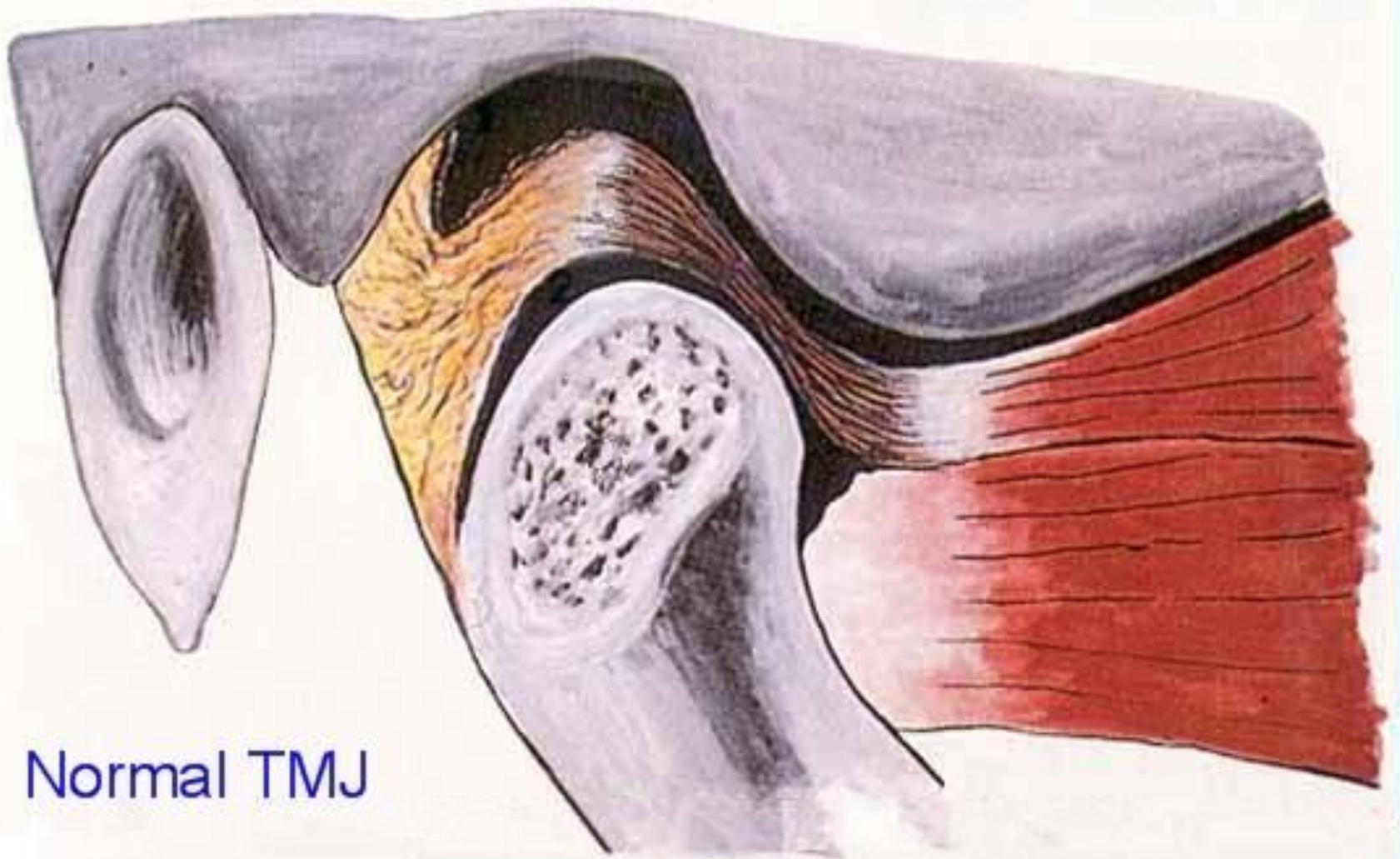
Ehlers-Danlos Syndrome describes an hereditary malformation in the structure of collagen

- This condition affects the body's collagen, which literally holds body together, resulting in loose, flexible joints, easy bruising and more.
- Among affected joints are those in neck and jaw, often triggering TMJ, Migraines and Neck Pain!

