

Okanagan's Dental Cone Beam CT Specialists

Temporomandibular Joint Dysfunction

TMJ and TMD

Presented By: Dr. Jack DeGruchy, DDS, FAGD



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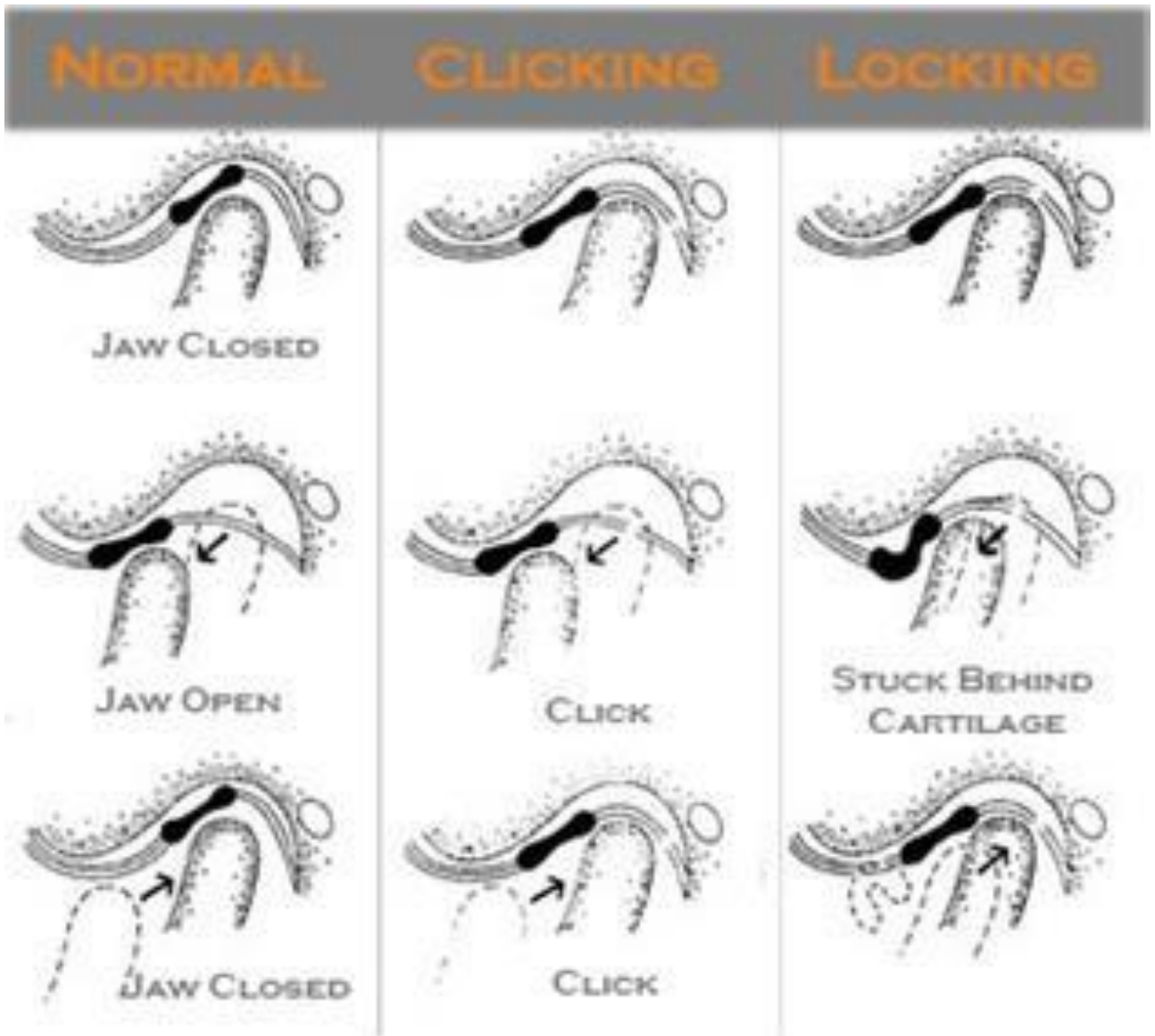
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- The temporomandibular joint (TMJ) is the name of the joint located on either side of your head, just in front of your ears. These joints connect your mandible (jawbone) to your temporal bone (skull). The TMJ, which can rotate and move forward, backward and side to side, is considered one of the most complex joints in the body. This joint, in combination with other muscles and ligaments, lets you chew, swallow, speak and yawn. When you have a problem with the muscle, bone or other tissue in the area in and around the TMJ, you may have a TMD.

