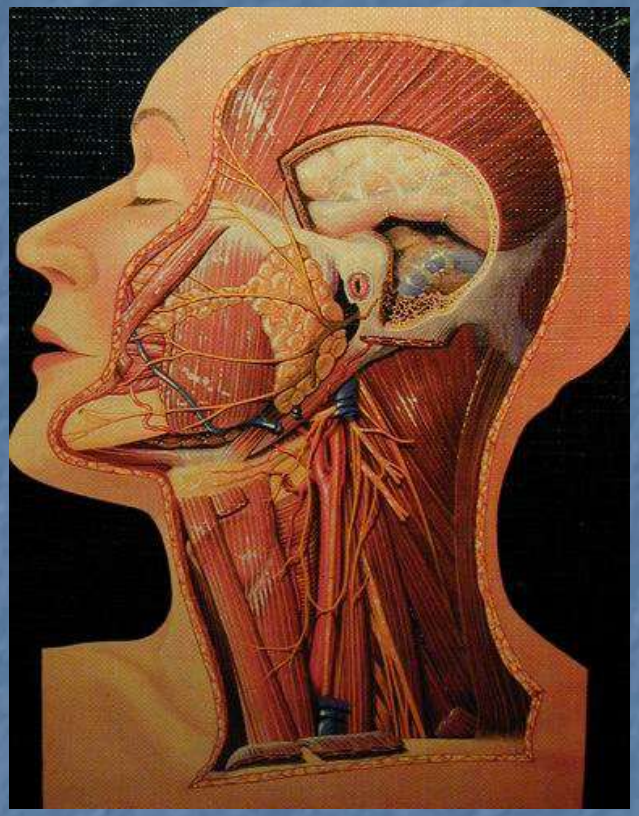
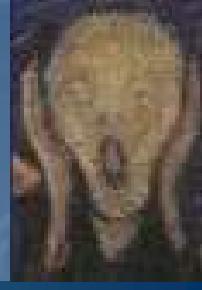
TEPOROMANDIBULAR PAIN

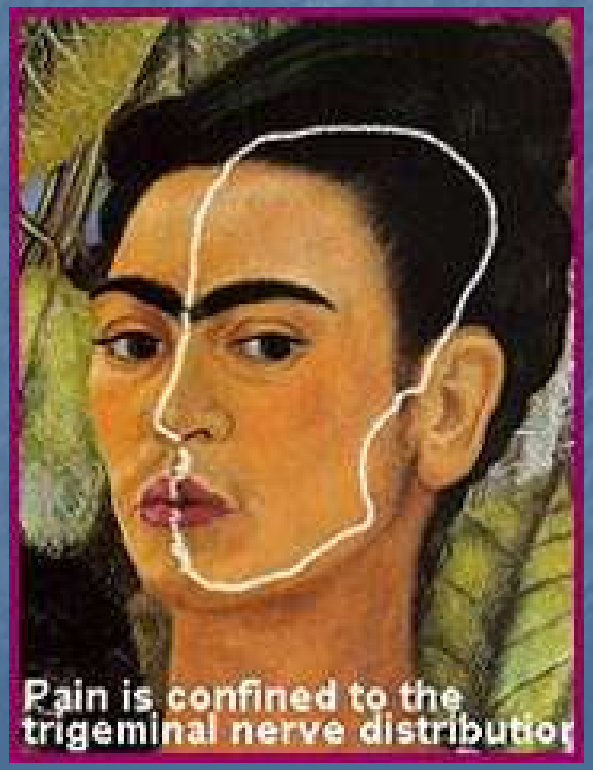


Prof. Zvan Bojana, M.D., Ph.D., senior consultant, FESO
University Medical Centre Ljubljana, Slovenia
Clinical Department of Vascular Neurology

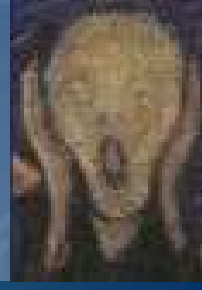
Facial pain



- TMJ pathology
- Other ethiology

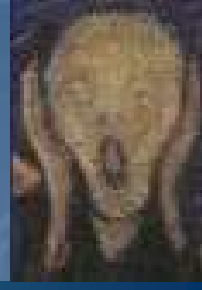


Some signs and symptoms of TM diseases



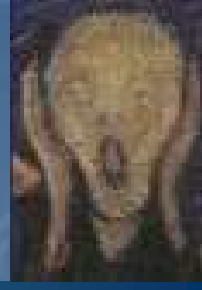
- Facial pain
- Jaw joint pain
- Back, Neck, cervical pain
- Postural problems (forward head posture)
- Pain in the joint(s) or face when opening or closing the mouth, yawning, or chewing
- Headaches
- Pain in the muscles surrounding the TMJ
- Pain in the occipital (back), temporal (side), frontal (front), or infra-orbital (below the eyes) portions of the head
- Pain behind the eyes
- Swelling on the side of the face and/or mouth

Some signs and symptoms of TM diseases



- Clenching/bruxing
- Tender sensitive teeth
- A limited opening or inability to open the mouth comfortably
- Deviation of the jaw to one side
- The jaw locking open or closed
- Tinnitus in the ears, ear pain, diminished hearing, and/ or hyperaccusis
- Sinus like symptoms
- Dizziness or vertigo
- Visual Disturbances
- Insomnia - difficulty sleeping

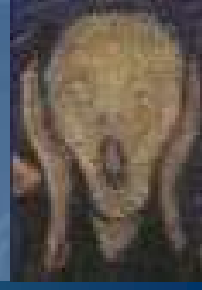
Facial pain



Causes of pain

- Inflammation
- Trauma
- Tumors
- Degenerative causes
- Metabolic causes
- Unknown causes

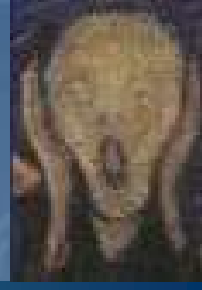
Facial pain



ACUTE / CHRONIC

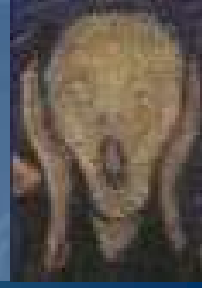
- Dental pain
- Sinuses pain
  - **Muscular-joint pain**
- Pain of salivary glands
- Skeletal pain
- Neuralgias (trigeminal, glossopharingical)
- Inflammatory ears pain
- Vascular pain (migraine, gigantocelular artheritis, facial migraine neuralgia)
- Herpes zoster neuralgia

Primary TMJ diseases

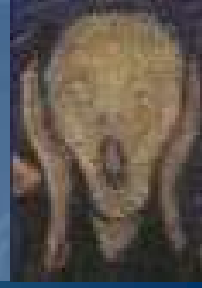


- **Developmental abnormalities:** condilar hyperplasia, condilar hypoplasia, condilar aplasia, hyperplasia of coronoid processes, congenital syndrome
- **Inflammation:** bacterial arthritis, rheumatoid arthritis, juvenile chronic arthritis,… others
- **Injuries:** Fractures of condilar processes, trauma of interarticular joint plate
- **Ankyloses:** Fibrous ankylosis, bone ankylosis
- **Tumors:** Primary bone tumors, primary malignant tumors, metastases
- **Cysts:** Ganglial cyst, synovial cyst, epidermoid cyst, aneurysmal bone cyst
- **Other diseases:** SLE, avascular necroses, acromegalia

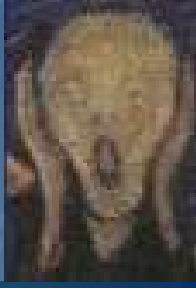
Developmental abnormalities: condilar hyperplasia



