CERVICALGIA

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Medicina Física e Reabilitação – FMUSP e AACD

Acupuntura – FMUSP

Dor – IOT/FMUSP

Epidemiologia, Conceitos e Terminologia

- Cervicalgia / Dor cervical / Cervicobraquialgia / Neck pain;

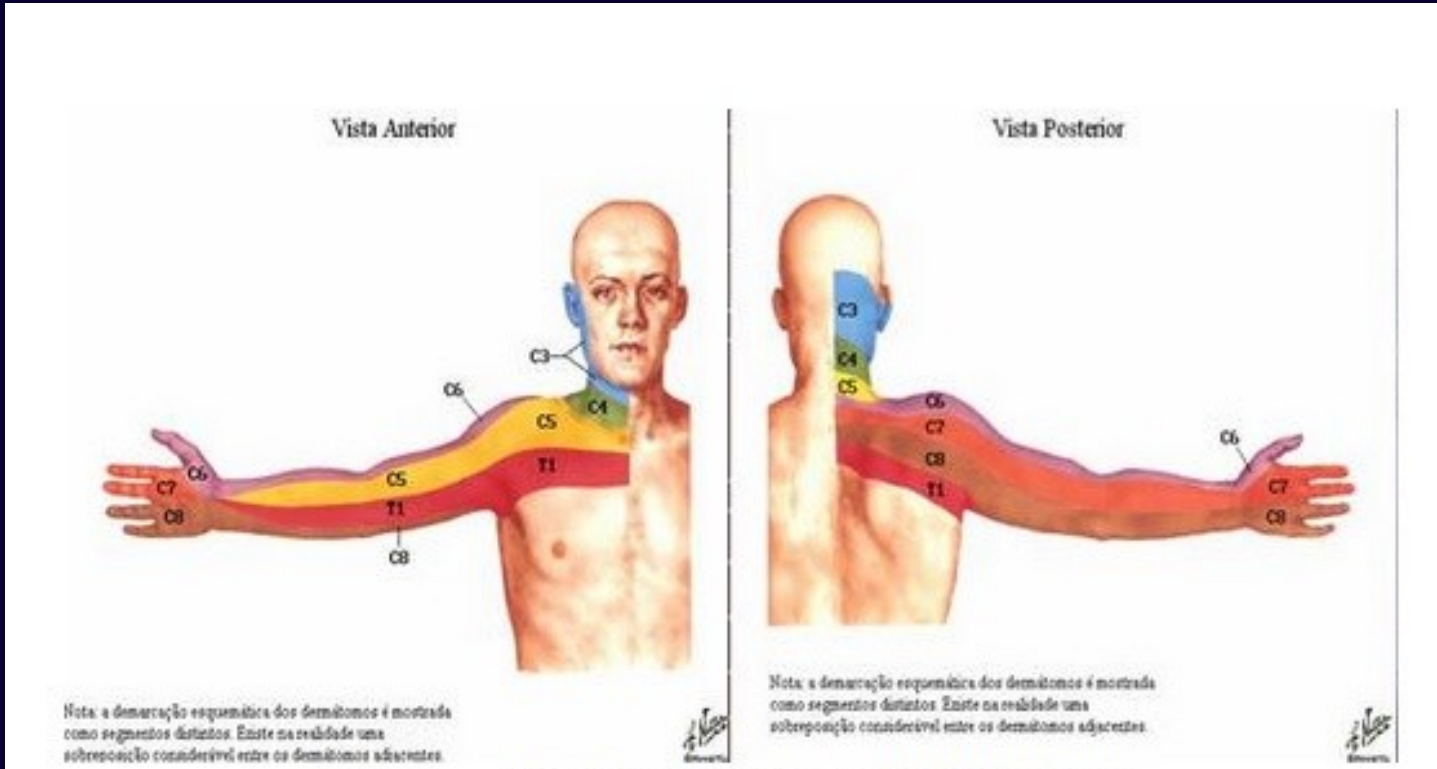

Figura – Mapa dos Dermátomos (NETTER, 1999)

EPIDEMIOLOGICAL SCIENCE

The world-wide burden of musculoskeletal diseases: a systematic analysis of the World Health Organization Burden of Diseases Database

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ABSTRACT

Background Musculoskeletal (MSK) diseases are expected to have a growing impact worldwide.

Objective To analyse the worldwide burden of MSK diseases from 2000 to 2015.

Methods Disability-adjusted life years (DALYs), which combines the years of life lost (YLLs) and the years lived with disability (YLDs), were extracted for 183 countries from the WHO Global Health Estimates Database. We analysed the median proportion of DALYS, YLLs and YLDs for MSK diseases (ICD-10: M00–M99) among the 23 WHO categories of diseases. Mixed models were built to assess temporal changes.

Results Worldwide, the total number of MSK DALYs increased significantly from 80,225,634.6 in 2000 to 107,885,832.6 in 2015 ($p < 0.001$), with the total

Key messages

What is already known about this subject?

- The burden of musculoskeletal (MSK) diseases is expected to increase worldwide

What does this study add?

- The burden of MSK diseases has increased significantly between 2000 and 2015, with MSK diseases being the second cause of years lived with disability (YLDs) worldwide
- The burden of MSK diseases is significantly higher in Europe than in all other continents.
- MSK burden is strongly correlated with countries' gross domestic product per capita

Table 4 World ranking of countries according to MSK DALYs, for the years 2000 and 2015 (by decreasing proportion)

Year 2000					Year 2015			
Rank	Country	DALYs n (%)	YLDs n (%)	YLLs n (%)	Country	DALYs n (%)	YLDs n (%)	YLLs n (%)
1	Australia	415.9 (8.8)	402.5 (19.9)	13.4 (0.5)	Australia	526.8 (9.8)	509.8 (19.6)	17 (0.6)
2	Canada	635.6 (8.4)	612.6 (19.9)	23 (0.5)	Canada	821.6 (9.7)	795.6 (21.0)	25.9 (0.5)
3	Netherlands	345.7 (7.9)	332.4 (20.7)	13.3 (0.5)	United Arab Emirates	142.6 (9.6)	141.3 (16.3)	1.3 (0.2)
4	Switzerland	143.7 (7.6)	138.4 (18.7)	5.3 (0.5)	Bahrain	21.4 (9.2)	20.9 (16.4)	0.5 (0.5)
5	New Zealand	72.7 (7.5)	69.2 (18.0)	3.5 (0.6)	Switzerland	171.6 (8.9)	165.6 (19.6)	6.0 (0.6)
6	Norway	95.6 (7.5)	91.7 (19.4)	3.9 (0.5)	Norway	107.5 (8.8)	104.2 (19.6)	3.3 (0.5)
7	Italy	1198.9 (7.4)	1169.4 (19.4)	29.5 (0.3)	New Zealand	93.3 (8.8)	89.5 (19.0)	3.8 (0.6)
8	Iceland	4.4 (7.3)	4.3 (17.1)	0.1 (0.3)	Netherlands	380.9 (8.8)	367.8 (20.6)	13.1 (0.5)
9	United Arab Emirates	37.9 (7.1)	37.4 (13.6)	0.5 (0.2)	Denmark	130.5 (8.7)	125.5 (21.0)	5.0 (0.6)
10	Malta	6.8 (7.0)	6.5 (17.5)	0.3 (0.5)	Iceland	5.6 (8.6)	5.5 (18.1)	0.1 (0.4)
…	…	…	…	…	…	…	…	…
173	Mozambique	110.4 (0.5)	103.3 (5.3)	7.2 (0)	Nigeria	1530.0 (1.0)	1427.7 (8.3)	102.3 (0.1)
174	Niger	74.8 (0.5)	72.8 (7.1)	2.0 (0)	Central African Republic	43.4 (1.0)	41.4 (7.9)	2.1 (0.1)
175	Zambia	66.1 (0.5)	62.1 (6.2)	3.9 (0)	Burundi	70.1 (1.0)	66.1 (7.8)	4.0 (0.1)
176	Angola	109.1 (0.5)	101.4 (6.6)	7.7 (0)	Niger	126.8 (0.9)	123.5 (7.6)	3.3 (0)
177	Malawi	66.3 (0.5)	64.1 (5.6)	2.2 (0)	South Sudan	81.7 (0.9)	77.9 (6.1)	3.8 (0)
178	Rwanda	44.9 (0.5)	42.1 (4.8)	2.9 (0)	Mozambique	176.1 (0.9)	165.3 (6.1)	10.8 (0.1)
179	Mali	67.3 (0.5)	64.3 (5.7)	2.9 (0)	Sierra Leone	52.3 (0.8)	48.1 (8.6)	4.2 (0.1)
180	Uganda	126.7 (0.4)	119.2 (5.2)	7.6 (0)	Mali	108.5 (0.8)	102.6 (6.6)	5.9 (0)
181	Sierra Leone	31.4 (0.4)	28.5 (6.7)	2.9 (0)	Angola	190.9 (0.7)	171.9 (7.3)	19 (0.1)
182	Eritrea	17.1 (0.4)	16.2 (2.8)	0.8 (0)	Chad	97.3 (0.7)	91.9 (6.8)	5.4 (0)
183	Somalia	42.0 (0.4)	40.0 (5.1)	2.0 (0)	Somalia	61.2 (0.6)	58.1 (5.2)	3.1 (0)

DALYs, disability-adjusted life years;MSK, musculoskeletal; YLDs, years lost due to disability; YLLs, years of life lost.

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Global, regional, and national burden of neck pain in the general population, 1990-2017: systematic analysis of the Global Burden of Disease Study 2017

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ABSTRACT

OBJECTIVE

To use data from the Global Burden of Disease Study between 1990 and 2017 to report the rates and trends of point prevalence, annual incidence, and years lived with disability for neck pain in the general population of 195 countries.

DESIGN

Systematic analysis.

DATA SOURCE

Global Burden of Diseases, Injuries, and Risk Factors Study 2017.

MAIN OUTCOME MEASURES

Numbers and age standardised rates per 100000 population of neck pain point prevalence, annual incidence, and years lived with disability were compared across regions and countries by age, sex, and sociodemographic index. Estimates were reported with uncertainty intervals.