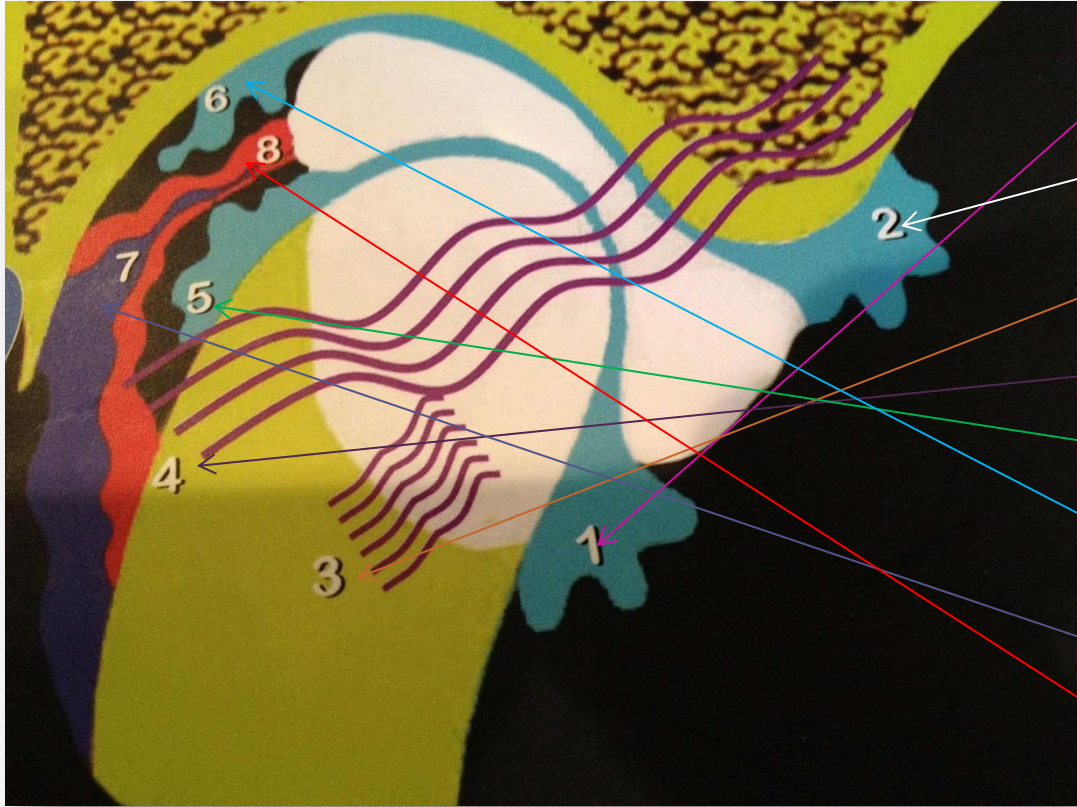
What is TMJ?



Temporomandibular Joint Disorder (TMJ or TMD) is “shorthand” for a complex syndrome of dysfunction of the jaw to the skull, including the cartilage and related muscles including the related pain and symptoms



Normal TMJ



- 1. Inferior Anterior Synovium
- 2. Superior Anterior Synovium
- 3. Lateral Co-lateral Ligament
- 4. Temporomandibular Ligament
- 5. Inferior Posterior Synovium
- 6. Superior Posterior Synovium
- 7. Posterior Ligament
- 8. Retro-discal Area

Jaw Movement Dysfunction and TMJ

- ✦ “Locked” jaw (open or closed)
- ✦ Jaw deviates to affected side
- ✦ Problems finding stable bite position
 - Can’t find comfortable “closed” (bite) position
- ✦ TM Joint noise when opening or closing
 - “Cracking” or “popping”
- ✦ Overall limited or excessive jaw movement