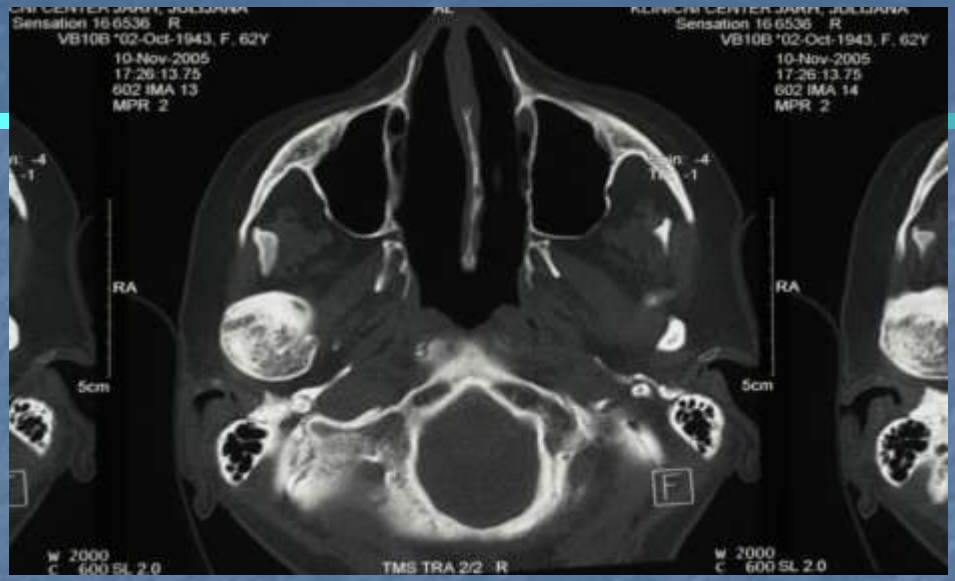
Osteomyelitis



Injuries: fracture of condylar joint



Ankylosis



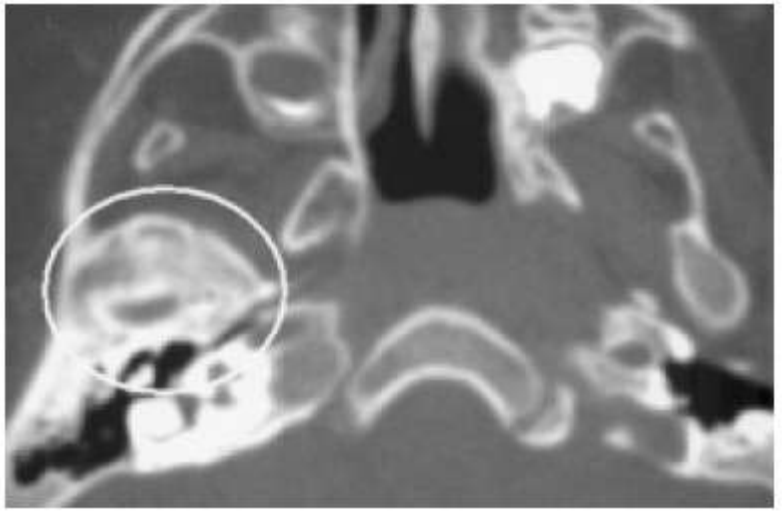
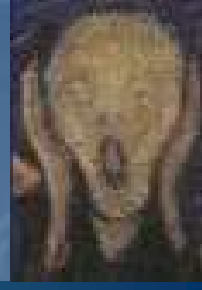


Figure 1. 2D-CT axial view (bone window) shows right TMJ ankylosis with loss of anatomical landmarks (white circle).

Excision of the Ankylosis via Gap Arthroplasty

Neoplasms

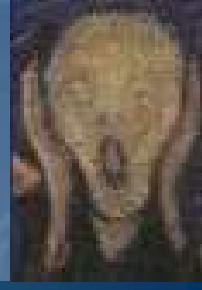


- Histological exam
- CP- cytology
- CT scan
- Neck and abdominal US
- Endoscopy
- Chest X-rays
- blood exam

Neoplasms

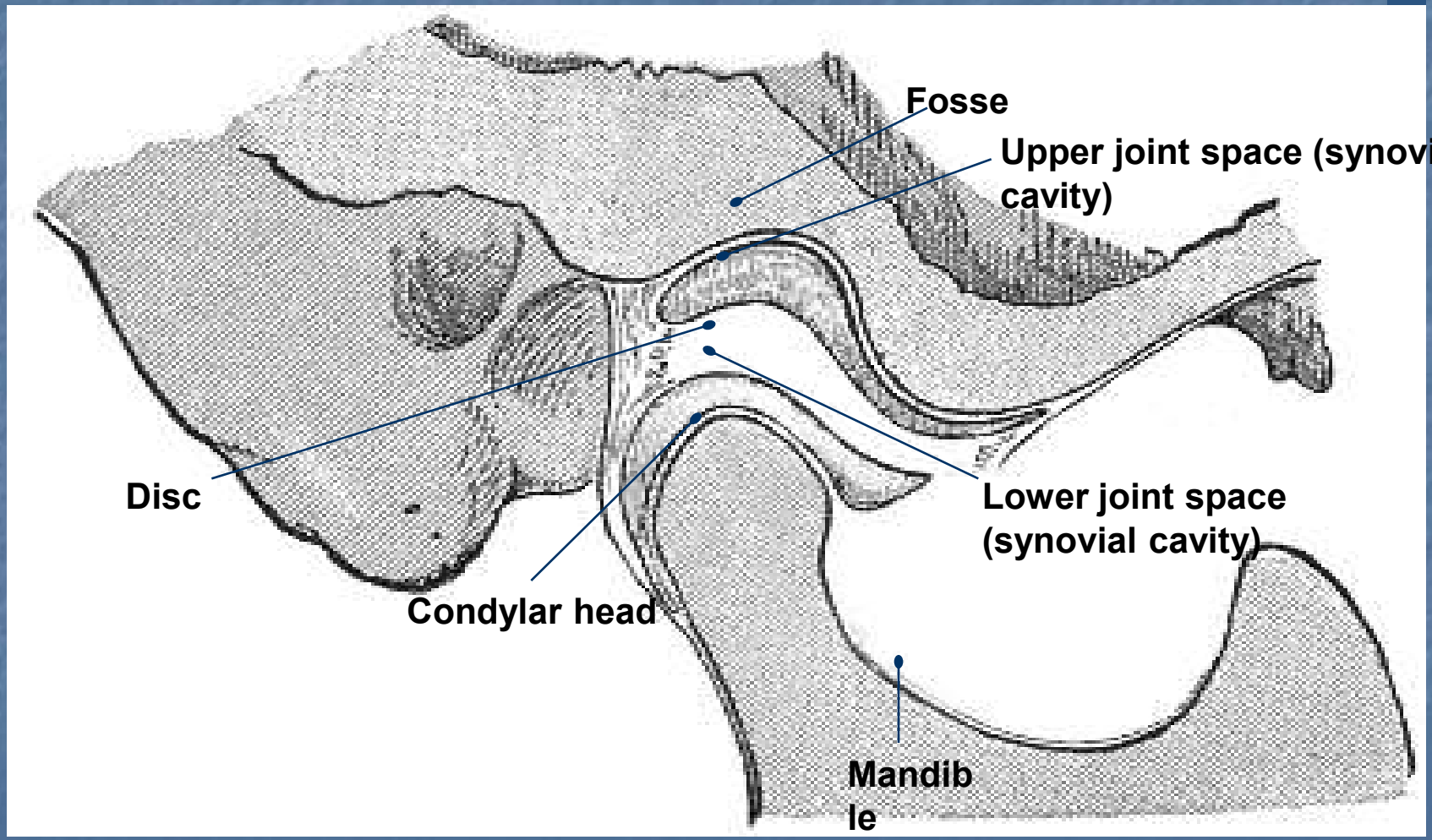
Hyperdense lesion on the ramus, with condyle involvement, osseous expansion and destruction