RESULTS

In 2017, 222.5 million (95% uncertainty interval 175.5 to 274.1) people had prevalent neck pain, corresponding to an age standardised point prevalence of 3551.1 (3551.1 to 4372.9) per 100000 population. Between 1990 and 2017, the number of prevalent cases increased by 91.0% (91.0% to 91.0%), while the age standardised point prevalence increased by 0.0% (0.0% to 0.0%); this was not significant at the 0.05 level. Prevalence increased with age up to 70-74 years and then decreased. Norway (6151.2 (95% uncertainty interval 5382.3 to 6959.8)), Finland (5750.3 (5058.4 to 6518.3)), and Denmark (5316 (4674 to 6030.1)) had the three highest age standardised point prevalence estimates in 2017. The largest increases in age standardised point prevalence estimates from 1990 to 2017 were in the United Kingdom (14.6% (10.6% to 18.8%)), Sweden (10.4% (6.0% to 15.4%)), and Kuwait (2.6% (2.0% to 3.2%)). In general, positive associations, but with fluctuations, were found between age standardised years lived with disability for neck pain and sociodemographic index at the global level and for all Global Burden of Disease regions, suggesting the burden is higher at higher sociodemographic indices.

CONCLUSIONS

Neck pain is a serious public health problem in the general population, with the highest burden in

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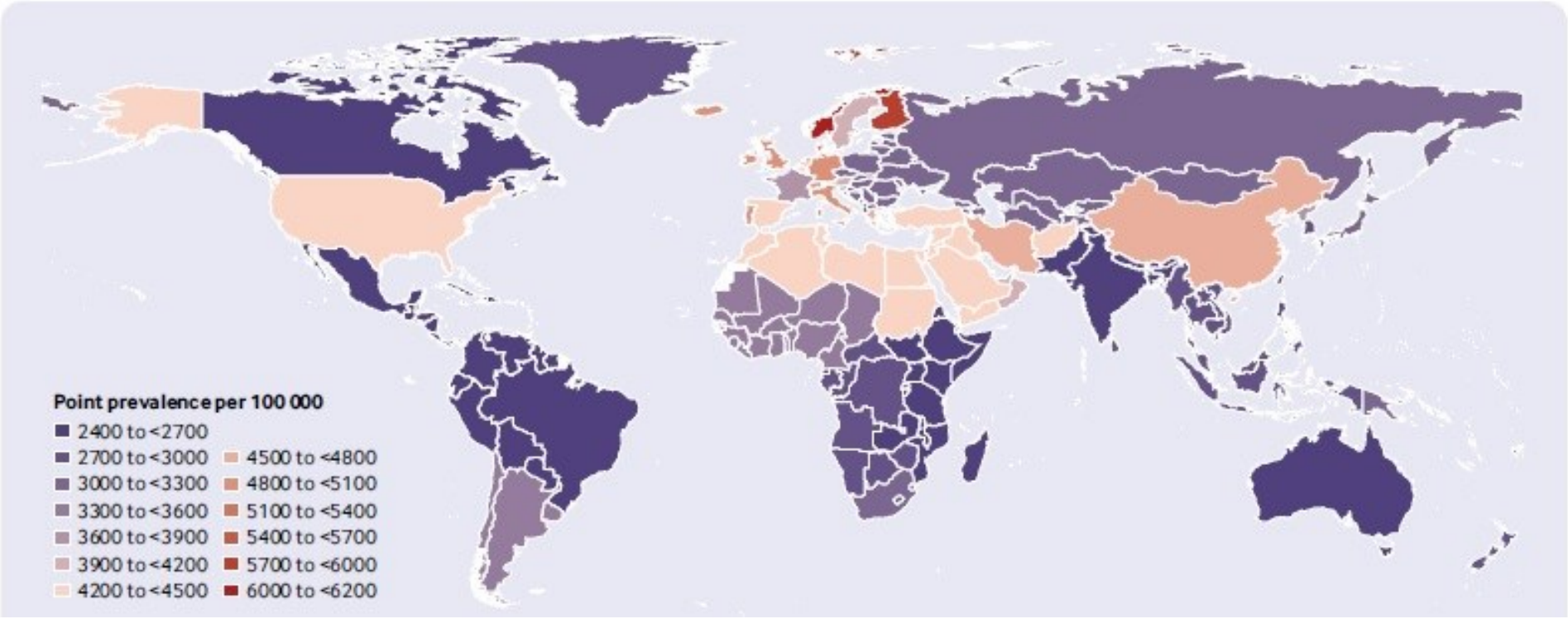
Age standardised point prevalence of neck pain per 100 000 population in 2017, by country.



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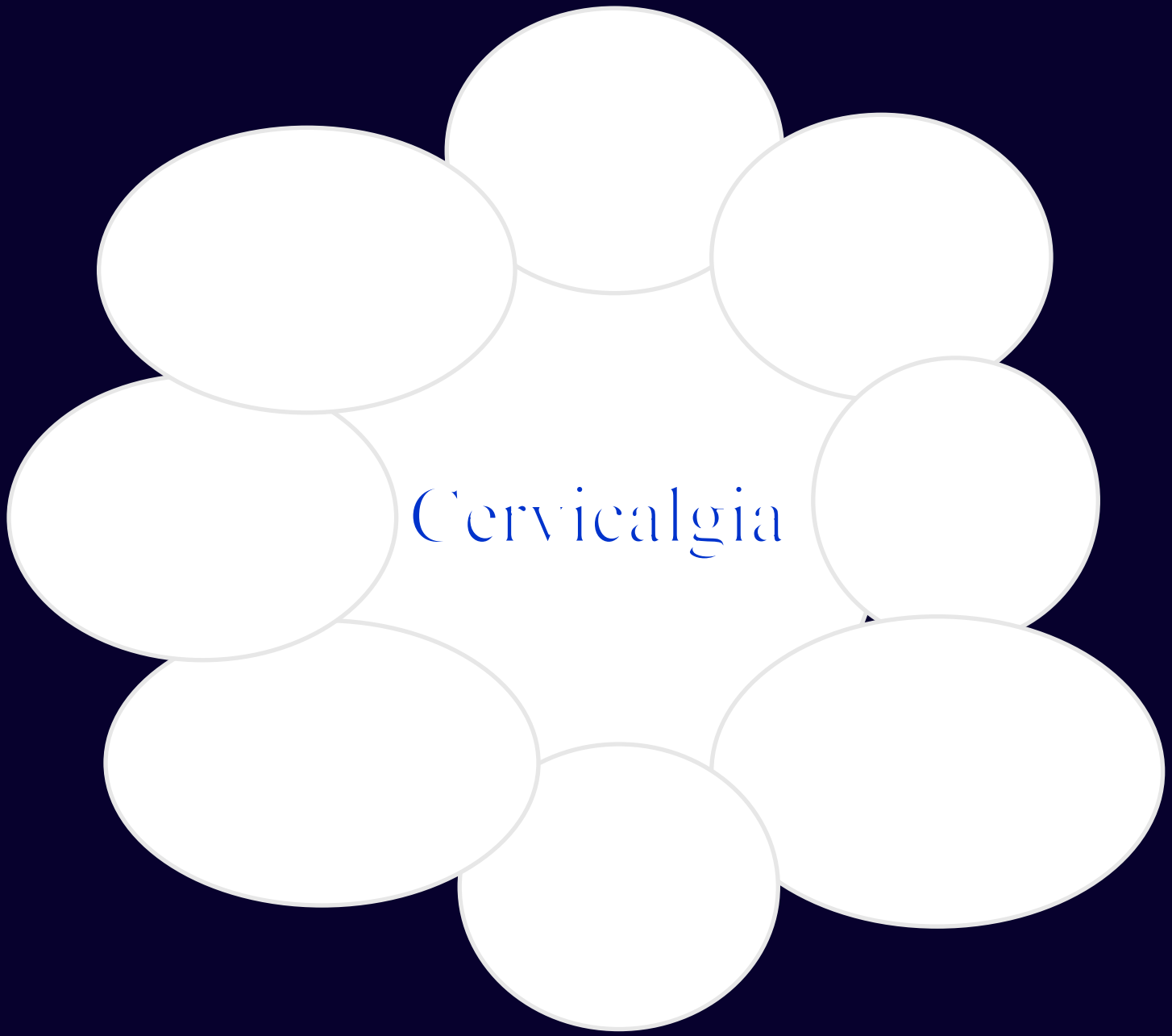
Epidemiologia, Conceitos e Terminologia

- *Cervicalgia afeta 30–50% da população geral anualmente;*
- *15% da população geral irá apresentar cervicalgia crônica (>3 meses) em algum momento da vida;*
- *11–14% dos trabalhadores irão apresentar limitação no trabalho anualmente;*
- *Fatores de risco: trabalho repetitivo, períodos prolongados na postura em flexão, alto nível de estresse psicológico, tabagismo e lesão prévia de ombro e pescoço.*
- **12% no sexo ♀ e 9% nos ♂;**
- *População de risco: idoso, trabalhadores construção civil, bancários, etc.*
- **Supervalorização da Espondilose Cervical versus tipo de tratamento;**
- *Impacto econômico versus tipo de tratamento;*