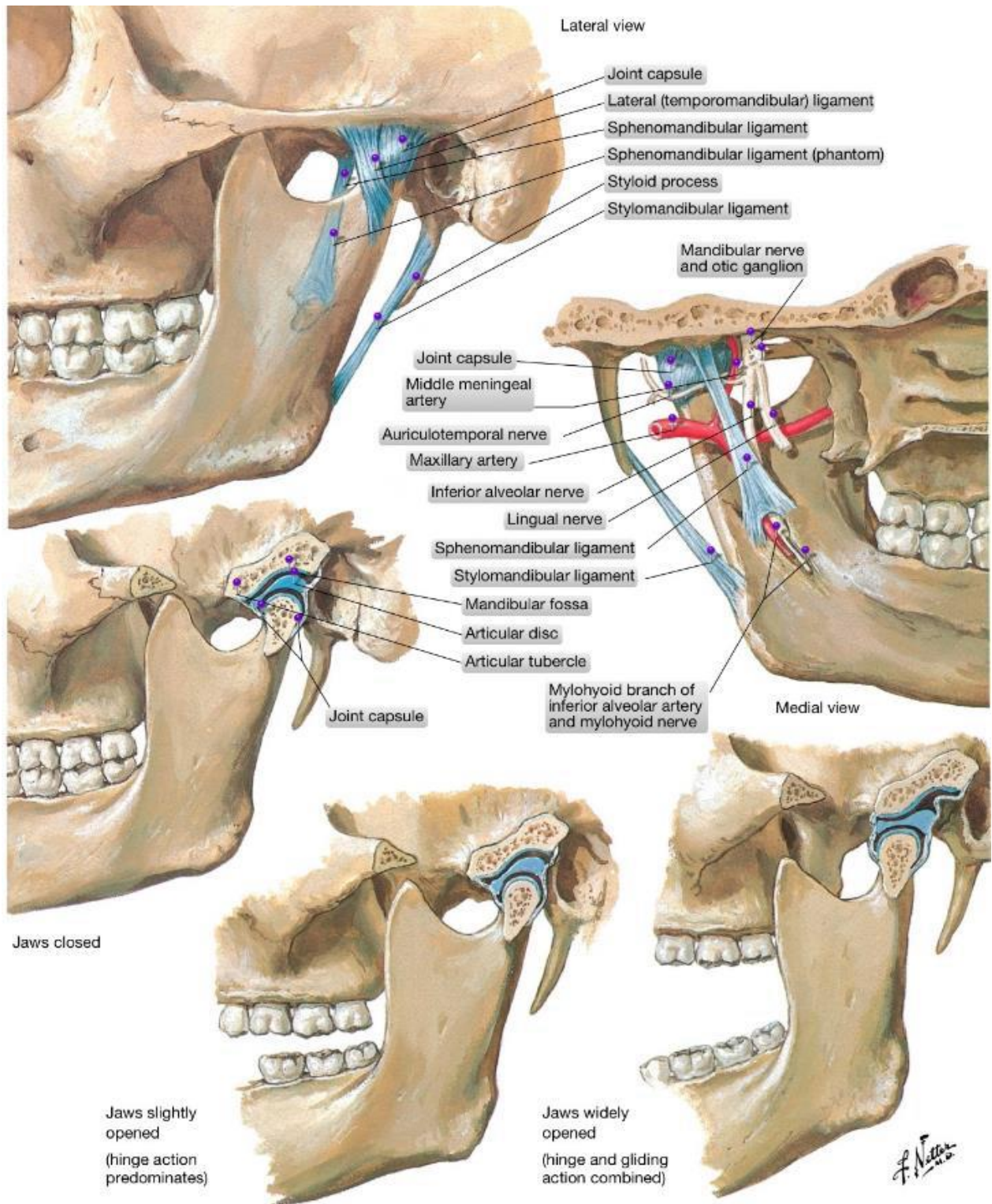
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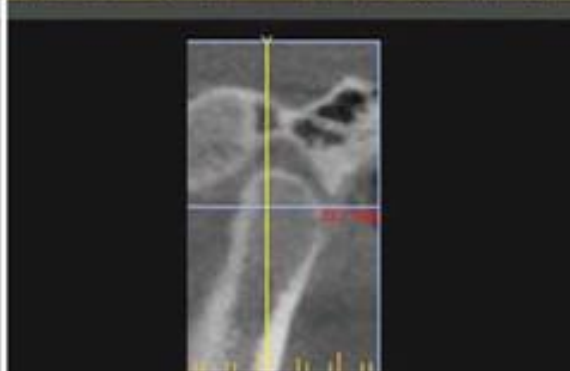
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Normal contour and position of condyle within the articular fossa



Abnormal contour



The *TMJ* is a bilateral synovial articulation between the mandible and temporal bone. The name of the joint is derived from the two bones which form the joint: the upper temporal bone which is part of the cranium (skull), and the lower jawbone or mandible.



Do you suffer from
TMJ Pain?