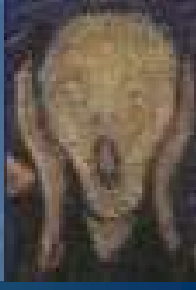
Secondary TMJ diseases

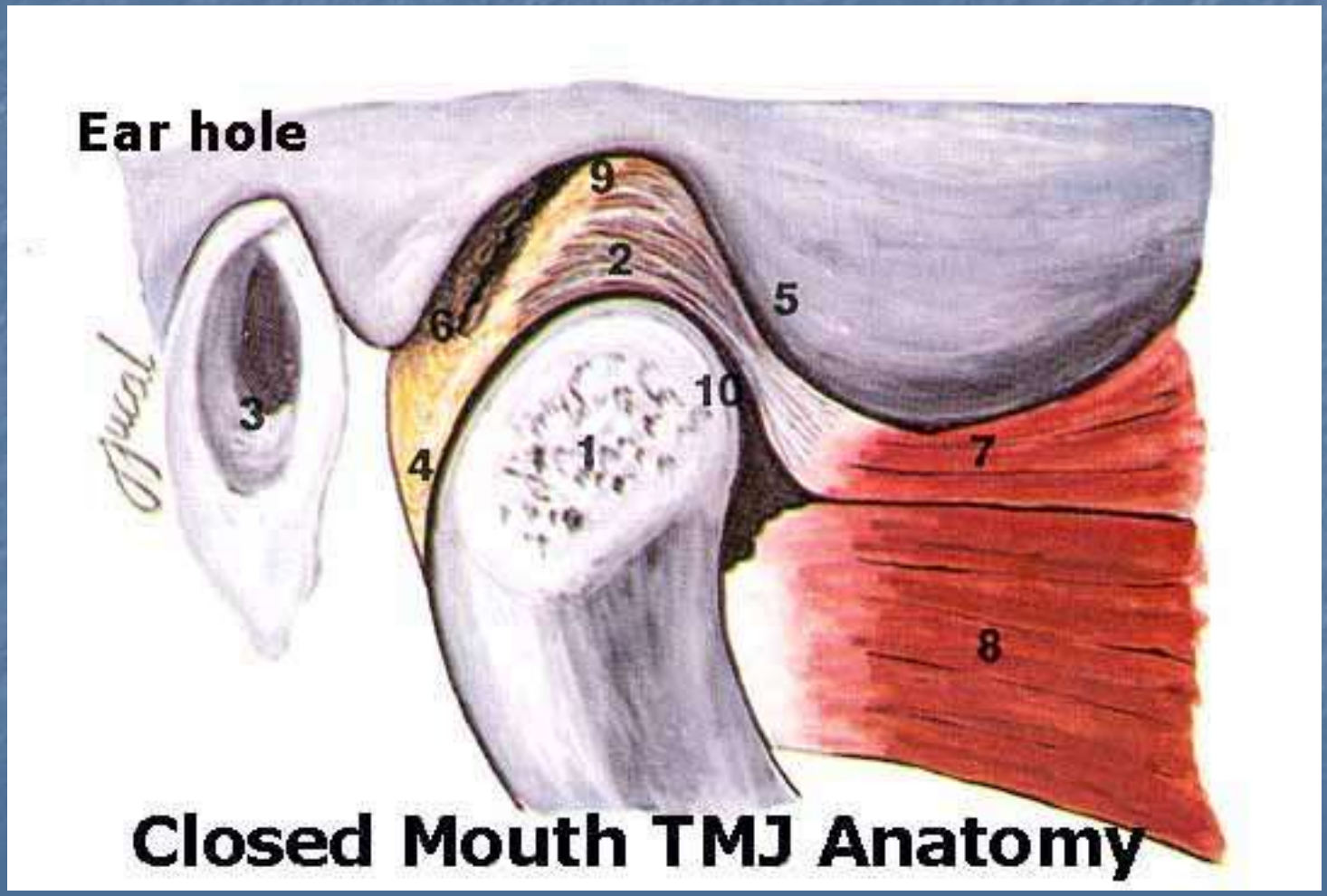


- **Changes of the joint surfaces:** Hypertrophy of cartilage, osteoarthrosis, osteoarthritis, anckylosis
- **Changes of the joint disc:** reformatted disc
- **Bilaminar zone** (the loose connective tissue in the space between the laminas): capsulitis, perforation, partial disc dislocation with reposition, total disc dislocation without reposition, disc dislocation with adhesias
- **Joint capsule:** capsulitis, vertical hypomobility, sagital hypo mobility, generalized fibrosis, posterior disc dislocation, sinoviitis, acute arthritis
- **Ligaments:** joint luxation, condylar hypermobility, vertical capsular hypermobility, posterior capsular hypermobility, clicking of the lateral/medial ligament, insertion tendopathy
- **Muscles:** myofascial pain, myositis, spasms, functional contraction of muscles, tendinitis, insertion thendopathy

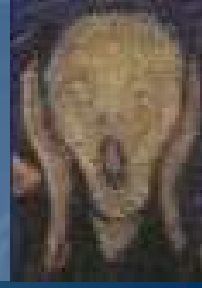
Anatomy of TMJ

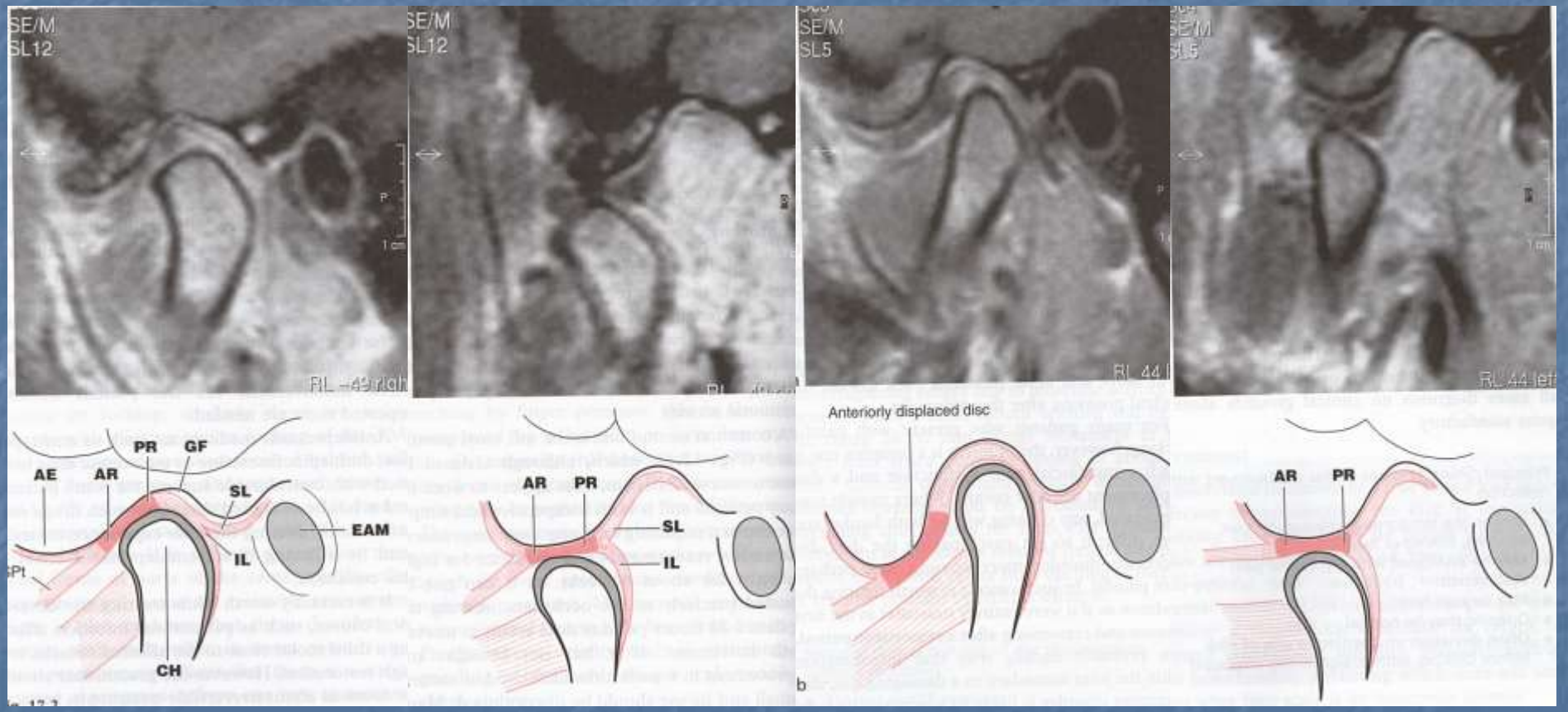





Ear hole
9
2
5
6
10
3
4
1
7
8
Closed Mouth TMJ Anatomy

TMJ in opening and closing of mouth





Normal closing | **Normal opening** | **Anterior disc dislocation** | **Return after closing**

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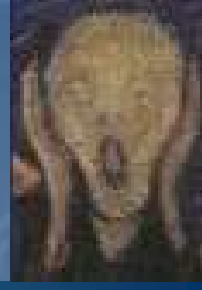
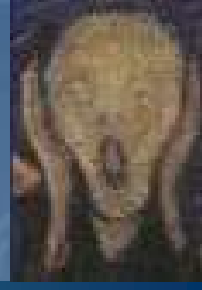
Clinical exam

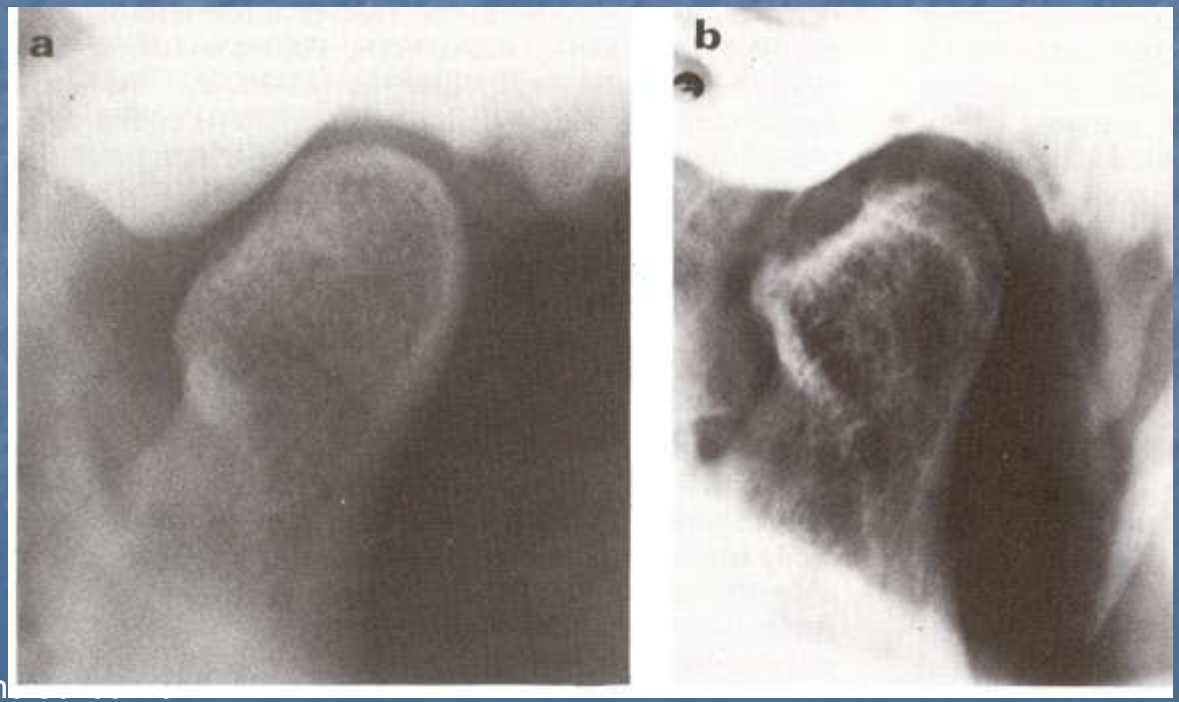


- In TMJ disease the pain apears from direct pressure on the disc; active and passive movement of the lower jawbone
- Pain is accompanied by cracking and crunching in the joint and disturbed and/or asymmetrical motility
- In arthritis pain is constant; worse when moving of the joint
- In a stronger joint pain reflex increased muscle tone makes it difficult to determine the true origin of the pain!