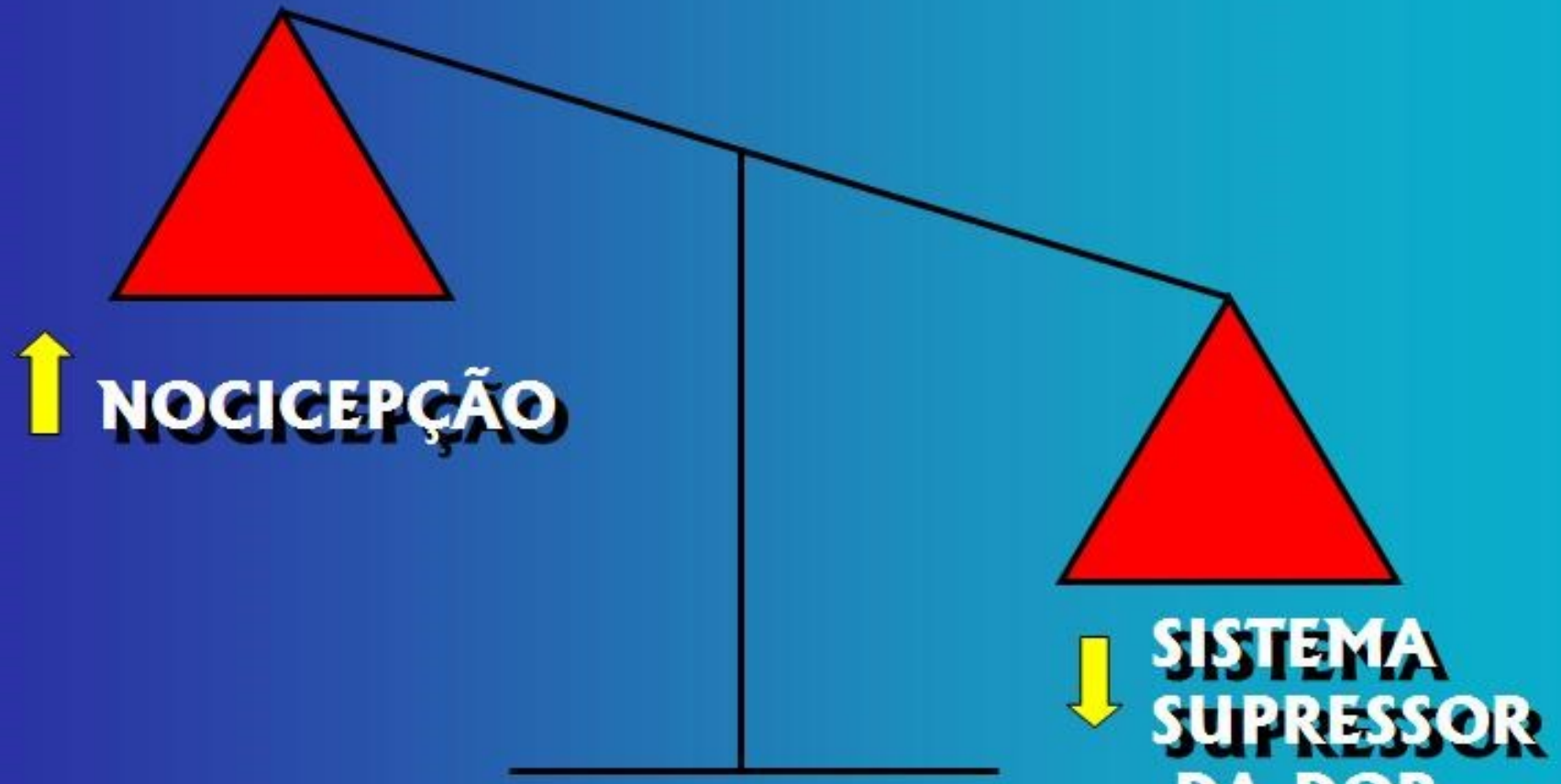
Fatores associados



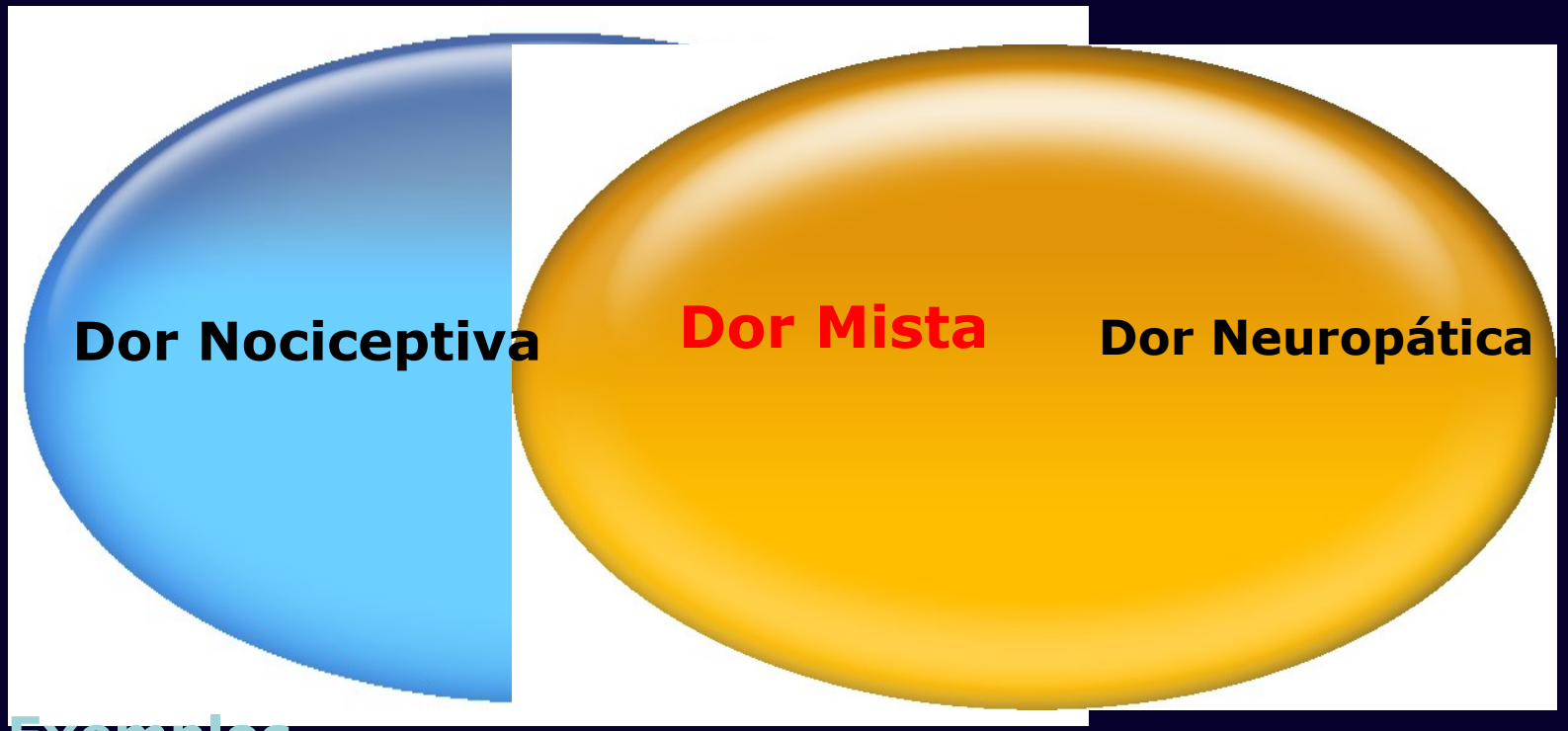
Características que diferenciam dor aguda de crônica

Acute pain	Chronic pain
Elicited by immediate tissue injury	Perpetuates after tissue injury has resolved or healed
Serves as a â€œwarningâ€ of tissue damage or injury; protective of further injury	Serves no useful function
Activates nociceptors	Involves central sensitization and permanent structural abnormalities of the central nervous system
Activates sympathetic nervous system	Physiologic adaptation
Limited duration	Prolonged duration
Remits with resolution and healing of injury	Persists long after resolution and healing of injury
Directly associated with injury, postoperative conditions, and disease processes	Remotely associated with injury, surgical procedures, and disease processes
Responsive to treatment	Recalcitrant to treatment

FISIOPATOLOGIA DA DOR



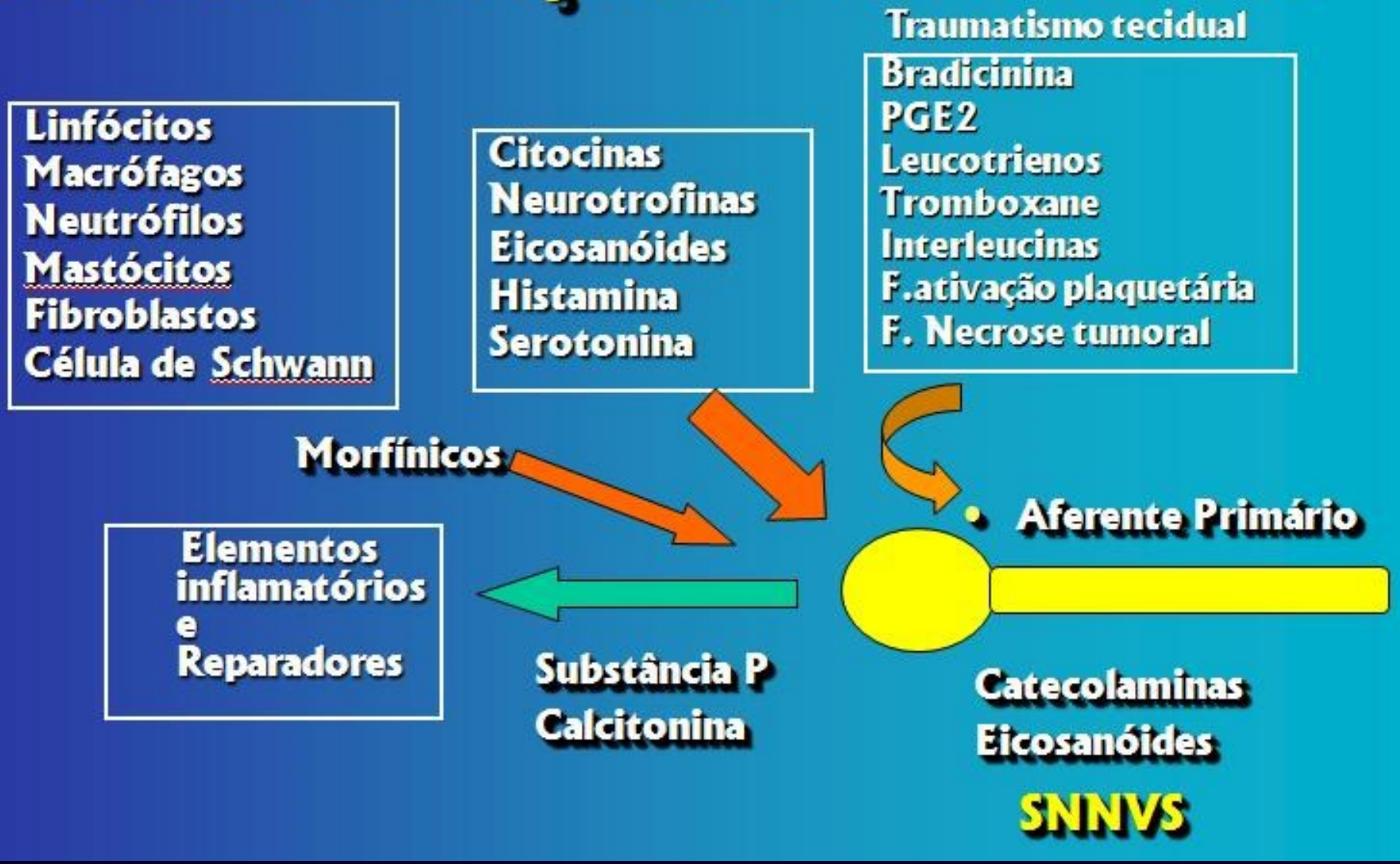
Coexistência de Dor Nociceptiva e Neuropática