The temporomandibular joint (TMJ) acts like a sliding hinge, connecting your jawbone to your skull. TMJ disorders can cause pain in your jaw joint and in the muscles that control jaw movement. The exact cause of a person's TMJ disorder is often difficult to determine. Pain may be due to a combination of problems, such as arthritis or jaw injury. Some people who have jaw pain also tend to clench or grind their teeth, but many people habitually clench their teeth and never develop TMJ disorders. In most cases, the pain and discomfort associated with TMJ disorders can be alleviated with self-managed care or nonsurgical treatments. Severe TMJ disorders may require surgical repair.

Do you suffer from any of the following?

Head Pain, Headache

1. Forehead
2. Temples
3. "Migraine" type
4. Sinus type
5. Shooting pain up back of head
6. Hair and/or scalp painful to touch

Eyes

1. Pain behind eyes
2. Bloodshot eyes
3. May bulge out
4. Sensitive to sunlight

Mouth

1. Discomfort
2. Limited opening of mouth
3. Inability to open smoothly
4. Jaw deviates to one side when opening
5. Locks shut or open
6. Can't find bite

Teeth

1. Clenching, grinding at night
2. Looseness and soreness of back teeth

Throat

1. Swallowing difficulties
2. Laryngitis
3. Sore throat with no infection
4. Voice irregularities or changes
5. Frequent coughing or constant clearing of throat
6. Feeling of foreign object in throat constantly

Ear Problems

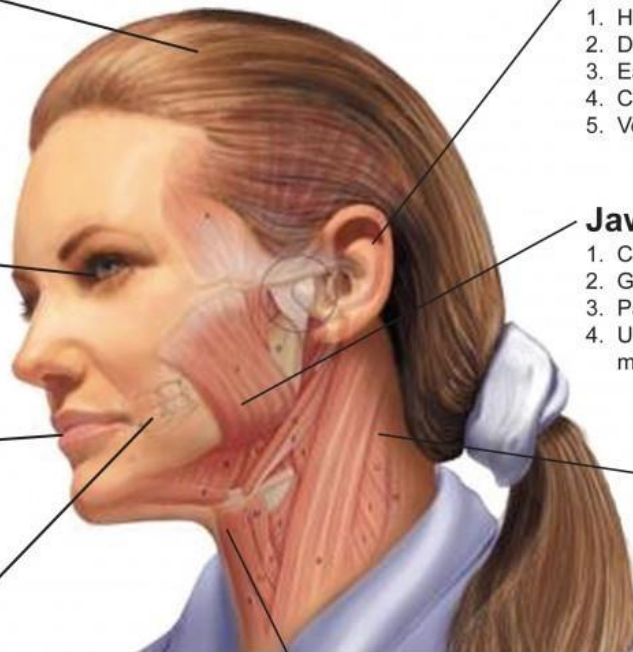
1. Hissing, buzzing or ringing
2. Decreased hearing
3. Ear pain, ear ache, no infection
4. Clogged, "itchy" ears
5. Vertigo, dizziness

Jaw Problems

1. Clicking, popping jaw joints
2. Grating sounds
3. Pain in cheek muscles
4. Uncontrollable jaw and/or tongue movements

Neck Problems

1. Lack of mobility, stiffness
2. Neck pain
3. Tired, sore muscles
4. Shoulder aches and backaches
5. Arm and finger numbness and/or pain



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- **What are the risk factors for TMJ syndrome?**
- There are several risk factors for TMJ syndrome:
- Poor posture in the neck and upper back muscles may lead to neck strain and abnormalities of jaw muscle function.
- Stress may increase muscle tension and jaw clenching.
- Women aged 18 to 44 have increased risk.
- Patients with other chronic inflammatory disorders and painful musculoskeletal conditions have increased risk.
- People with jaw trauma or poorly positioned teeth have increased risk.
- People who have a genetic predisposition to pain sensitivity and increased stress responses may be more susceptible.



What causes TMJ syndrome?