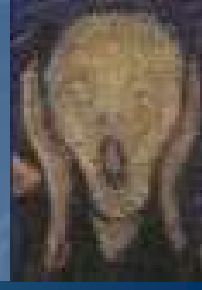
Changes in joint surface areas



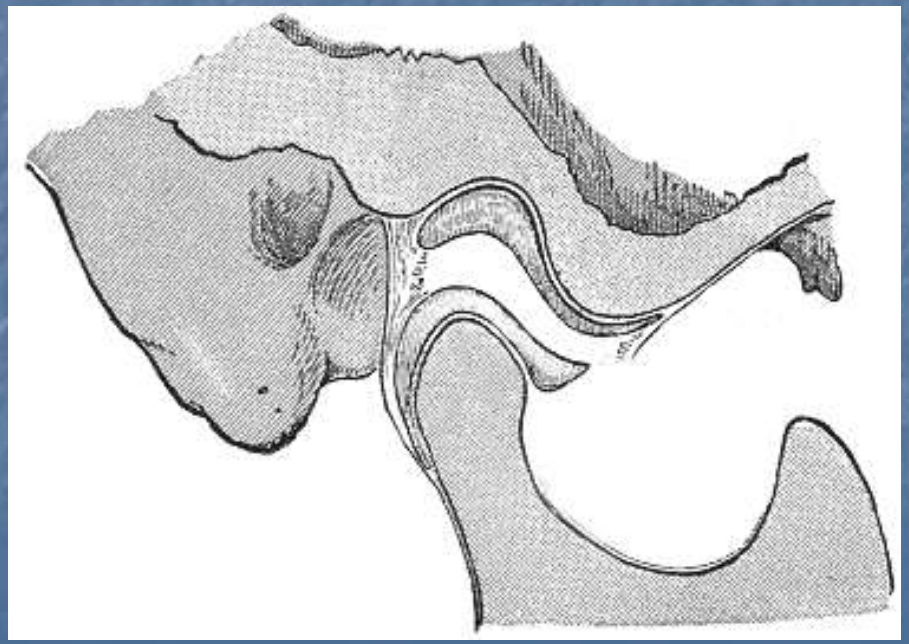
- Decreased joint space, surface erosion, osteofits, flattened condyls head
- Treatment is conservative (soft food, NSAID...), in rare cases surgery



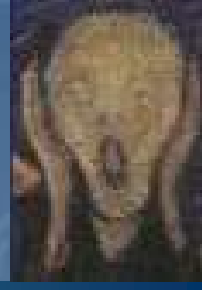
Bilaminar zone



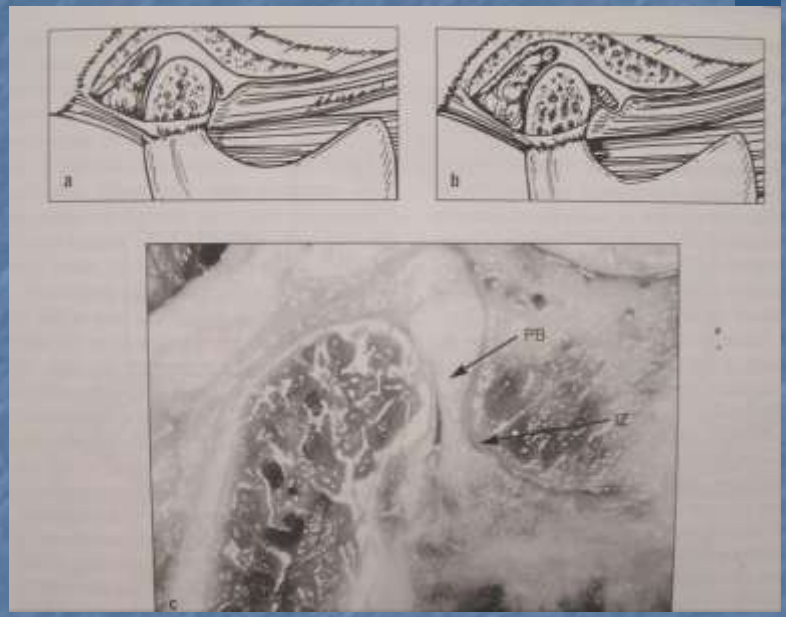
- Connective tissue on the back of a joint surface

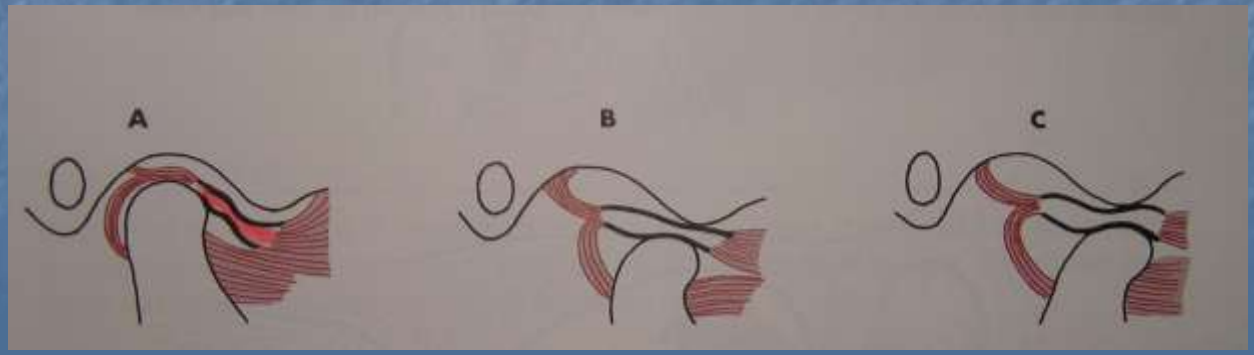


Anterior dislocation of disc with return

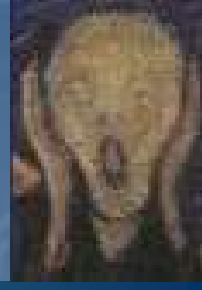


- The disc is located in the middle and front position during mouth closed
- When mouth opening condyle moves forward and is in contact with the intermedial part of disc
- With mouth closed, the condyle moves behind the disc



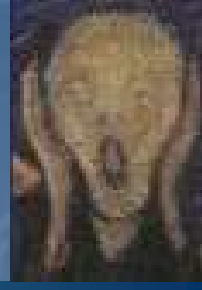


Clinical figure

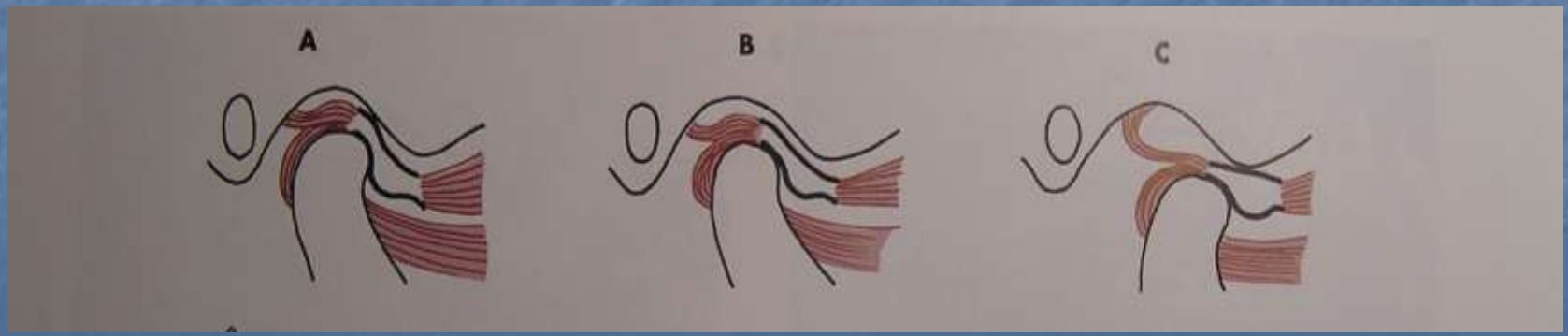


- Pain when opening the mouth and chewing
- Cracking in the TMJ at the opening and closing the mouth
- Maximal mouth opening was inhibited
- X-ray images may be normal
- MRI of joint shows the position of the disc

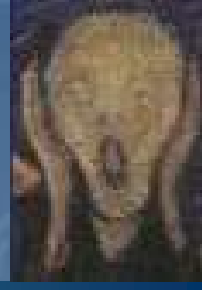
Anterior disc dislocation with no return



- Anterior disc dislocation
- Condyle can not do translation, therefore the maximal mouth opening is hindered
- Deviation of the lower jaw to the affected side is present