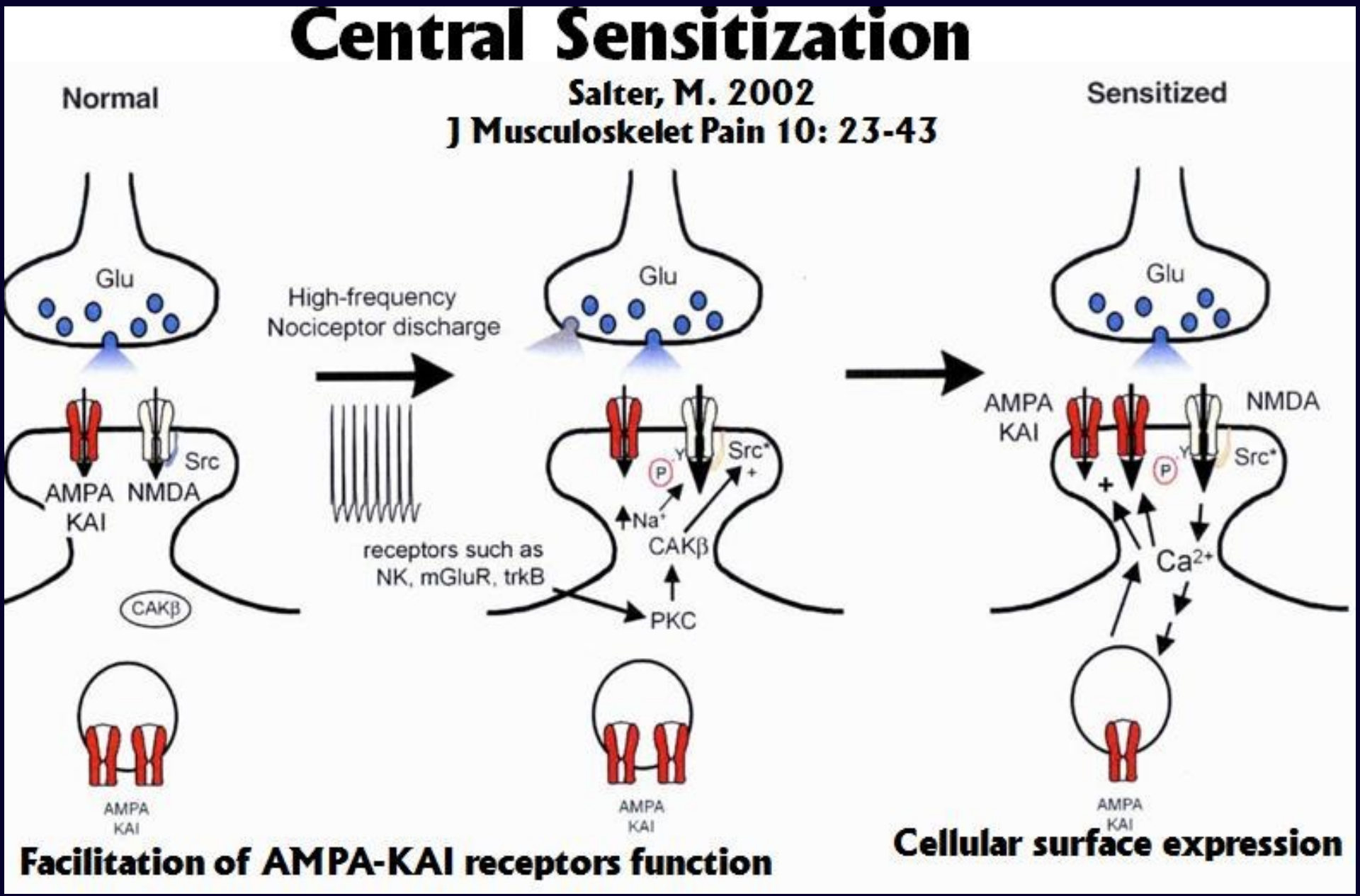
Exemplos

- Cervicobraquioalgia ou Lombociatalgia
- Radiculopatias
- Dor Oncológica
- Neuropatias Compressivas

SENSIBILIZAÇÃO PERIFÉRICA



Central Sensitization



Aumento da prevalência

- Novos hábitos de vida: sedentarismo, estresse;
- Modificações do meio ambiente: ruído;
- Prolongamento da sobrevida em geral, incluindo-se as doenças naturalmente fatais;
- Aumento prevalência das doenças crônicas;
- Decréscimo da tolerância ao sofrimento do homem moderno;
- Brasil semelhante aos países industrializados;

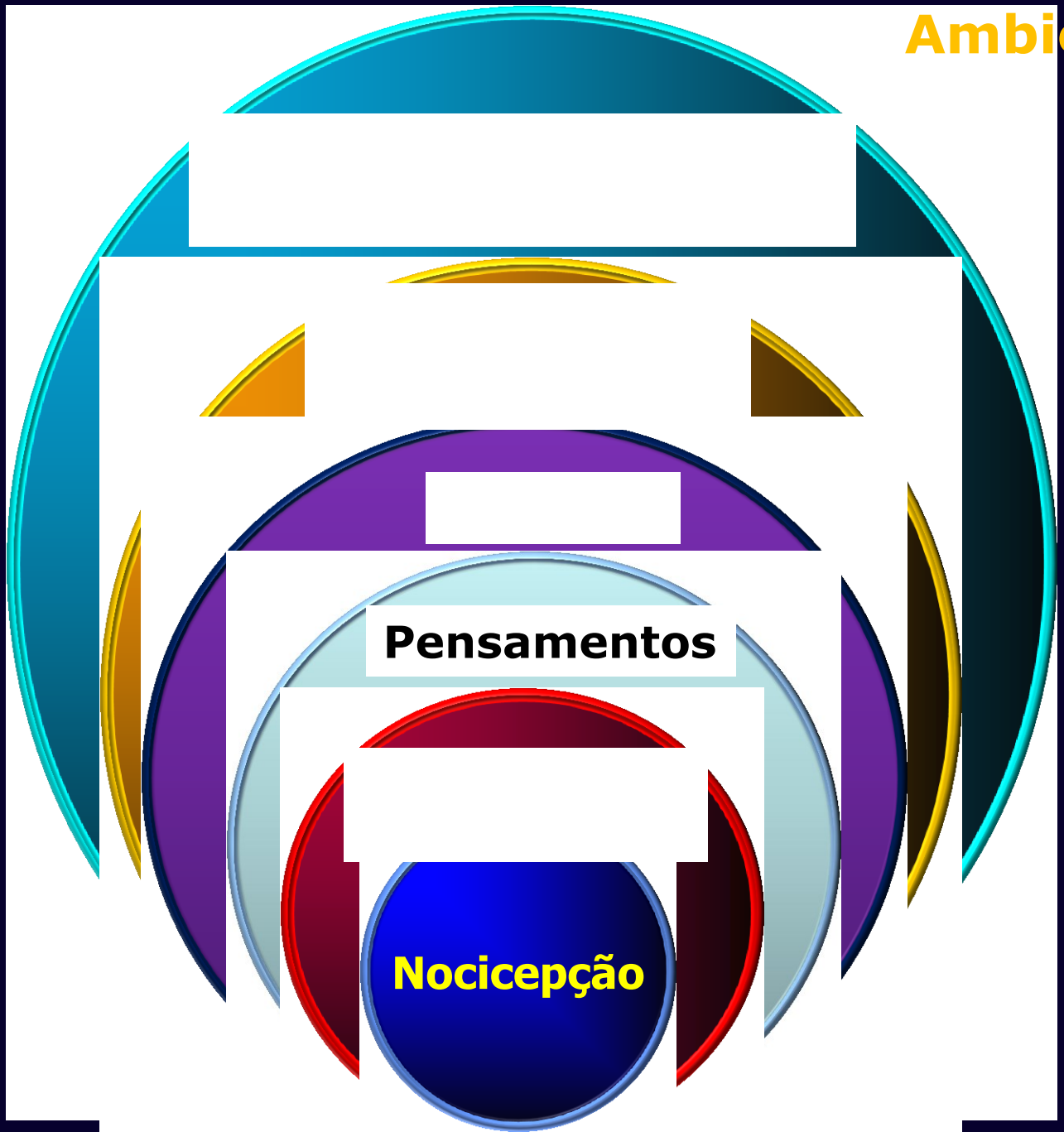
Grave problema de saúde pública

ANSIEDADE

DEPRESSÃO

OSTILIDADE

Ambientes



Apresentação da Dor

- Ingestão de drogas
- Problemas conjugais
- Desgostos, perdas pessoais
- Desajustamento social
- Recompensas pessoais
- Recompensas financeiras
- Depressão
- Anormalidades da personalidade
- Problemas familiares