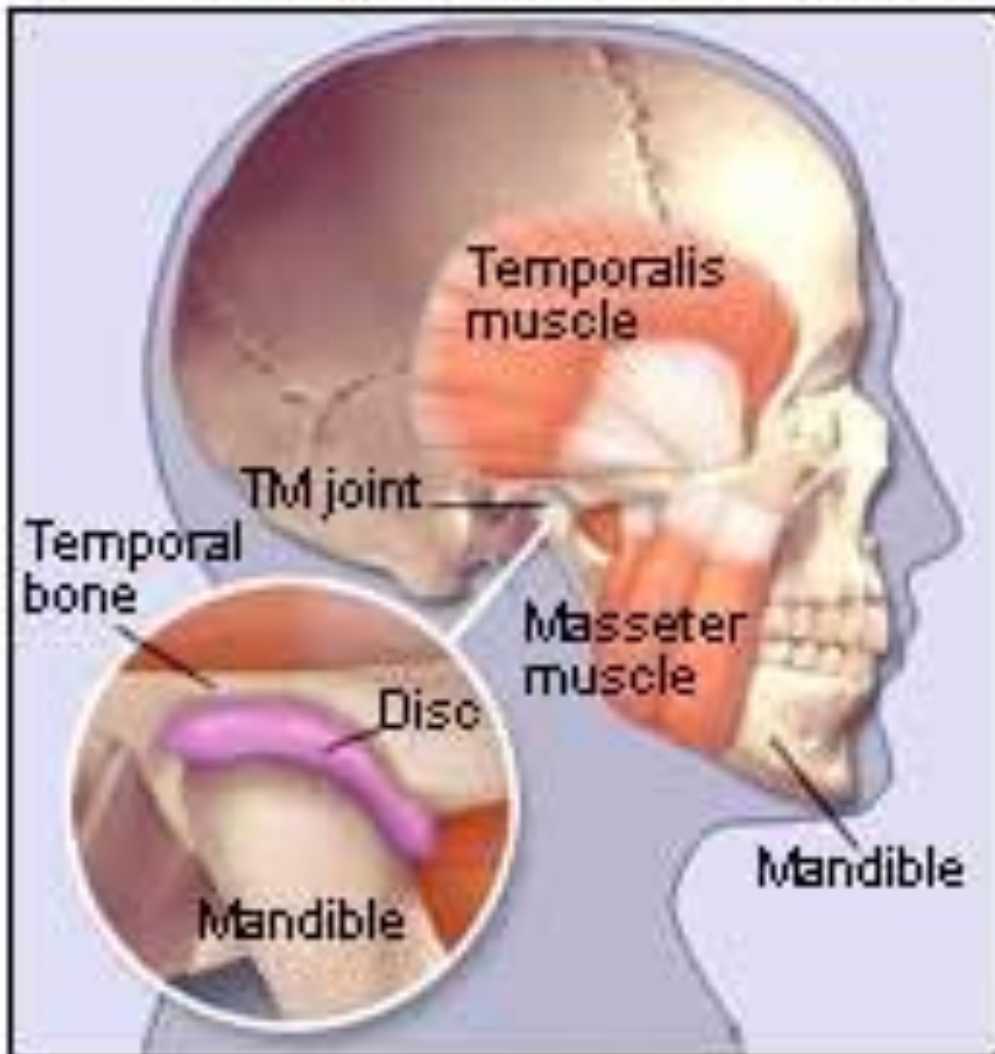
The causes of TMJ syndrome are not completely understood. Multiple factors contribute to the muscle tightness and dysfunction that characterize this condition. It is not clear whether some of these causes directly lead to TMJ syndrome or if they are a result of the disorder. Causes may include:

- Misalignment (malocclusion) of or trauma to the teeth or jaw
- Teeth grinding
- Poor posture
- Stress
- Arthritis or other inflammatory musculoskeletal disorders
- Excessive gum chewing

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Temporomandibular Joint (TMJ)





- The main symptom of TMJ syndrome is pain in the jaw joint. This joint is located just in front of the ear and pain associated with TMJ syndrome may involve the face, eye, forehead, ear, or neck. Signs and symptoms of TMJ syndrome include:
- Pain in the jaw, especially at the area of the joint
- Popping/clicking of the jaw
- Ear pain
- Ringing or popping sounds in the ears
- Headaches
- Blurred vision
- Tight or sore jaw or neck muscles
- Shoulder pain
- Locking or dislocation of the

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Tight Muscles

The muscles surrounding the TMJ can go into **spasm** (tighten) and cause pain.



Inflamed Joints

Inflammation may include pain, redness, heat, swelling, or loss of function.



Damaged Joints

Many people hear clicking when their jaw moves. If you feel pain along with the noise, the joint may be damaged.

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What are the signs and symptoms of TMJ syndrome?

The main symptom of TMJ syndrome is pain in the jaw joint. This joint is located just in front of the ear and pain associated with TMJ syndrome may involve the face, eye, forehead, ear, or neck. Signs and symptoms of TMJ syndrome include:

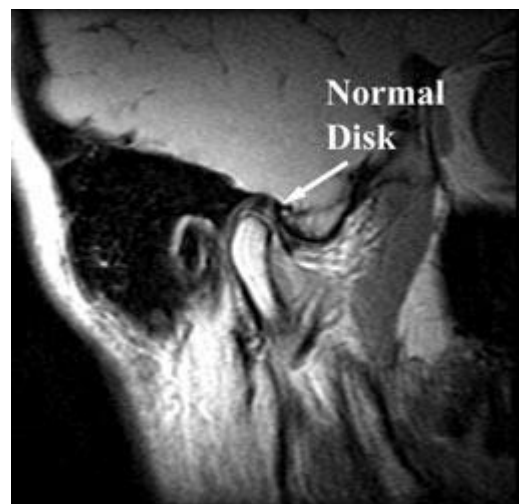
- Pain in the jaw, especially at the area of the joint
- Popping/clicking of the jaw
- Ear pain
- Ringing or popping sounds in the ears
- Headaches
- Blurred vision
- Tight or sore jaw or neck muscles
- Shoulder pain
- Locking or dislocation of the jaw (usually after widely yawning)

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How is TMJ Syndrome Diagnosed?

