MYOFASCIAL PAIN SYNDROME IN THE HEAD AND NECK REGION
WHAT IS MYOFASCIAL PAIN SYNDROME?

It is a syndrome characterized by chronic pain caused by multiple trigger points and myofascial tightening. The term fascial pertains to the muscle, and it is a lining composed of the connective tissue that covers, connects and supports muscles.

The main symptoms associated with this syndrome are:

- Tenderness to palpation with referred pain to the other muscles of the body or joints
- Limited ROM and difficulty to relax or fully lengthen the muscle
- Longer lasting muscle pain, weakness and stiffness
- Sleep disturbance

However this syndrome can include many more symptoms, which are related to the area of the body where the trigger points are present.
The myofascia is composed of connective tissue, which contains: cells, ground substance and fibers.

The ground substance and the fibers, which are outside of the cells, make up the matrix, which can be solid and gelatinous with a web-like shape. However, when myofascia becomes tight and thick it is difficult to get it back to the gel-like flexible state without intervention. The muscle and the fascia can essentially be “trapped” together causing inflammation and pain. Muscular dysfunction can lead to movement limitation, which can cause a cycle of pain that must be broken. This tightening of myofascia will also affect the neurotransmitter’s ability to send and receive neural information, which will further distress the muscle.
Fascia under the microscope
WHAT IS HAPPENING TO MYOFASCIA?

The exact cause of MPS is unknown. However, many factors such as bad posture, injury, leg length discrepancy, emotional stress, whiplash accidents, surgery, overuse, inactivity will affect myofascial tissues, and cause changes such as:

- diminished elasticity of myofascia

- thickening and tightening of myofascia preventing muscle to fully relax

If the body creates enough sites where the myofascia has changed then this will affect the quality of movement, making one muscle work harder to pull against the restriction present in the opposite muscle. This causes more tension in the muscle and discomfort, which will cause neuromuscular response known as “guarding” of the painful area. A muscle becomes in a constant tension that needs more nutrition and oxygen, and starts to produce more waste. This creates an area in the myofascia starving for food and oxygen and loaded with toxic wastes. Such an area is a trigger point.
WHAT IS TRIGGER POINT?

Trigger point is a sore point that not only hurts where it is pressed, but it also “triggers” a referred pain to the different area of the body. The trigger point restrict movement, weakens and prevents full lengthening of the affected muscle.

WHAT IS TRIGGER POINT NERVE ENTRAPMENT?

A nerve entrapped between trigger point and the bone, which can produce numbness in the area of compression.

Simple test can be done to distinguish between trigger point with nerve entrapment and trigger point without one.

If ice makes it feel better that is a sign of nerve entrapment.

If ice makes it worse and heat relieves the pain, then there is no nerve entrapment.

Pain from trigger point is usually steady, dull, and deep. If there is nerve entrapment the pain can be burning, sharp, and lightening-like.
**CHRONIC MYOFASCIAL PAIN SYNDROME**

Trigger point may develop secondary and satellite trigger points.

**Secondary TrP** - develop when a muscle is subject to stress because another muscle with TrP isn’t doing its job. Another muscle compensates for the muscle that is not working and the overworked muscle can develop a secondary TrP.

**Satellite TrP** - develop when a muscle is in a referred pain zone of another TrP.

Without proper intervention the trigger point can lead to severe and widespread chronic Myofascial Pain Syndrome, which is defined as condition of multiple trigger points present in all four quadrants of the body for at least 6 months.
IMPORTANT FACTORS IN FACIAL TRIGGER POINTS ARE:

- Grinding the teeth
- Clenching the jaw
- Thumb sucking
- Chewing gum
- Loss of wisdom tooth
- Oral surgery
- Mouth breathing
- Extreme emotional tension
- Smoking-causes the blood vessels to constrict and decreases blood flow, which limits the amount of oxygen and nutrients
- Poor posture, overuse muscles, immobility, exercising only one side of the body and promoting muscular asymmetry will cause additional tightening and stress applied to the muscles.
MUSCLES TYPICALLY AFFECTED BY TRIGGER POINTS IN THE HEAD AND NECK REGION ARE:

Sternocleidomastoid

Upper Trapezius

Suboccipital muscles

Splenius Capitis and Splenius Cervicis

Masseter

Temporalis

The trigger points in the muscles mentioned above can cause headache, toothache, blurred vision and balance problems, eye, ear, sinus, jaw, and neck pain.
Suboccipitals muscles will refer pain to the back of the head and ear.