+

Avaliação clínica

Anamnese Ocupacional

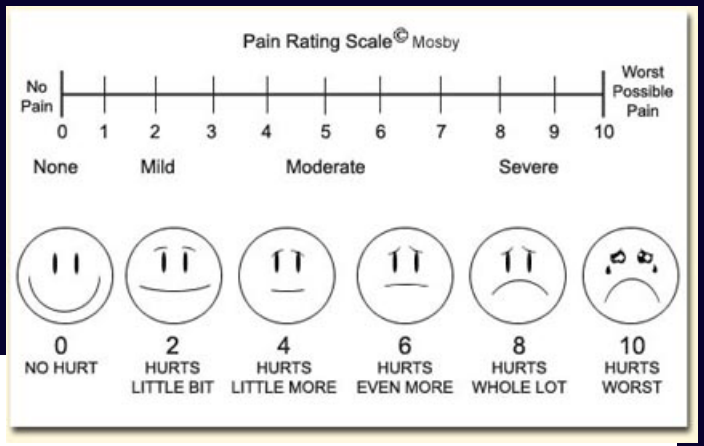
Anamnese Ocupacional

Turno de trabalho: fixo / rodiziante / diurno /noturno	Horas extras ? Nº por sem
Exigência de produção?	Pressão constante da chefia?
Pausas? Como?	Rodízio de atividades? Periodicidade;
Controle sobre as pausas?	Ritmo acima do limite?
Controle sobre o ritmo?	Desgaste emocional?
Alto grau de responsabilidade ?	Alto grau de atenção ?
Várias tarefas na jornada ?	Possibilidade de aprender ?
Influência no planejamento ?	Autonomia?
Satisfação e realização pessoal no trabalho ?	Pode conversar com colegas durante trabalho?

Avaliação Ergonômica

Domains of Chronic Pain

Avaliação Funcional e Complementar



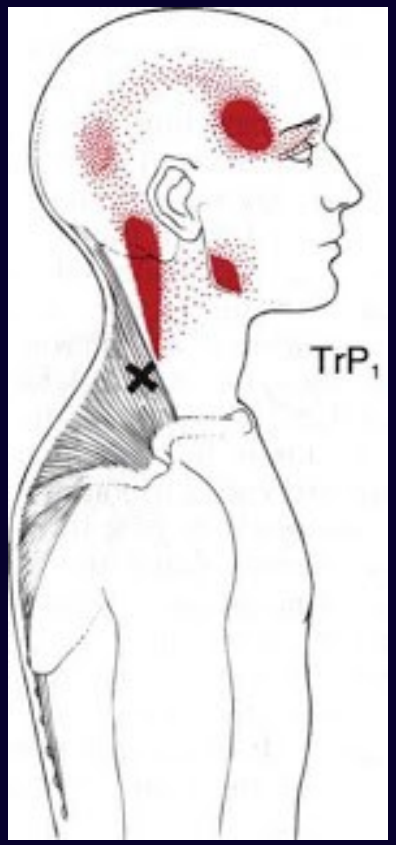
CIF | Classificação Internacional de Funcionalidade, Incapacidade e Saúde

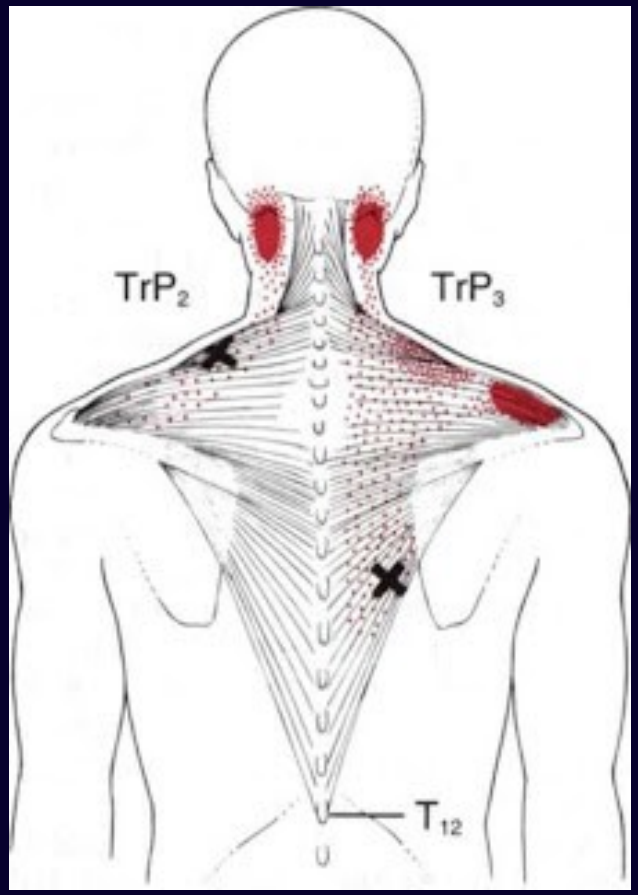
SÍNDROMES DOLOROSAS MIOFASCIAIS

Transtornos Músculo-Esqueléticos	
1. Trapézio;	9. Multifido;
2. Esternocleidomastoideo;	10. Retos Posteriores;
3. Esplênio da Cabeça e Esplênio do Pescoço;	11. Obliquos;
4. Elevador da Escápula	12. Pterigoideo;
5. Infraespinhal;	13. Digástrico.
6. Escalenos;	
7. Semiespinhais da cabeça e pescoço;	
8. Longuissimo da cabeça;	

SDM Músculo trapézio

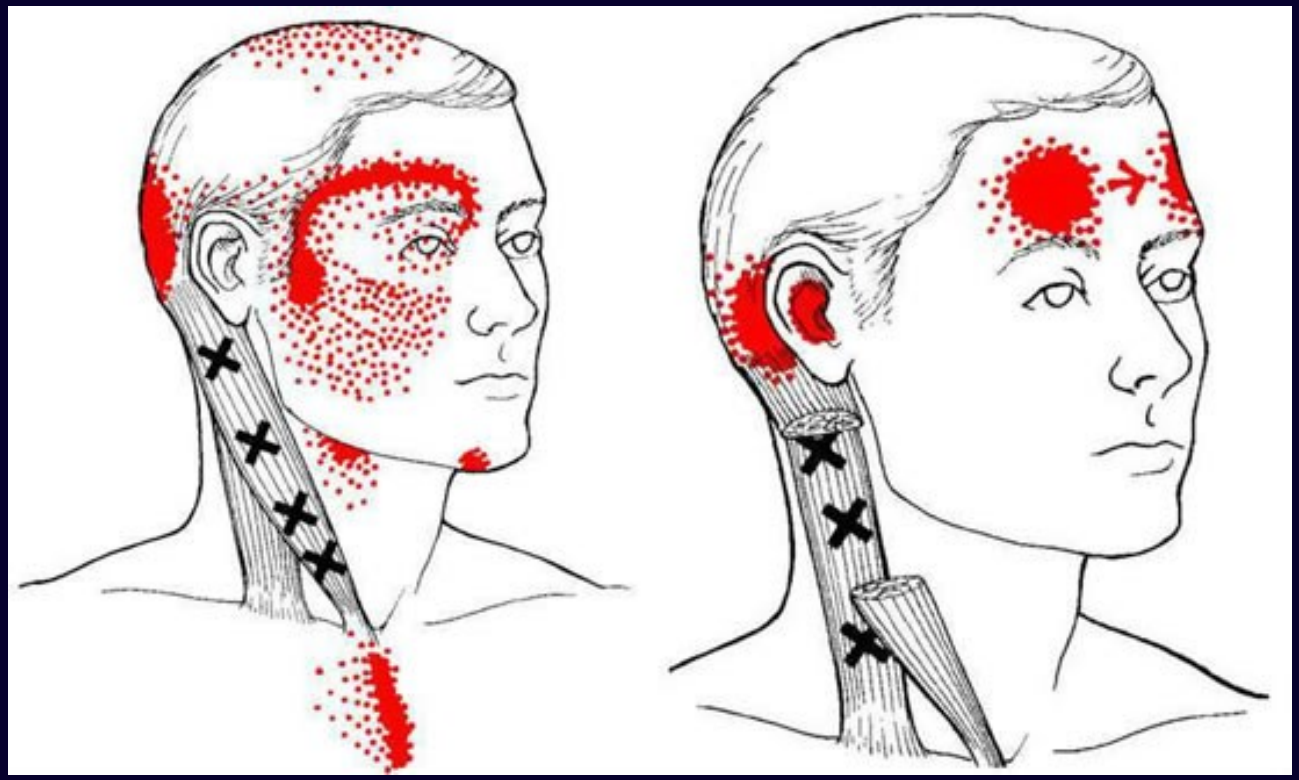
- Excessiva flexão ou extensão cervical;
- Estresses emocionais, sobrecarga funcional (suporte num ombro), elevação dos mmss;
- Dor referida na face posterolateral do pescoço, orelha, região temporal e mastóide.