Your doctor will diagnose TMJ syndrome by taking your medical history and doing a physical exam to find the cause of your symptoms. There is no specific test to diagnose TMJ syndrome. Your doctor may send you to an oral and maxillofacial specialist, an otolaryngologist (also called an ear, nose, and throat doctor or ENT specialist), or a dentist specializing in jaw disorders to confirm your diagnosis. Sometimes an MRI of the temporomandibular joint may be ordered to detect damage to the cartilage of the jaw joint and to rule out other medical problems.



MRI of Normal Disk

What is the Treatment for TMJ Syndrome?

- Ice or cold packs to the area of the joint
- Over-the-counter (OTC) nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (Advil, Motrin), or naproxen (Aleve)
- Eating soft foods and avoiding chewing gum
- Massage or gentle self-stretching of the jaw and neck muscles (your doctor or physical therapist can recommend appropriate stretches)
- Relaxation techniques and stress reduction



When home remedies are not effective, medical treatment options may be necessary. These include:

Dental splint (occlusal splint or stabilization splint or bite guard), which is a dental appliance placed in the mouth that keeps the teeth in alignment and prevents tooth grinding. This is usually prescribed and fitted by your jaw specialist.



Botox may be used to relax the muscles of the jaw. However, this is not currently an FDA-approved treatment for TMJ syndrome.

In severe cases, surgery on the jaw or dental surgery may be necessary.



Prescription-strength pain medicines, muscle relaxers, or anti-inflammatory medications may be necessary.



HEAD, NECK, TMJ, & FACIAL PAIN OR DYSFUNCTION SCREENING QUESTIONNAIRE

(Please Print with Blue Ballpoint)

Name: _____ Date: _____

Referred By: _____ Current Dentist: _____

1. One or more of the following symptoms may indicate a TMJ-Craniomandibular problem. If you have any of the following symptoms, please indicate by circling the appropriate descriptions around the drawing below.

(R: Right Side; L: Left Side)

HEAD

- | | |
|----------------------|-----|
| 1. Tension Headaches | R L |
| 2. Migraines | R L |
| 3. Chronic Headaches | R L |
| 4. Tender to Touch | R L |

EAR

- | | |
|---------------------|-----|
| 1. Clogged | R L |
| 2. Ear Pain | R L |
| 3. Ringing, Buzzing | R L |
| 4. Dizziness | R L |

JAW

- | | |
|-------------------|-----|
| 1. Clicks, Pops | R L |
| 2. Joint Pain | R L |
| 3. Grinding Noise | R L |
| 4. Facial Pain | R L |



NASAL

1. Sinus Pain
2. Post Nasal Drainage
3. Allergic Conditions

EYE

- | | |
|---------------------|-----|
| 1. Red Eyes | R L |
| 2. Light Sensitive | R L |
| 3. Pain Behind Eyes | R L |
| 4. Tears in Eyes | R L |

MOUTH

1. Abnormal Opening
2. Bad Bite
3. Missing Jaw Teeth
4. Excessive Mouth Breathing
5. Grind/Clench on Teeth

NECK & SHOULDERS

- | | |
|----------------------------|-----|
| 1. Pain | R L |
| 2. Stiffness | R L |
| 3. Poor Posture | ___ |
| 4. Swallowing Difficulties | ___ |

2. If you routinely have any pain, mark in red on the drawing in which area of the head or neck this pain occurs.
3. How long has this been a problem for you? _____
4. Does this condition alter the quality of your life? _____
5. Do you feel that you need more information about TMJ Disorders? _____
6. Do you feel that the doctor should examine you further concerning this condition? _____

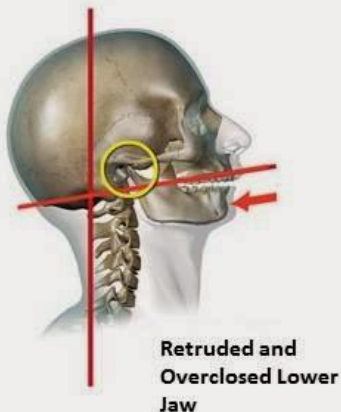
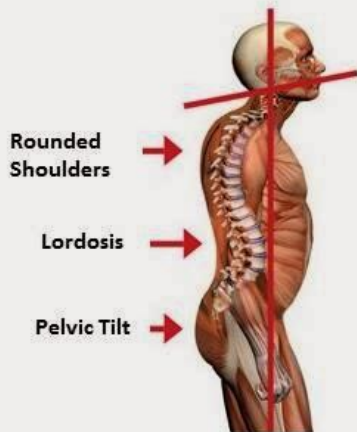


**GET DIAGNOSED
NOW.**



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Forward Head Posture And TMJD