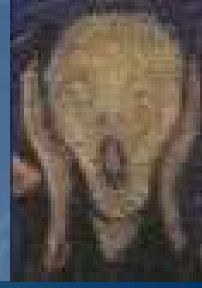


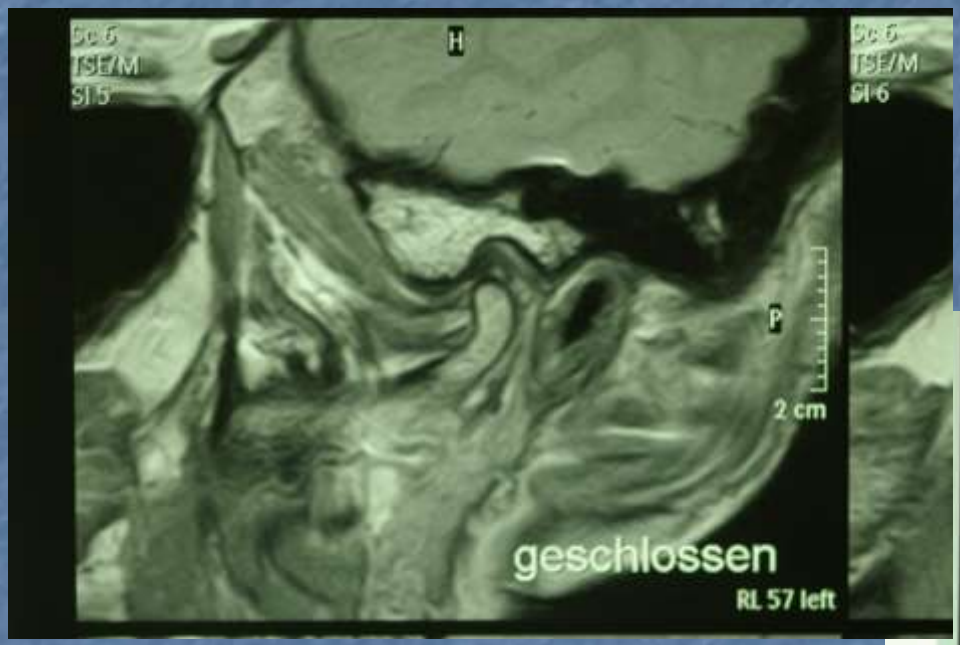
Clinical figure

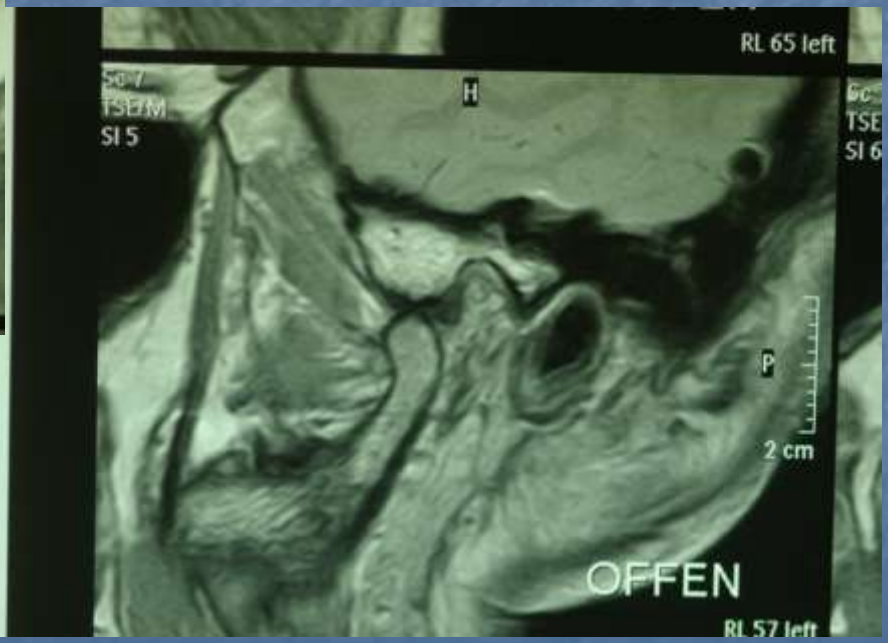


- The sudden inability of the full mouth opening (<35mm)
- Deviation of the lower jaw to the affected side
- Cracking and crunching
- Pain when attempting to complete the opening of the mouth
- X-rays may be normal
- MRI shows sustained dislocated disc

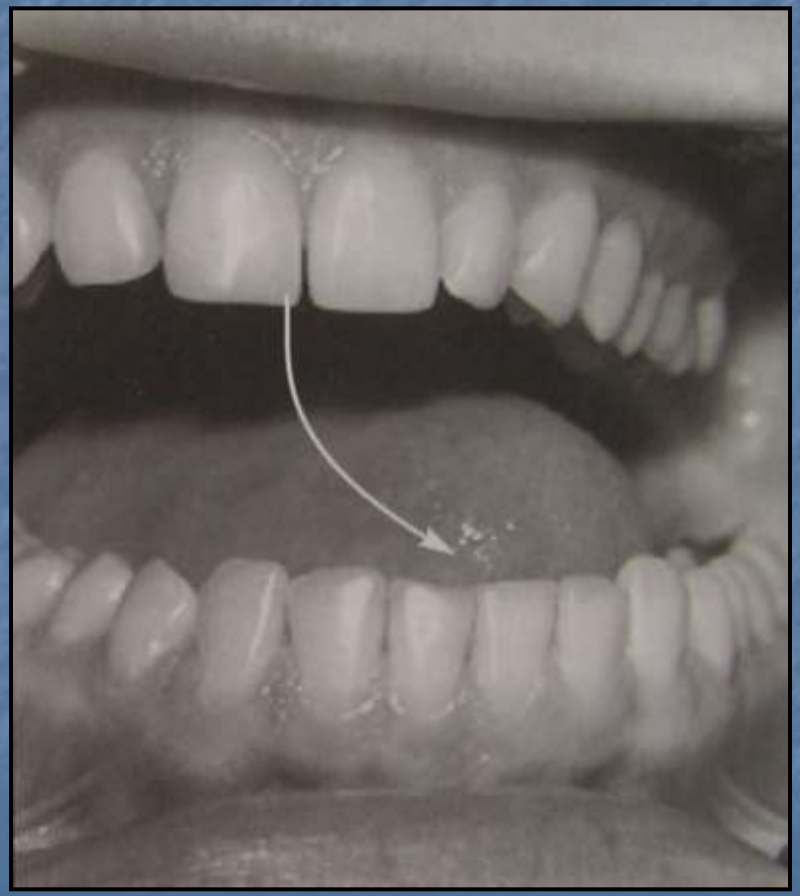
MRI of TMJ



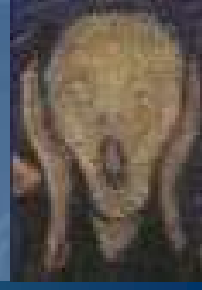

H
P
2 cm
geschlossen
RL 57 left


RL 65 left
H
P
2 cm
OFFEN
RL 57 left

Inability of mouth opening and deviations

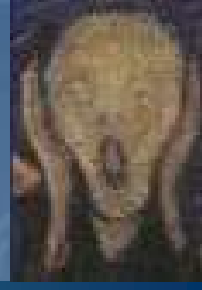


Treatment

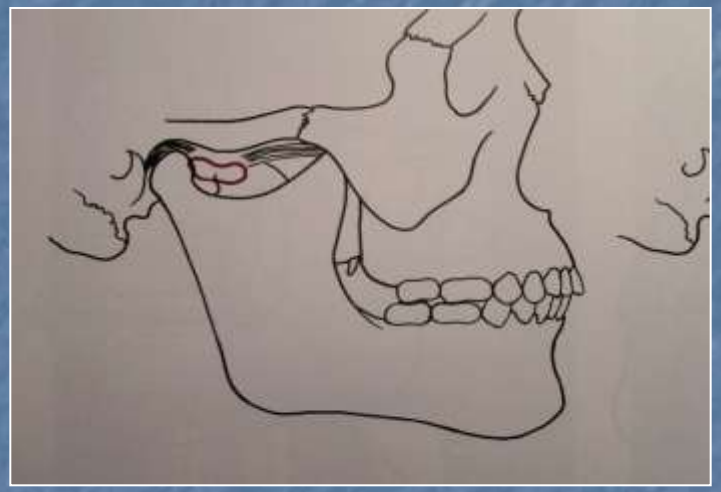


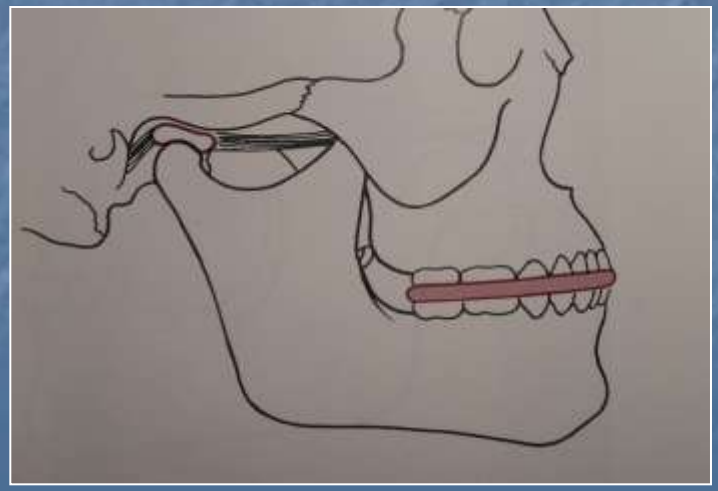
- **Restriction of mouth opening**
- **Changing harmful habits (bruxism)**
- **Soft, liquid foods**
- **Drugs:** analgesics, NSAIDs, muscle relaxants, antidepressants, limited use of corticosteroids, tranquilizers
- **Physical therapy:** muscle exercises, electrotherapy, ultrasound
- **Splints**
- **Adjustments / corrections occlusion:** prosthetic, orthodontic, ortognatic procedures
- **Surgery:** arthrocentesis, arthroscopy, arthrotomy (open surgical techniques)