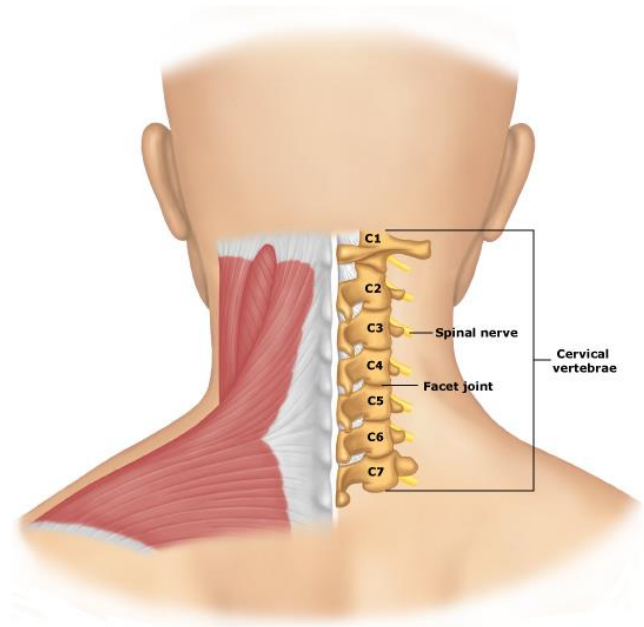
Classic TMJ Disorder Symptoms

Complex and overlapping symptoms include:

- Frequent headaches, (especially temporal) occurring when upon waking and may possibly redevelop in late afternoon
- Abnormal and/or painful jaw movements
- Ear pain
- Pain in or around eye area
- Cheek pain
- Mandibular pain

What is Cervico-Cranial Instability?

Cervico-cranial Instability or CCI is “shorthand” for a complex disorder emanating from the upper vertebra of the neck, including the related pain in the forehead, eyes and vertex of the head



Classic Cervico-cranial Symptoms

- ✦ Limited head movement, especially rotation
- ✦ Trouble swallowing
- ✦ Forward head posture
- ✦ Upper back pain
- ✦ Sore, tender or weak neck
- ✦ Frequent “snapping” or “popping” of neck with *regular* head movement
- ✦ Cervical referral pain into facial area- MIGRAINES

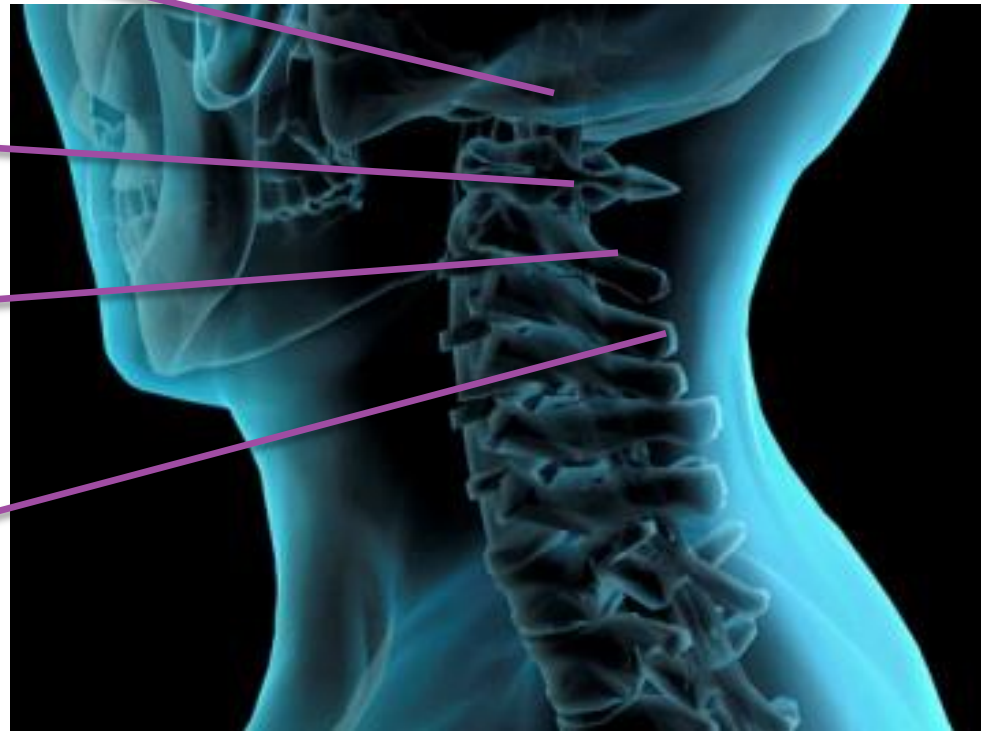
The “Map” of CCD Pain Pain Source/Referral Patterns