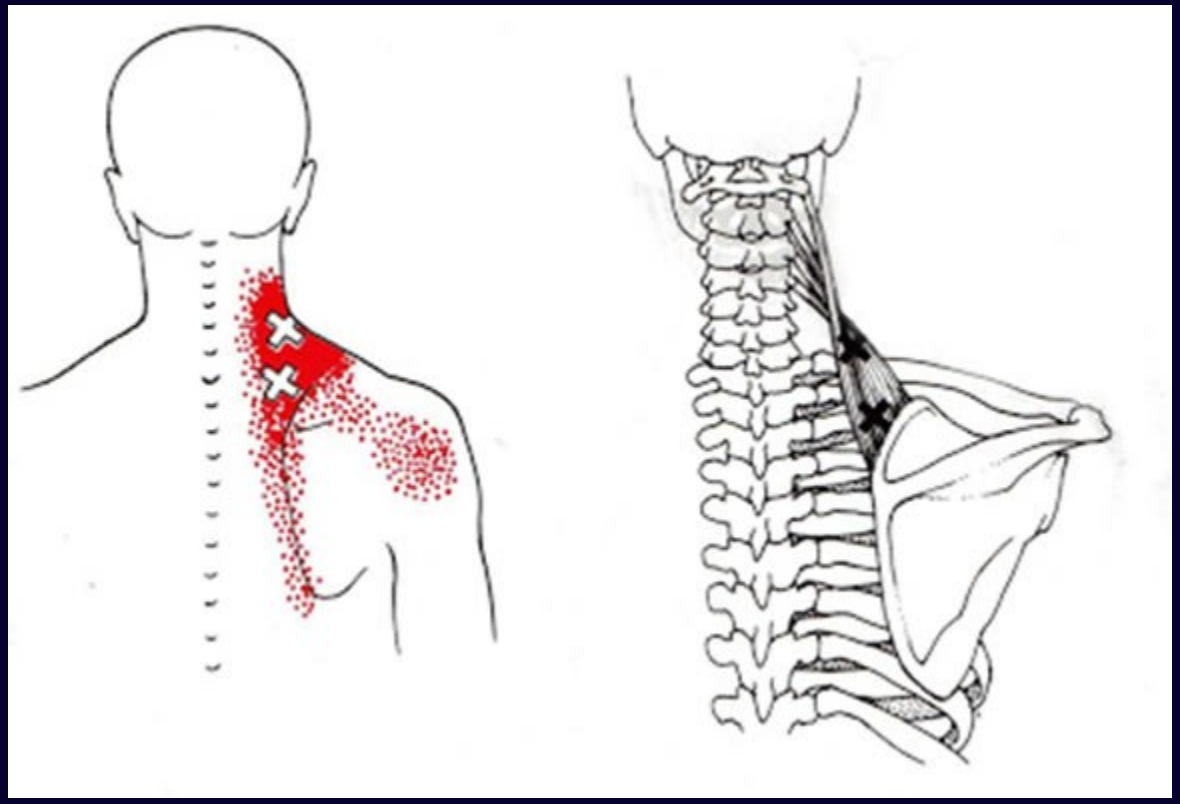
SDM Músculo Esternocleidomastóideo

- Dor referida no esterno, na região occipital, na órbita, no pavilhão auricular e na região clavicular.



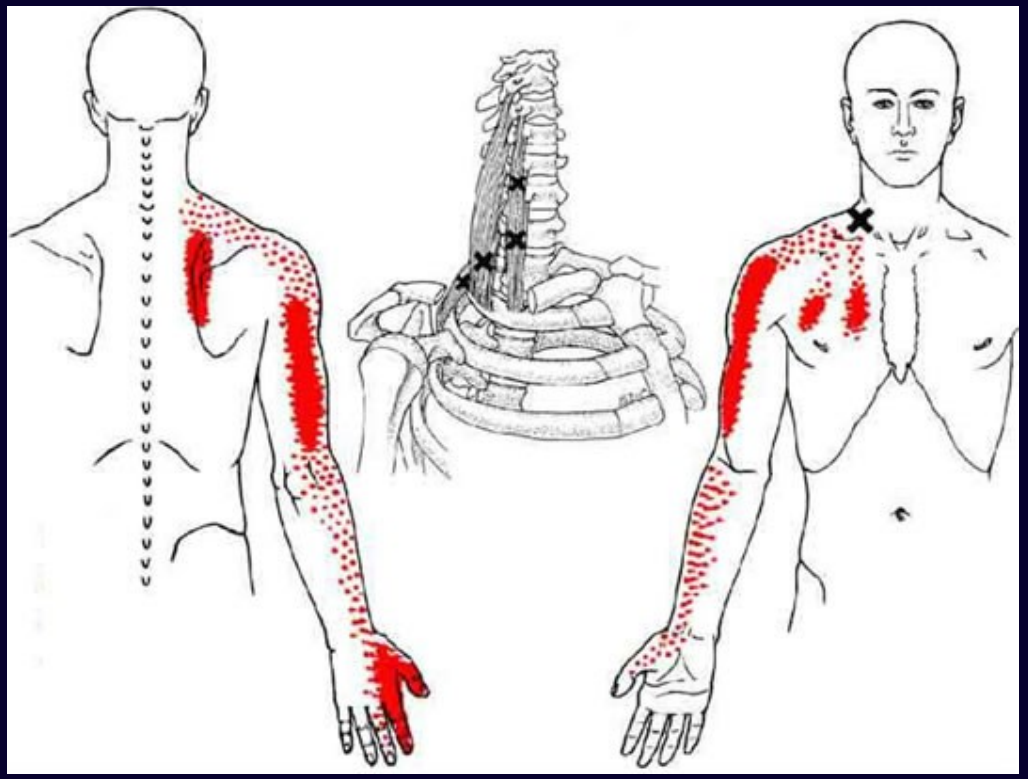
SDM Músculo elevador da escápula

- Situações de tensão emocional ou de posturas inadequadas;
- Relação com Sd do Desfiladeiro Torácico;
- Dor referida na face posterolateral do pescoço, na região interescapular e no ângulo do pescoço.



SDM Músculo Escalenos

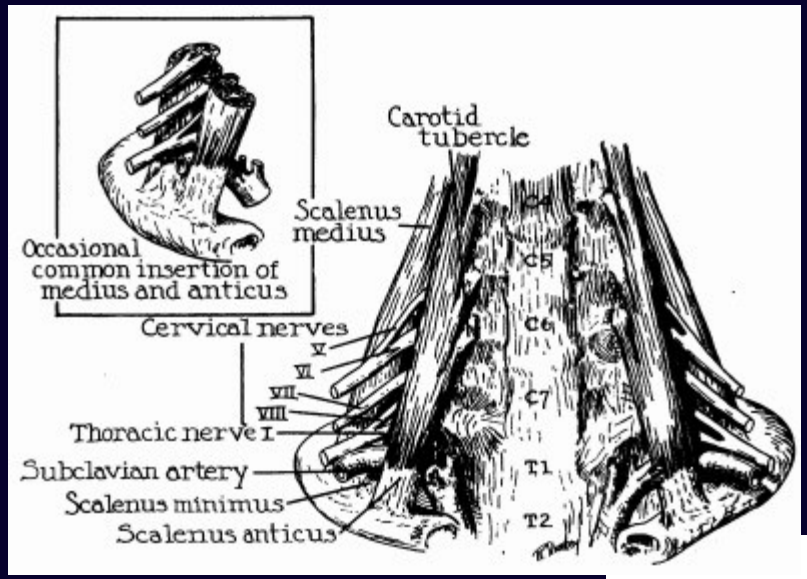
- Vícios posturais e de anormalidades respiratórias (DPOC , asma, pneumonia, enfisema, etc);
- Dor referida na região cervical anterior, peitoral, cervical posterior, dorsal ou lateral e no mmss;
- Pode simular infarto do miocárdio;
- Pode causar síndrome do desfiladeiro torácico.

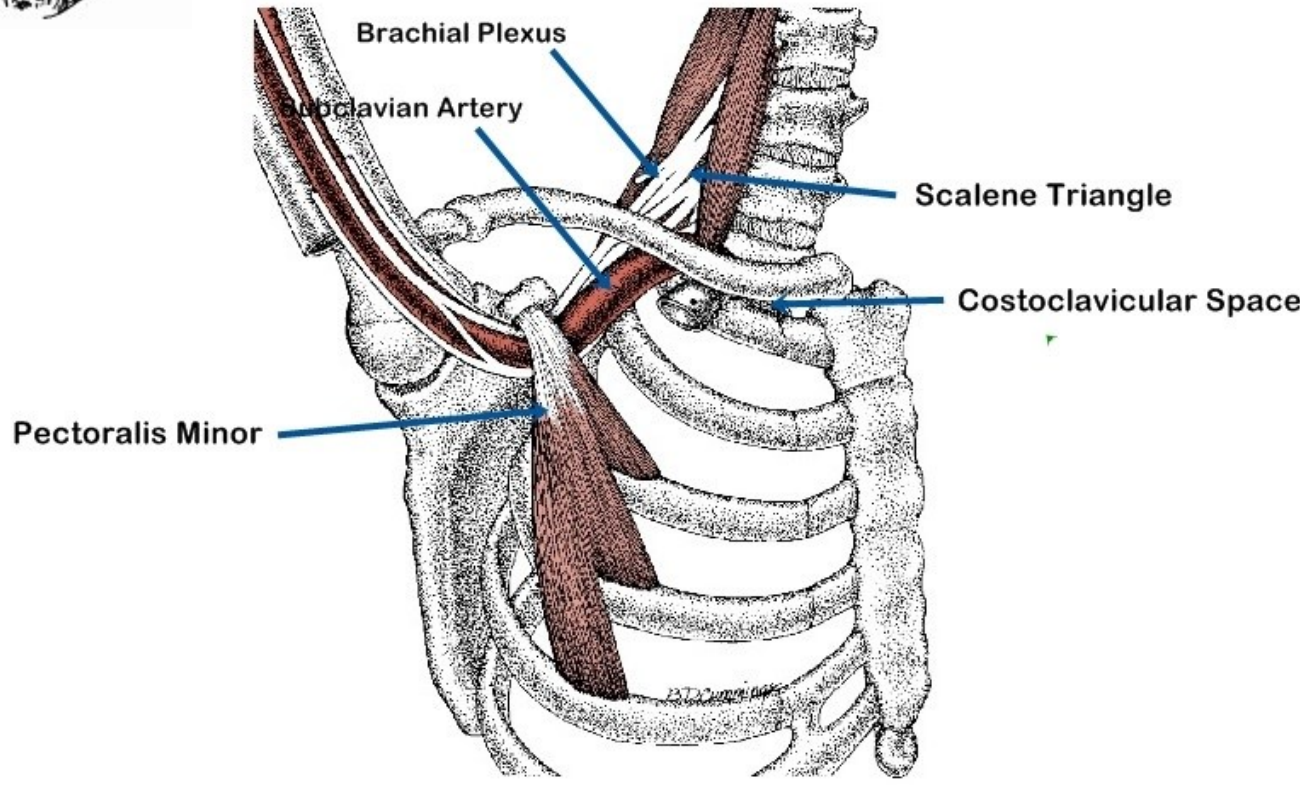


SDM Músculo Escalenos

- Esportes: musculação / remo / natação / iatismo e vela olímpica;
- Mochila pesada unilateral ou bilateral;
- Posturas viciosas no trabalho: braços para frente / braços para alto / levantar e abaixar braços / carregar cargas pesadas nas laterais do corpo;
- Anomalias anatômicas: hemipelve pequena / escoliose idiopática / dismetria de mmii;