Treatment

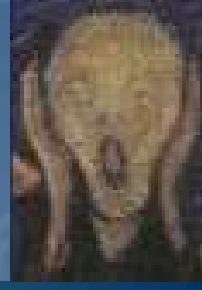


- Conservative – physiotherapy, soft diet, limited mouth opening, splints
- Prosthetics
- NSAID

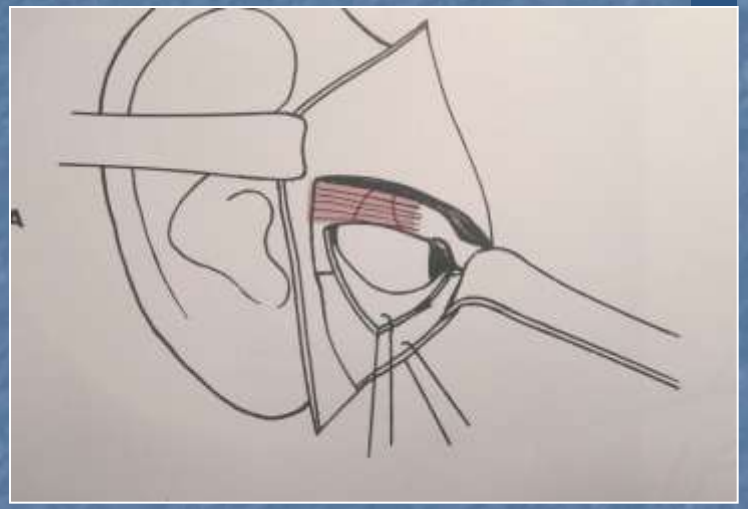


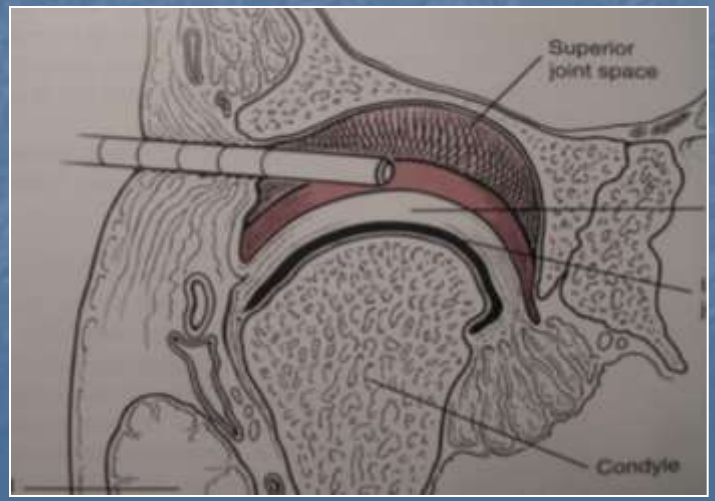


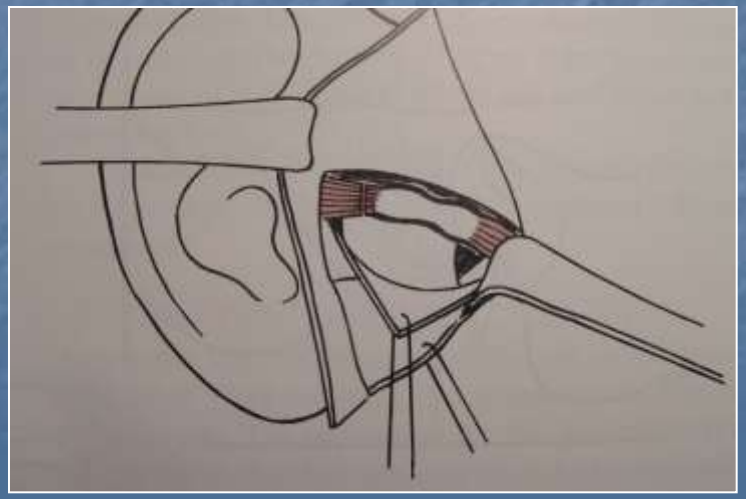
Surgery treatment



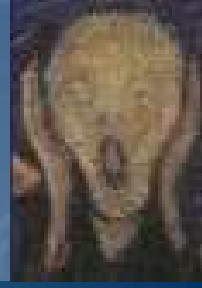
- Arthrocentesis
- Arthroscopy
- Disc reposition
- Disc reconstruction



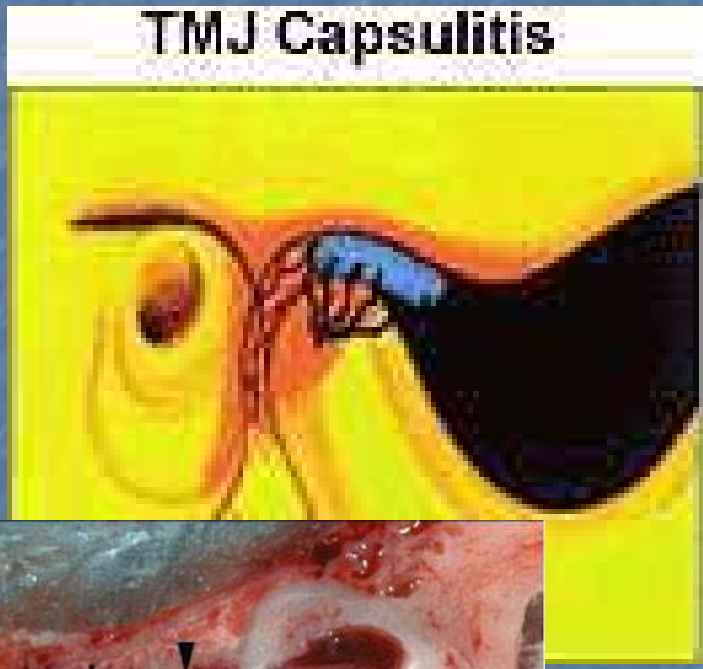


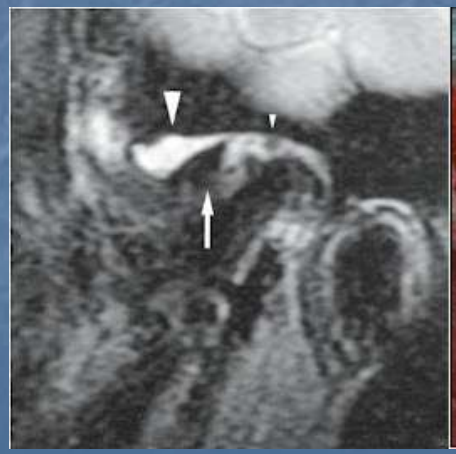


Diseases of the joint capsules

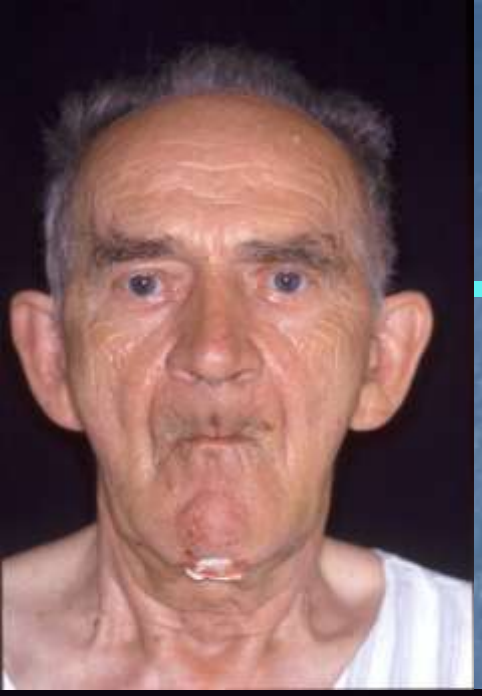


- Capsulitis
- Vertical /sagital hypomobility
- Generalized fibrosis
- Posterior dislocation
- Sinoviitis
- Acute arthritis

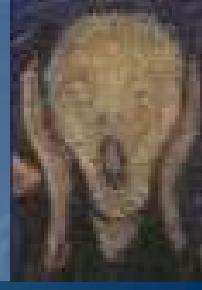




Surgery

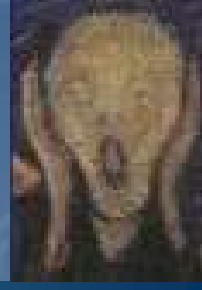


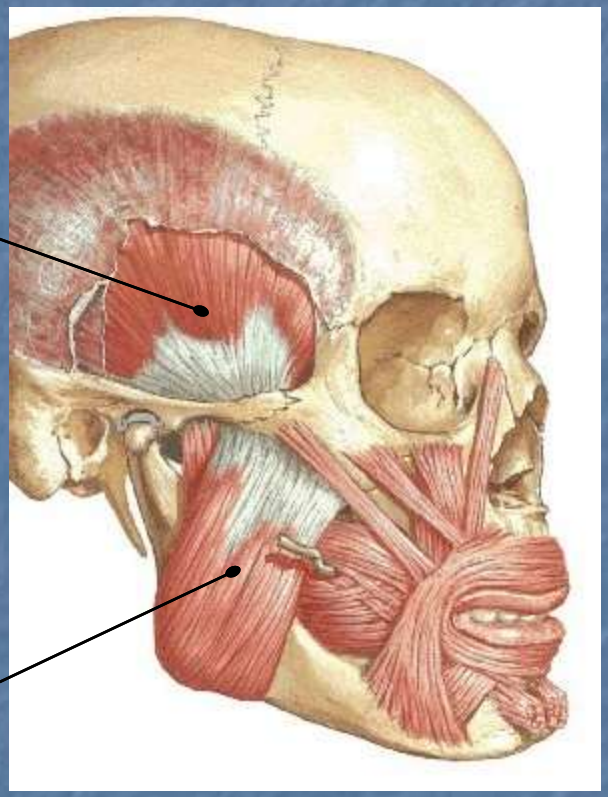
Facial muscle pain / TMJ syndrome dysfunction