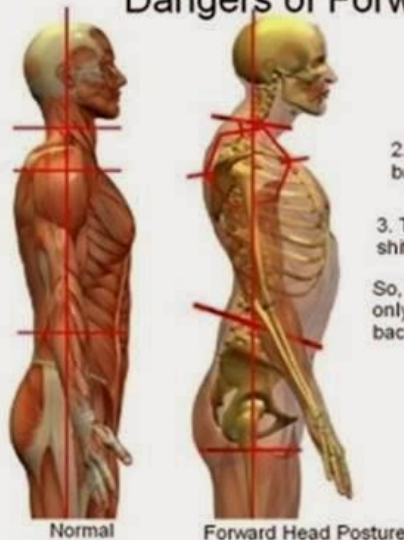


Dangers of Forward Head Posture

The Domino Effect

1. The head moves forward shifting the Center of Gravity.
2. To compensate, the Upper body drifts backward.
3. To compensate for the upper body shift, the hips tilt forward.

So, the forward head position can be the cause of not only head/neck problems, but also mid-back and low back problems.



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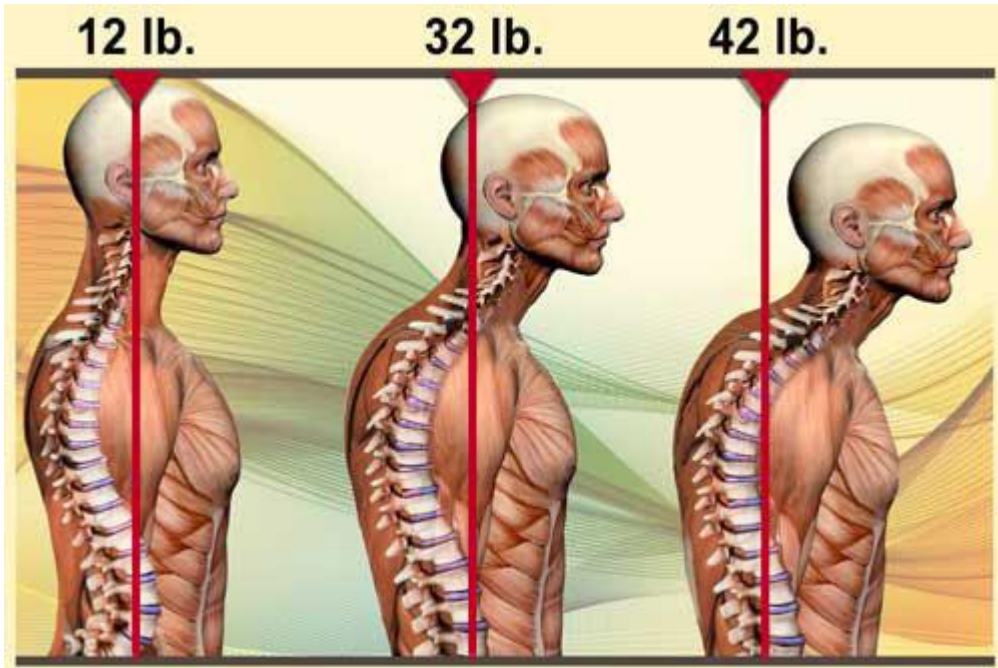
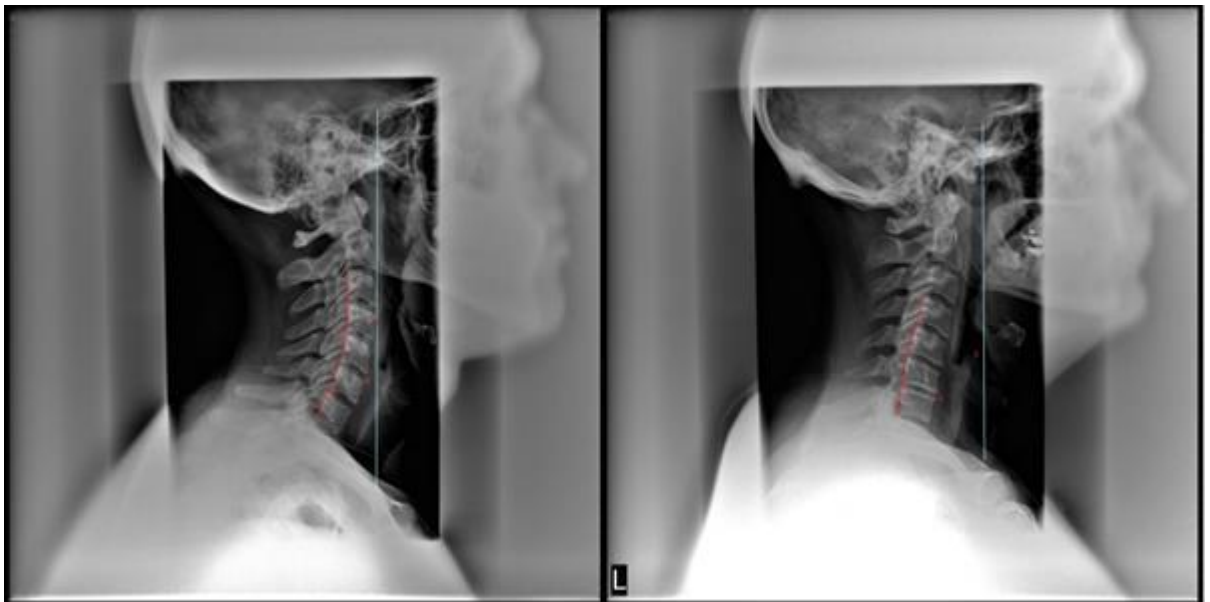
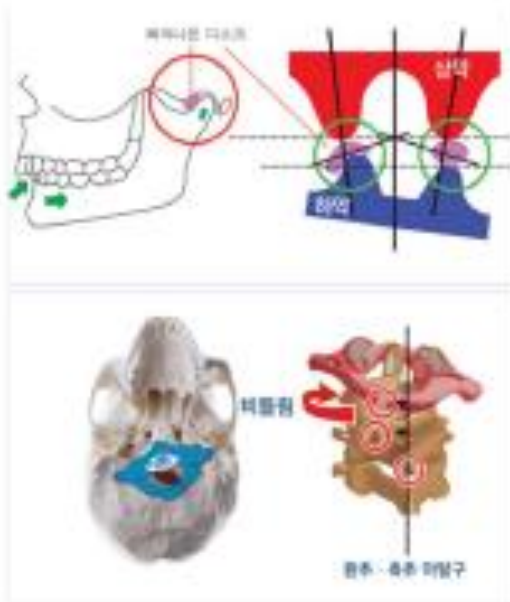