C-0 (skull)--Forehead

C-1 (atlas)-----Eye

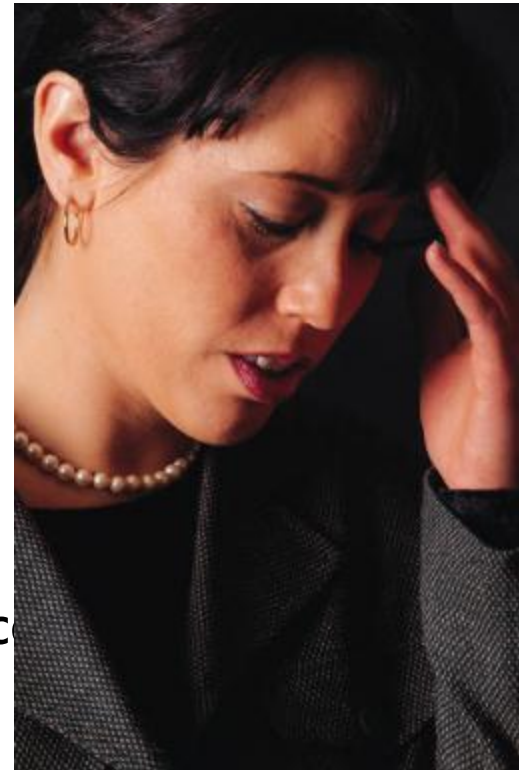
C-2 (axis)-----Cheek

C-3-----Jaw



Sources of Generation of Head and Neck pain

- ✓ Muscular spasms & stricture
 - Temples
 - Back of head (Occipital)
- ✓ Circulatory (constriction OR dilation)
 - Back of head (Occipital)
 - Below the ear (Mastoid)
- ✓ Neurological aberrations
 - Migraine-like headache
 - Myofacial Referral (source ≠ painSource)
- ✓ Skeletal (Vertebral) Displacement
 - Occipital (or Cervical) Referral



Ear Pain



- ✦ TMJ mimics an earache
- ✦ Tinnitus (ringing in the ears)
- ✦ Hearing loss
- ✦ Itching in ear

TMJ Pathologies, con't

- Inflammatory
 - Synovitis/Capsulitis
 - Arthritis (osteoarthritis and osteoarthritis, RA)
- Myogenous
 - Myositis
 - Myospasm
 - Myofascial Pain Dysfunction Syndrome (MFDS)
 - Dystonia
 - Neoplasms

TMJ Pathologies, con't

- Idiopathic Condylar Resorption
 - Spontaneous (associated with trauma)
 - Spontaneous mandibular subluxations with opening, closing, chewing or yawning.

Migraine or Migraine Type Head Pain

- Circle of Willis
- Trigeminal Nerve Sympathetic and parasympathetic effect
- Vertebral Artery blood flow
- Vertebral compression- occipital neuralgias
- Chiari deformity

Convergence Mechanism

- The overlap between Trigeminal nerve and Greater Occipital and Cervical nerves.
- The Trigeminal Nucleus Caudalis extends to the C-2 Spinal segment and to the lateral cervical nucleus in the dorsolateral cervical area
- Symptoms in the Trigeminal or cervical territories produce symptoms that can complex in both areas.