Splenius Capitis and Splenius cervicis will refer pain to the top of the head, ear, and eye.
Masseter

Note that trigger points from the Masseter muscle often refers pain to the upper jaw sinus area and top and bottom molar teeth. An incorrect diagnosis of sinusitis or molar tooth pain is often made. Pain is also referred to the ear and TMJ.

Temporalis

Trigger points A, B, and C occur at the attachment of muscle to tendon and refer pain to the upper teeth and are most often associated with ‘temporal tension type’ headaches, and maxillary tooth pain. Temporalis trigger points are very common in TMD and Facial Pain patients.
Treatment designed to relief pain caused by trigger points are:

**Trigger point injection** - directly injecting the mild dose of procaine (local anesthetic) into the trigger point. It is difficult to accurately stick the trigger point with the hypodermic needle.

**Spray and Stretch** - the therapist needs to be absolutely sure that is stretching the muscle containing the TrP that is referring the pain, and just before stretching it is important to chill the skin around the TrP and the area where pain is referred with ice of refrigerant spray to distract the CNS. It is also important to work quickly so that the cooling agent won’t cool the underlying muscle. Cooling the muscle will inhibit the stretch rather than facilitating it. After stretch the skin should be rewarmed with hot pack. If a patient had a limited movement before treatment the therapist can perform PROM.
Treatment designed to relieve pain caused by trigger points are:

**Deep stroking massage** - safe and effective method applied directly to the TrP. Success with trigger point massage depends ultimately on your ability to recognize referred pain and to trace it back to the trigger point that is causing it. Trigger points are not usually found at the place that hurts. Massage in the wrong place can feel good but doesn’t resolve the problem. Therapists’ hands are a great tool in searching for the tenderness spots. Use deep stroking massage with slow, rhythmic, repeated strokes in one direction. Performing a series of deep strokes across the trigger point will move the blood and lymph fluid with accumulated wastes from the painful areas. A deep stroking massage is also bringing relief by activating release of painkilling endorphins.

**Ischemic compression** - the traditional practice regarding trigger points dictates that a clinician must press and hold them until they release, which is squeezing the blood out of the trigger point.
Treatment designed to relieve pain caused by trigger points are:

**Trigger Point Release** - Heat up the tissue with the ultrasound or hot pack. Apply direct pressure with your thumb to the trigger point for 60-90 seconds and then stretch. Repeat 3 times, and apply ice. (Ultrasound parameters will depend on how deep the muscle with TrP is located. If it is a superficial muscles the parameters will be frequency at 3 MHz, transducer size 5 cm², duty factor 50%, 2 min. intensity for example on 0.5 depends on how deep is the TrP). Contraindications to US: directly on pregnancy, metastasis, lack of sensation, thrombus, pacemaker, psoriasis.

**Posture Re-training**: Learning and applying principles of correct posture and body mechanics can help relieve stress and tension on the affected muscles.

**Electrical stimulation** - trigger points have a decreased resistance to electrical energy so TENS can be beneficial in treating the pain coming from TrP.
1. Trigger points do not respond to positive thinking, biofeedback, meditation, and progressive relaxation.

2. Patient with Myofascial pain syndrome should avoid weight training, swimming in the cold water, and muscle overuse.

3. Tennis ball or Theracane are examples of tools that can be used by patients at home to relieve pain caused by typical nodules or active trigger points.
What is Trigger Point Complex?

Center of muscle shows tender spot in a palpable tight band and refers pain to a distance. The tight band extends the length of the muscle fibers to its attachments, where the sustained tension of the tight band produces an attachment trigger point (ATrP) on both sides of the muscle.

http://www.youtube.com/watch?v=9Aakc59YFJE
(2:20-3:24 min)
References:


“Fibromyalgia and Chronic Myofascial pain Syndrome” by D. Starlanyl, M.E. Copeland published by new harbinger Publications.