Figure 1

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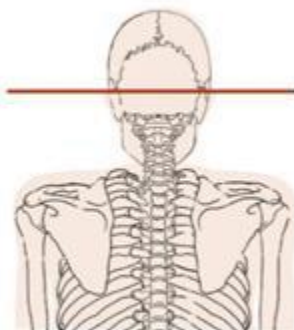
How TMJ distortion leads to Atlas and Axis distortion



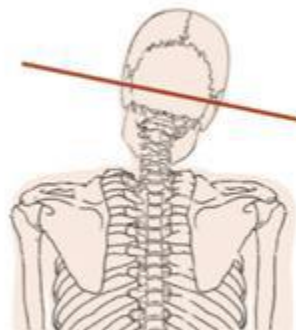
- TMJ distortion → nociceptive signal
→ reflex contraction of upper cervical muscle (especially suboccipital muscle around C1 and C2) → Atlas & Axis malalignment
(in essence, this means subluxation)

Ref: Chiropract res J 1997;IV: 64-76
J Manipulativ Physiol ther 1999;22:32-7/1982;5(2):63-71)

Jaw Strain affects Posture Too



Even muscle tension
Head balanced on spine



Uneven muscle tension
Head misaligned on spine

CANADIAN
digitalimaging 

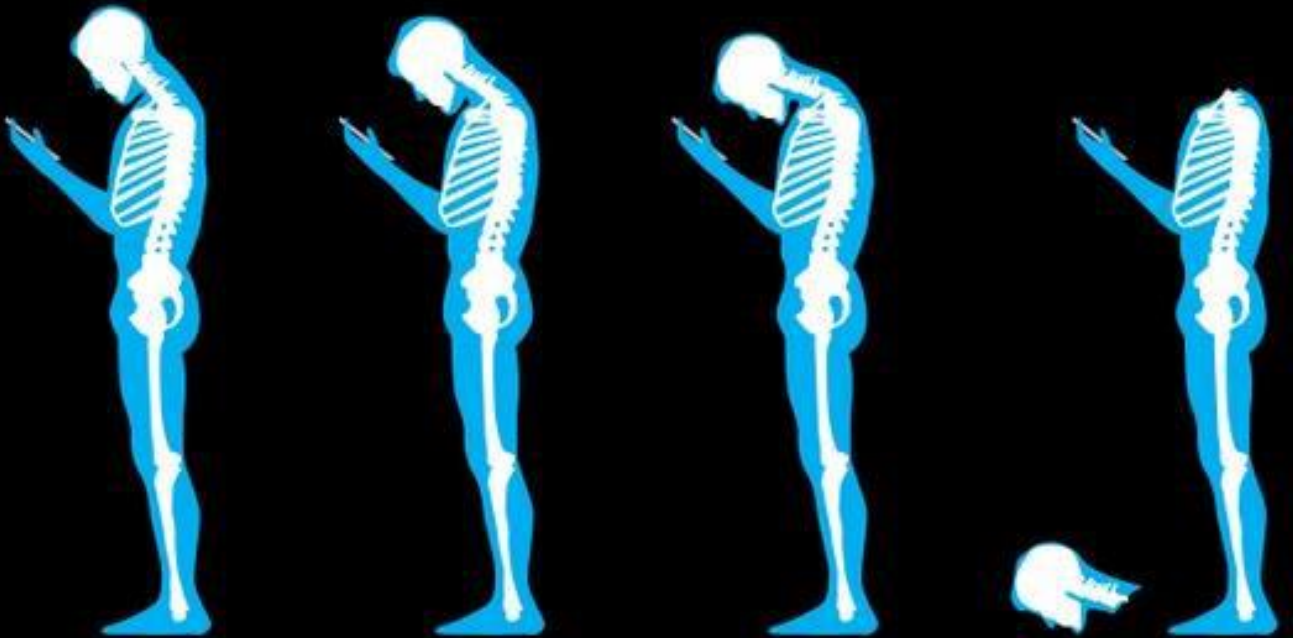


45 degrees
49lbs

60 degrees
60lbs

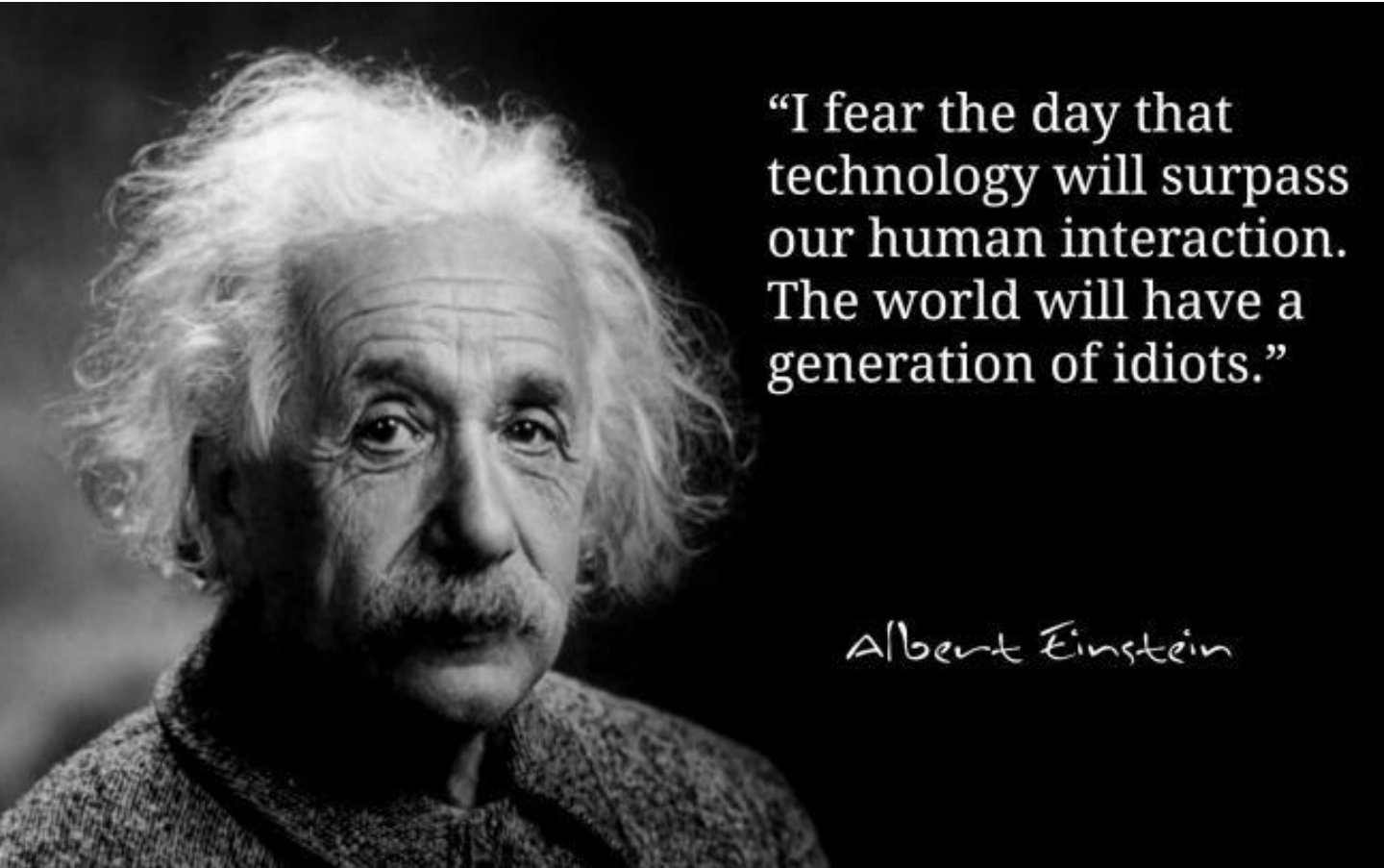
75 degrees
~70lbs

0lbs



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“I fear the day that
technology will surpass
our human interaction.
The world will have a
generation of idiots.”

Albert Einstein

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