Scalenes & Thoracic Outlet Syndrome





OUTRAS CAUSAS DE SÍNDROMES DOLOROSAS

Outros Transtornos Músculo-Esqueléticos / Neurológicos	
1. Fibromialgia;	4. Luxação Pós-Laminectomia;
2. Traumatismos;	5. Tumores;
3. Disfunções intervertebrais	6. Doenças Infecciosas;
3.1. Espondilose Cervical sem compressão;	7. Doenças Metabólicas;
3.2. Hérnias Discais;	8. Processos inflamatórios;
3.3. Estenose Canal;	9. Artrite Reumatóide;
3.4. Artrose facetária;	10. Espondilite Anquilosante;
3.5. Mielopatia;	11. Polimiosite e Dermatomiosite;

OUTRAS CAUSAS DE SÍNDROMES DOLOROSAS

Outros Transtornos Neurológicos / Outras causas raras
1. AVE;
2. Infarto Medular;
3. Síndrome do Processo Estilóide (Sd de Eagle);
4. Dor visceral cervical

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REVIEW

Post-operative nerve injuries after cervical spine surgery

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Abstract

Although relatively rare, post-operative nerve injuries may occur after cervical spine procedures. The most common post-operative neural disorder is C5 nerve palsy. The risk factors for C5 nerve palsy are male gender, OPLL, and posterior cervical approaches. It generally presents with deltoid and/or biceps weakness, and may present immediately or several days after surgery. Treatment is generally conservative due to transient duration of symptoms, but evaluation of residual compression at C4–5 is essential. PTS (Parsonage-Turner syndrome) is an idiopathic plexopathy generally presenting with severe neuropathic pain in the shoulder, neck, and arms, followed by neurological deficits involving the upper brachial plexus. The deficits typically present in a delayed fashion after the onset of pain. Once residual nerve compression is ruled out, initial treatment is based on pain control and physical therapy. Post-operative C8-T1 nerve palsies occur with weakness of the five intrinsic muscles of the hand innervated by the medial nerve, with sensory symptoms in the territory innervated by the ulnar nerve (ulnar two digits of the hand), and also the medial forearm. The risk factors for C8-T1 nerve injuries after surgery are C7 pedicle subtraction osteotomies and posterior fixation of the cervico-thoracic junction, especially in patients with preoperative C7-T1 stenosis. A wide foraminal decompression at C7-T1 region is necessary to minimize risk of this complication. Finally, Horner's syndrome can occur post-operatively, especially after anterolateral approaches to the middle and lower levels of the cervical spine. It is characterized by ipsilateral papillary miosis, facial anhydrosis, and ptosis secondary to injury of the cervical sympathetic nerves. Avoid using the cautery on the lateral border of the longus colli muscle, where the sympathetic chain lies and place the retractors properly underneath the muscle to decrease the chance of sympathetic injuries. It can also occur from iatrogenic compression or injury to the T1 nerve root, as the sympathetic chain gets some of its fibers from that level. Understanding the most common potential nerve injuries after cervical spine procedures is helpful in prevention, early diagnosis, and appropriate management.

LESÕES NERVOSAS PERIFÉRICAS PÓS CX COLUNA CERVICAL

Table 1 Clinical presentation, diagnosis, risk factors, differential diagnosis, and preventative measurements of nerve injuries after cervical spine procedures

Clinical scenario	Risk factors	Clinical presentation	Physical examination	Differential diagnosis	Preventative measures
C5 palsy	-Male -Posterior cervical surgery involving C4–5 -OPLL	-Postoperative (immediately or after up to 14 days) weakness of the deltoid muscle or biceps Often painless	-Weakness of the deltoid or biceps muscle -Mild or absent sensory symptoms	-Parsonage-Turner syndrome -Foraminal stenosis/-incomplete decompression at C4–5	-Thorough C4–5 decompression -Care to not injure C5 nerve root intraoperatively with heat or surgical instruments
Parsonage-Turner syndrome or idiopathic brachial plexopathy or neuralgic amyotrophy	-Infection -Systemic stress -Surgeries -Cervical decompression	-Usually severe neuropathic pain before motor deficit	-Involvement of C5 myotome but also muscle weakness and sensory symptoms not necessarily in the same nerve root or peripheral nerve distribution -Winging scapula	-C5 palsy -Incomplete decompression	

LESÕES NERVOSAS PERIFÉRICAS PÓS CX COLUNA CERVICAL

C8-T1 radiculopathy	-Cervico-thoracic fusion -C7 pedicle subtraction osteotomies -C7-T1 stenosis	-Symptoms in the territory of the ulnar nerve but also involvement of the medial forearm and hand weakness of the five intrinsic hand muscles innervated by the median nerve	-Sensory symptoms in the medial forearm, 4th and 5th fingers and also ulnar border of the hand -Weakness of all intrinsic hand muscles, including the median nerve innervated muscles (abductor pollicis brevis, flexor pollicis brevis, opponens pollicis, and lateral lumbricals)	-Ulnar compression at the elbow	Adequate C7-T1 decompression when pre-existing radiological stenosis exists Preoperative evaluation of patient with neck extended for sensory symptoms in the medial forearm
Horner syndrome	-Oblique lateral corpectomies -Lateral anterior cervical approaches -Middle and lower approaches to the subaxial cervical spine (C5 level)	-Ipsilateral pupillary miosis, facial anhydrosis, ptosis	-Difficult to open the ipsilateral eyelid and miosis with decreased sweating and apparent enophthalmos	-Apical lung tumor (Pancoast tumor) involving the sympathetic chain -Specific pupil diseases or third nerve palsies -Cord injury at cervico-thoracic junction -T1 radiculopathy	Avoiding monopolar cautery laterally on longus colli -Subperiosteal dissection and maintaining retractors underneath longus colli

Artrose Facetária

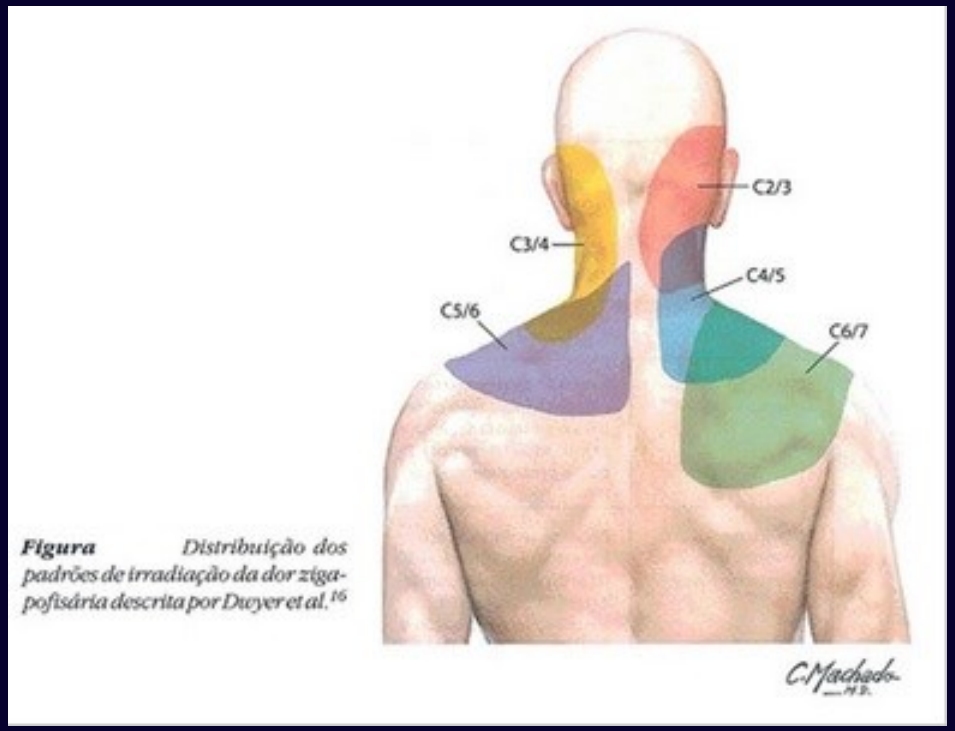


Figura *Distribuição dos padrões de irradiação da dor zigapofisária descrita por Dwyer et al.*[16]