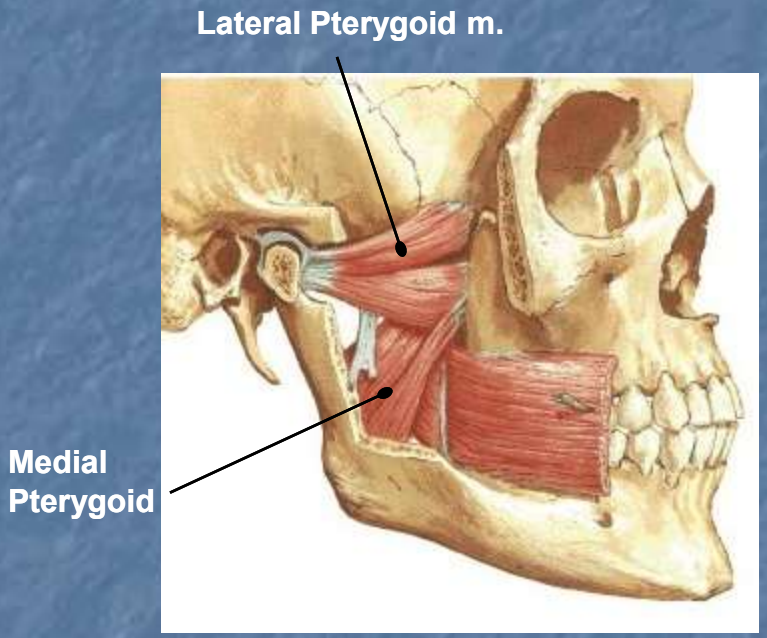


- The most common pain in the facial area, except of toothache
- It is a dull ache, followed by more severe exacerbations, especially pain located in the joint, the ear, extending into the temporal, occipital and neck area
- The pain is worse during chewing and speaking
- The patient may suffer from headaches, impaired hearing, tinnitus, pain in the neck, back or chest

Anatomy - muscles

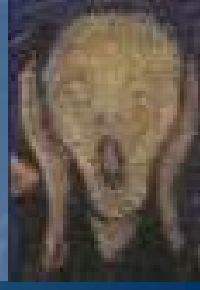






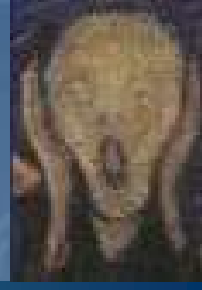
temporal, masseter, medial pterygoid and inferior head of lateral pterygoid mm. participate in the closing

Facial muscle pain / dysfunction syndrome of TMJ



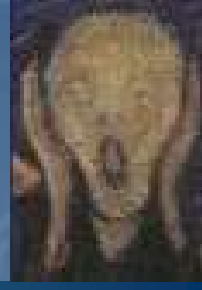
- **Bruxism, different habits, pressing jaw, chewing gum, biting nails, smoking pipes**
- **This is due to premature contacts of teeth, poor prosthetic care,…**
- **The intensity of pain affects the emotional and mental condition of the patient, more frequently affected younger women**

Diagnosis

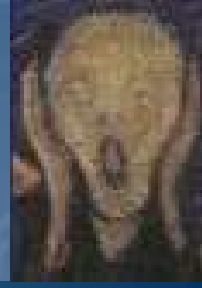


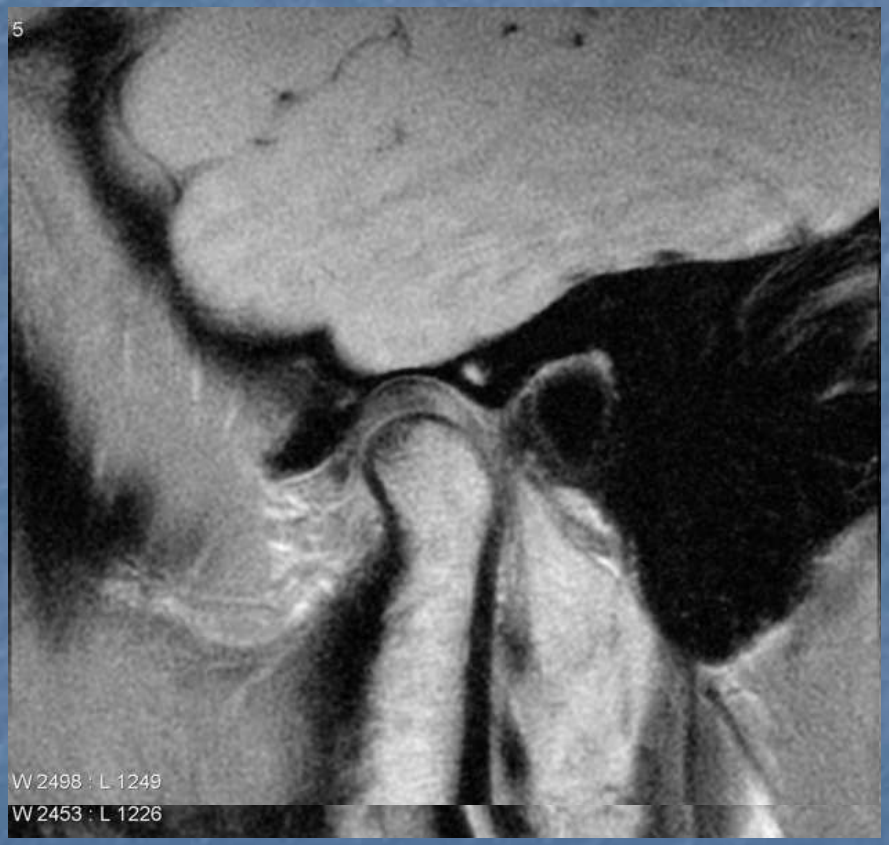
- Palpatory soreness of masseter muscles
- Passive and active motility is normally limited
- X-rays may be normal (Abnormal is at 40%)
- MRI normal
- CT normal