Patient Examination

- ✦ A diagnosis of EDS often precedes TMJ
- ✦ A preliminary exam of skeletal joint mobility is performed to confirm the diagnosis
 - History & Chief complaints
 - Symptomatology
 - Visual & Physical evaluation
 - Hypermobility, including quantifying measurements
 - Soft tissue imaging



Imaging Techniques for TMJ

- 2D
 - Panograph , Transcranial, Tomograms, Arthrograms)
- 3D
 - CT
 - MRI T-1, T-2, Gradient, upright preferred
 - Flair (fast T-2), (shows edema)
 - STIR (suppress fat content- good for MS diagnosis)

Dietary Inflammatory Precautions

- 1) Vitamin D-3, 2000 to 10,000 IU per day
- 2) Doxycycline (50 mg, BID for 3 months)
- 3) Omega 3 – 2.6 mg / day
- 4) NSAIDS
- 5) Glucosamine (1500mg /day)
- 6) B Complex
- 7) Magnesium 400mg/day
- 8) Muscle relaxants-Flexeril,Valium 5mg HS
- 9) Aleve, 220 mg/day
- 10) Tramadol 50 mg /4-6 hrs(max 300mg)

Treatment protocols

- Support and Palliative Treatments Preferred
- Orthopedic positioning of mandible and neck
- Physical therapy
- Medications
- Oral Orthotic
- Supportive Medical/Dental Procedures
- Surgical intervention would be last resort
- Botox

Case Studies

Rebecca 22 year old female



- ✦ **Diagnosed EDS Patient**
- ✦ **Symptoms:**
 - ✓ Temporal & frontal headaches
 - ✓ Bilateral neck pain
 - ✓ TMJ pain over joint & along mandible
 - *Pain increases with repetitive chewing*
 - ✓ C-2 rotation to left
 - ✓ Lordotic curve at C-3/4
 - ✓ Opening at exam = 23mm; at last appointment = 42mm
- ✦ **Diagnosis: Right reducing, left non-reducing discal subluxation of the TM joints, Lordosis with C-2 vertebral rotation to the left**

Case Study 1:

Treatment & Outcome

- ✦ **Treated with:**
 - ✦ **Pivotal Appliance**
 - ✦ **Anterior stabilizing positioning appliance**
 - ✦ **Cervical stabilization and muscle activation**
 - ✦ **Continued night wear of appliance for stabilization**
- ✦ **Outcome: Less frequent/less intense headaches, jaw and neck pain relief**
 - 85% Improvement overall**

Sabrina

43 year old female



- ✦ **Diagnosed EDS Patient**
- ✦ **Symptoms:**
 - ✓ Pain in cheek & ear C function
 - ✓ Headaches 2-3/week, wakes C in L temporal area
 - ✓ Problems began 1.5 years ago when jaw popped out of joint
 - ✓ Bite feels off
 - ✓ Hyper mobility C jaw motion
 - ✓ 40mm opening, but 16-17mm lateral motions
 - ✓ Neck tightness & pain in C-3/4 area on left side
- ✦ **Diagnosed:** left capsulitis, L retro discitis, bilateral joint hypermobility C spontaneous bilateral meniscal subluxations

Case Study 2: Treatment & Outcome

- ✦ **Treated with:**
 - ✦ **Pivotal appliance**
 - ✦ **Physical Therapy**
 - ✦ **Stability-specific orthodontics**
 - ✦ **Equilibration of teeth**
 - ✦ **Continued night wear of appliance for stabilization**
- ✦ **Outcome: Near-complete headache relief; significant decrease in neck pain; occlusion and bite stabilized**

90% Improvement overall

In Summary:

- *Start with in-depth evaluation and diagnosis*
- *In the EDS patient, management is often preferable to surgical solutions*
- *The best outcomes often involve a combination of treatment modalities*

*Work closely with a Craniofacial Pain/TMJ practitioner with EDS-specific experience, and
YOU WILL FIND YOUR ANSWERS!*

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