Abrasion of teeth

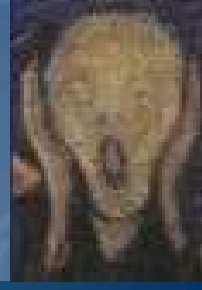


TMJ dysfunction syndrome

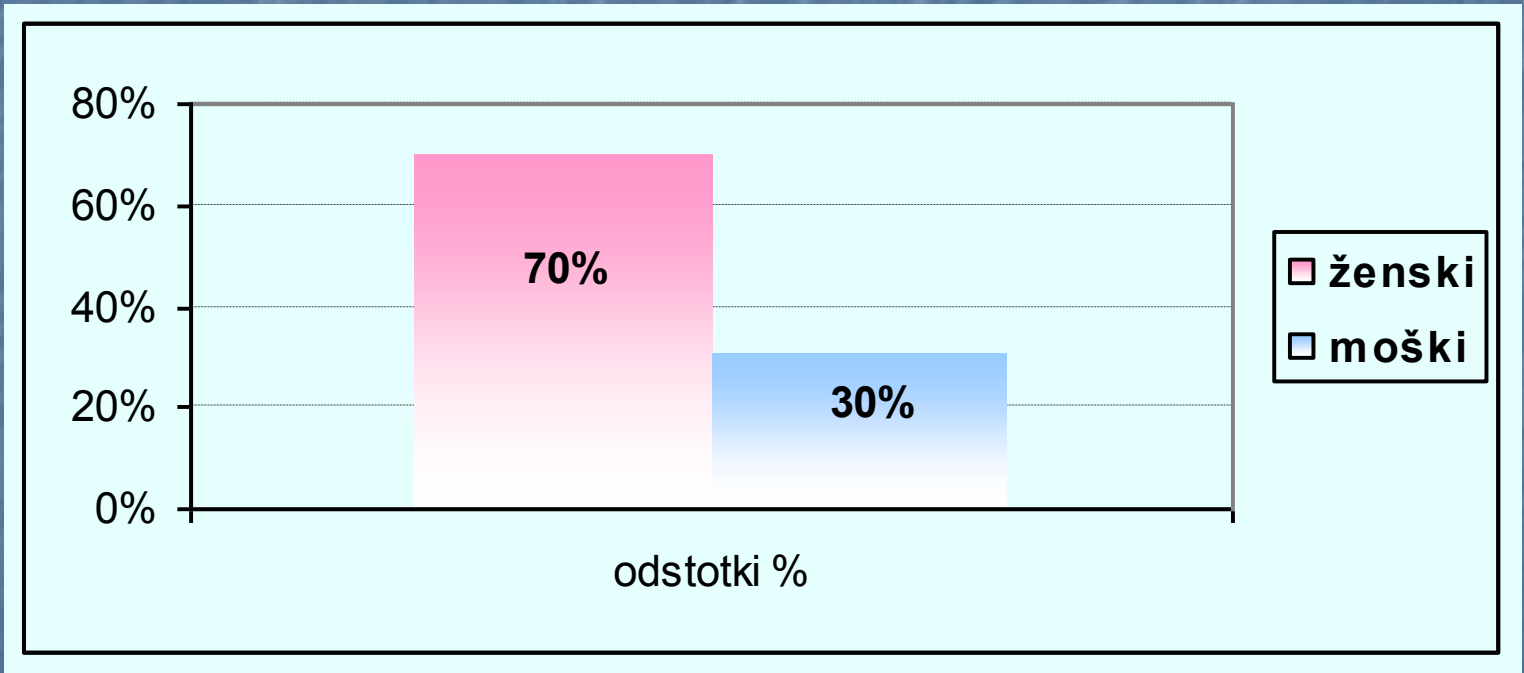


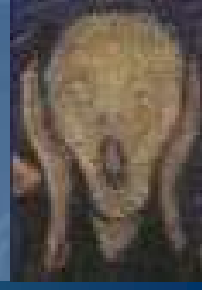


TMJ dysfunction syndrome

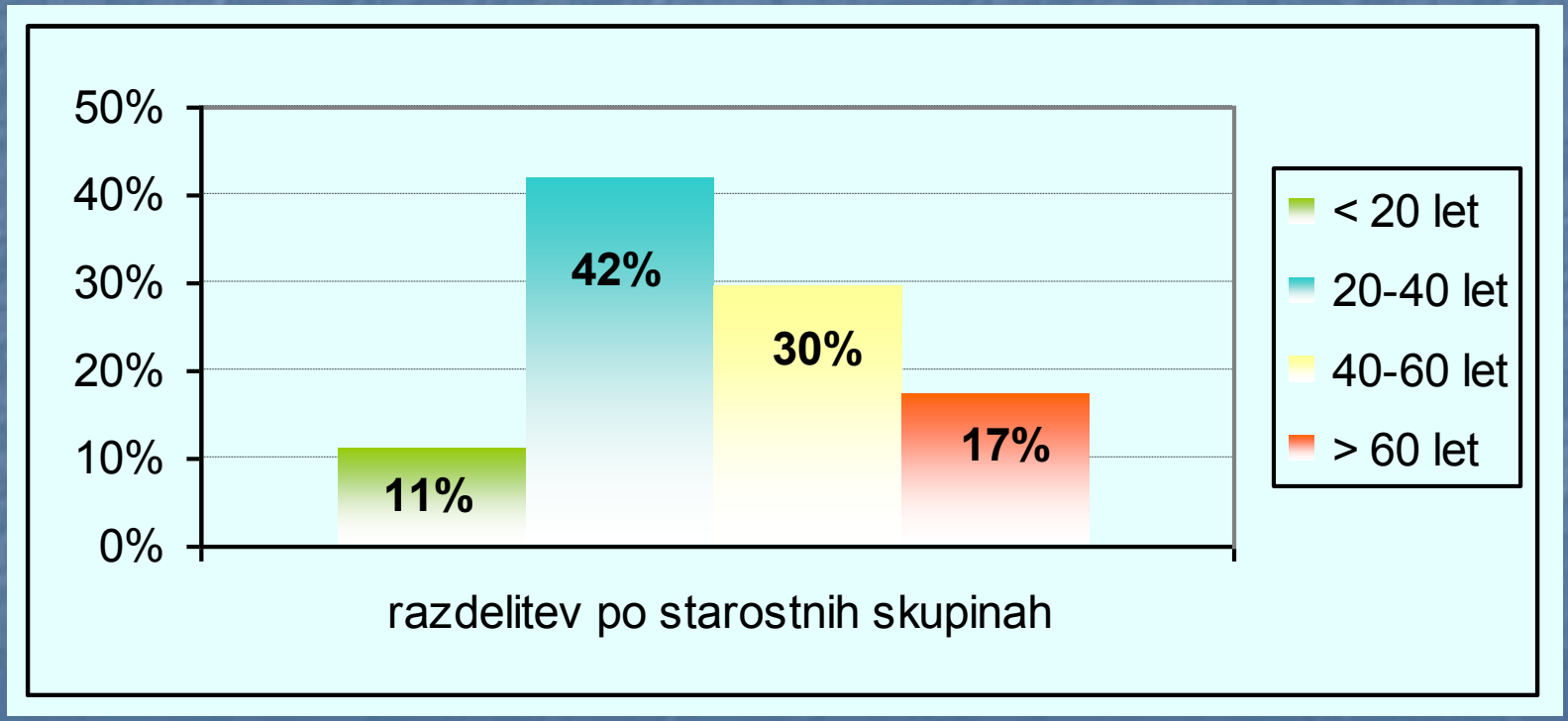


76 patients: 53 men and 23 women

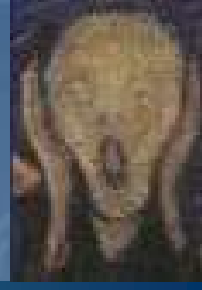


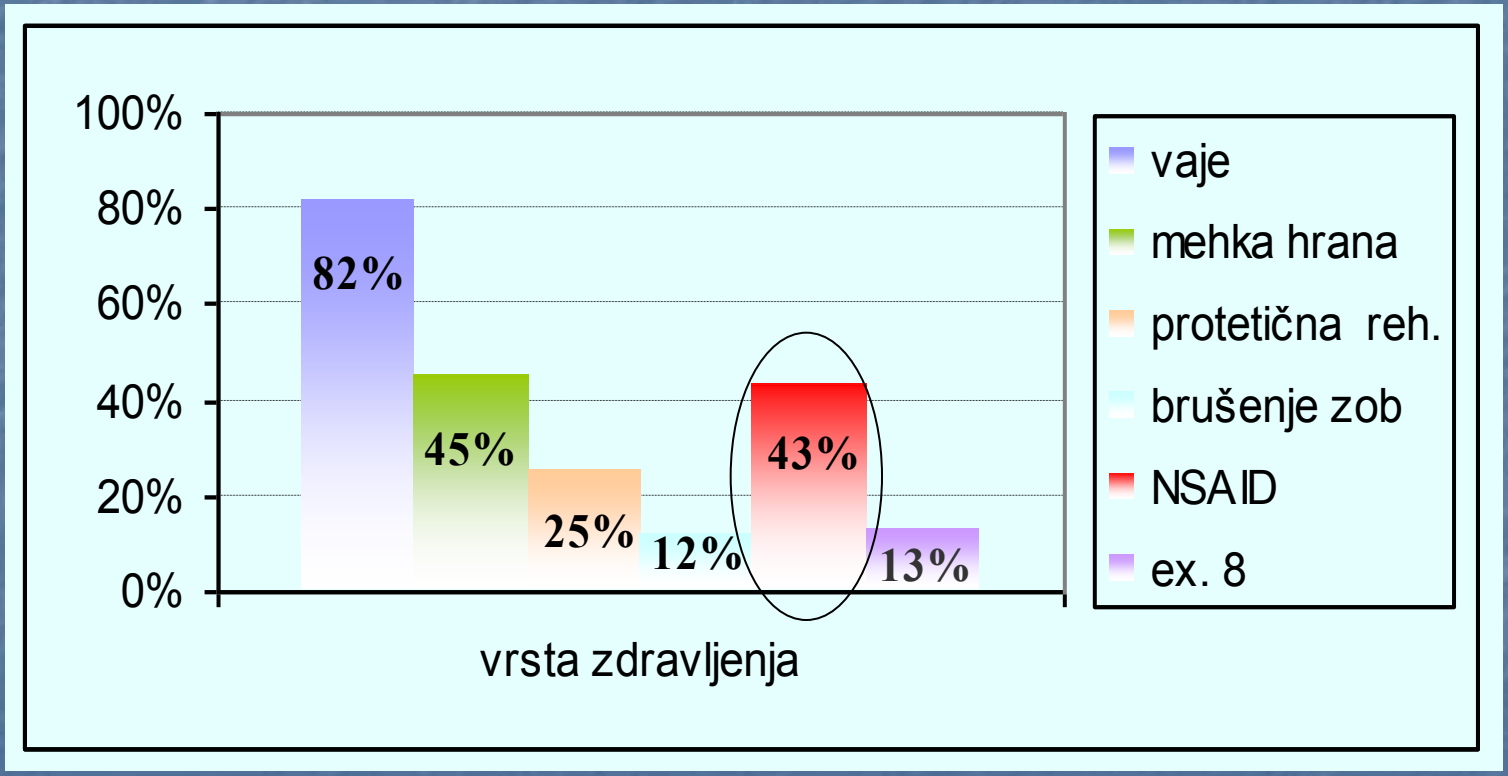


Most patients with TMJ dysfunction syndrome were in the age group between 20 and 40 years

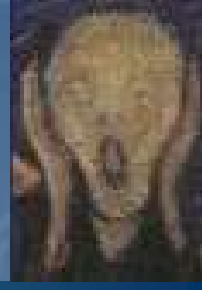


Types of treatment





Treatment



- Explaine to patient about the nature of illness
- Miofunctional exercises (Dechaum-Lenarts)
- Soft diet
- Prosthetic
- Biting splint
- Tricyclic antidepressants (amitriptyline - Amyzol) in low doses
- Injection of local anesthetic
- Injections of botulinum toxin

- NSAIDs are not effective for a long lasting treatment!


Xarelto


Greetings from
LJUBLJANA
SLOVENIJA