Radiculopatias

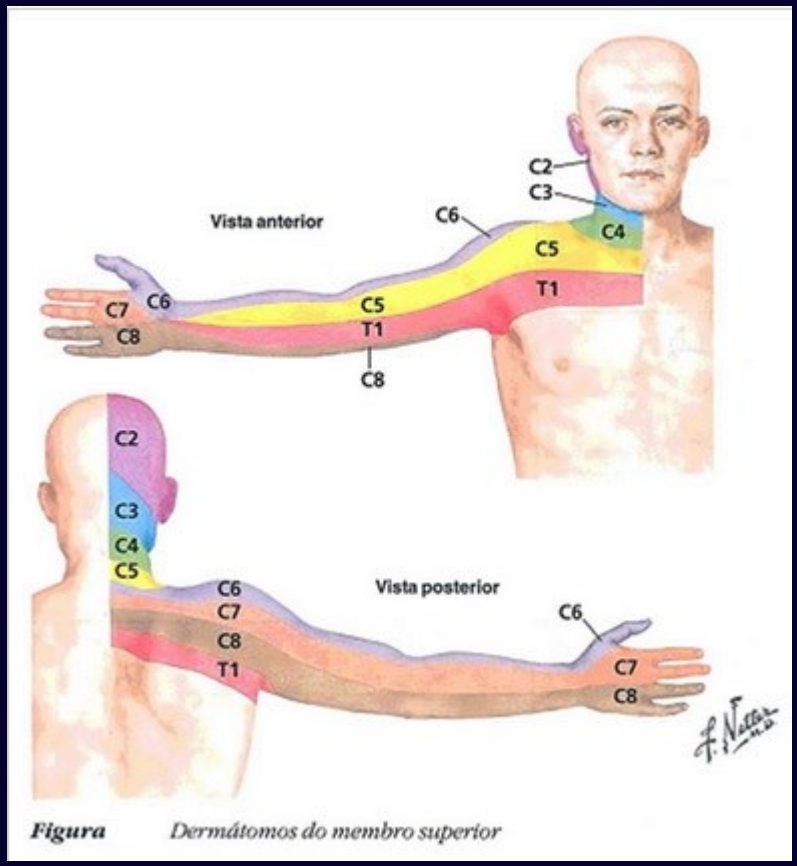
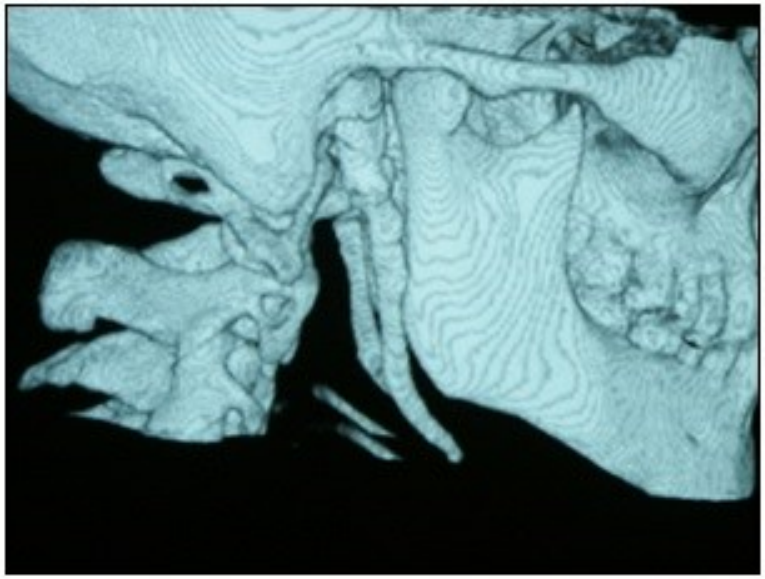


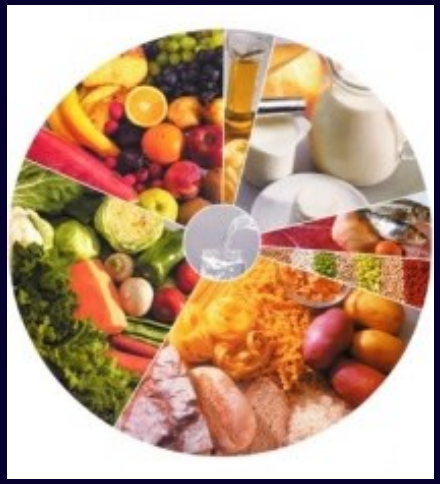
Figura *Dermátomos do membro superior*

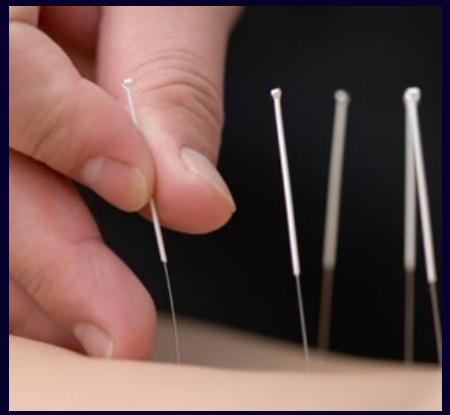
Síndrome de Eagle



Eagle syndrome. Case treated by Dr Máiz

Reabilitação Física





Modelo tradicional

- Manifestação de doença
- Médico
- Expert no alívio da dor
- Passiva
- Cura ou alívio
- Farmacológico e técnica
- Queixas
- Dor corresponde à lesão
- Sem lesão = dor irreal
- Dissocia pensamentos sobre dor
- Causas

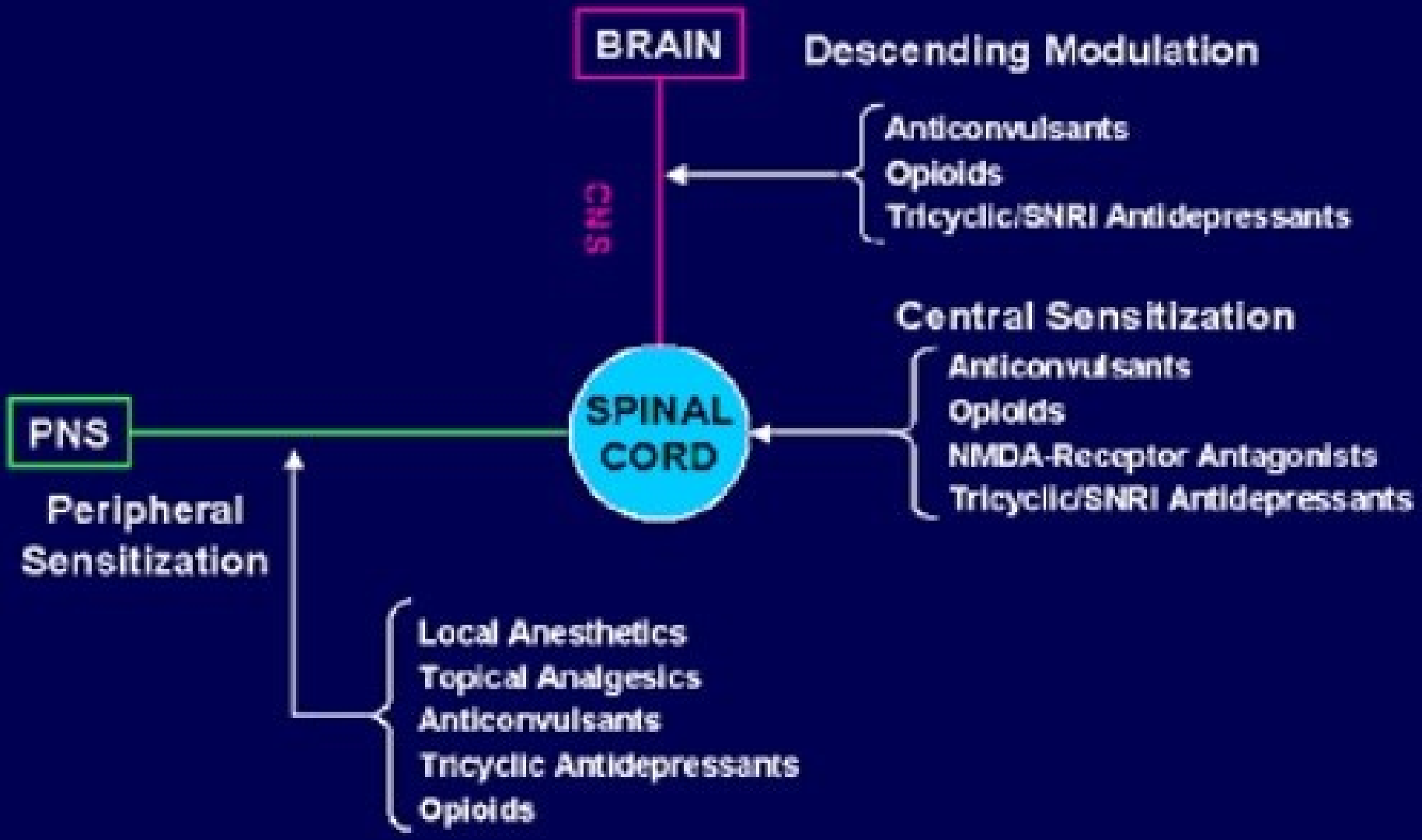
Modelo biopsicossocial

- Experiência biológica, social e psicossocial
- Doente
- Educador, motivador, médico cuidador
- Proativa
- Aumento da função, melhora da qualidade vida, resgate ou melhora das relações
- Educacional, motivacional, interpessoal, psicológico, farmacológico e técnica
- Relações recíprocas entre queixas sentidas e emoções, processos psicológicos e funções interpessoais
- Pensamentos do doente sobre dor
- Amplitude do impacto da dor

MEDICAMENTOS EMPREGADOS EM DOR CRÔNICA

-
-

Pharmacotherapeutics and the Nervous System



MODALIDADES TERAPÊUTICAS

Some of the most important modalities in CAM

Therapy	Description
Acupuncture	Insertion of a needle into the skin and underlying tissues in special sites, known as points, for therapeutic or preventive purposes
Biofeedback	The use of apparatus to monitor, amplify and feed back information on physiological responses so that a patient can learn to regulate these responses. It is a form of psychophysiologic self-regulation
Chiropractic	A system of healthcare which is based on the belief that the nervous system is the most important determinant of health and that most diseases are caused by spinal subluxations which respond to spinal manipulation
Herbal medicine	The medical use of preparations that contain exclusively plant material
Hypnotherapy	The induction of a trance-like state to facilitate the relaxation of the conscious mind and make use of enhanced suggestibility to treat psychologic and medical conditions and effect behavioral changes
Massage	A method of manipulating the soft tissue of whole body areas using pressure and traction
Osteopathy	Form of manual therapy involving massage, mobilization and spinal manipulation
Relaxation therapy	Techniques for eliciting the "relaxation response" of the autonomic nervous system

Evidência

ELSEVIER
SAUNDERS

Phys Med Rehabil Clin N Am
17 (2006) 435–450

PHYSICAL MEDICINE
AND REHABILITATION
CLINICS OF
NORTH AMERICA

Multidisciplinary and Interdisciplinary Management of Chronic Pain

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Novas Perspectivas Terapêuticas

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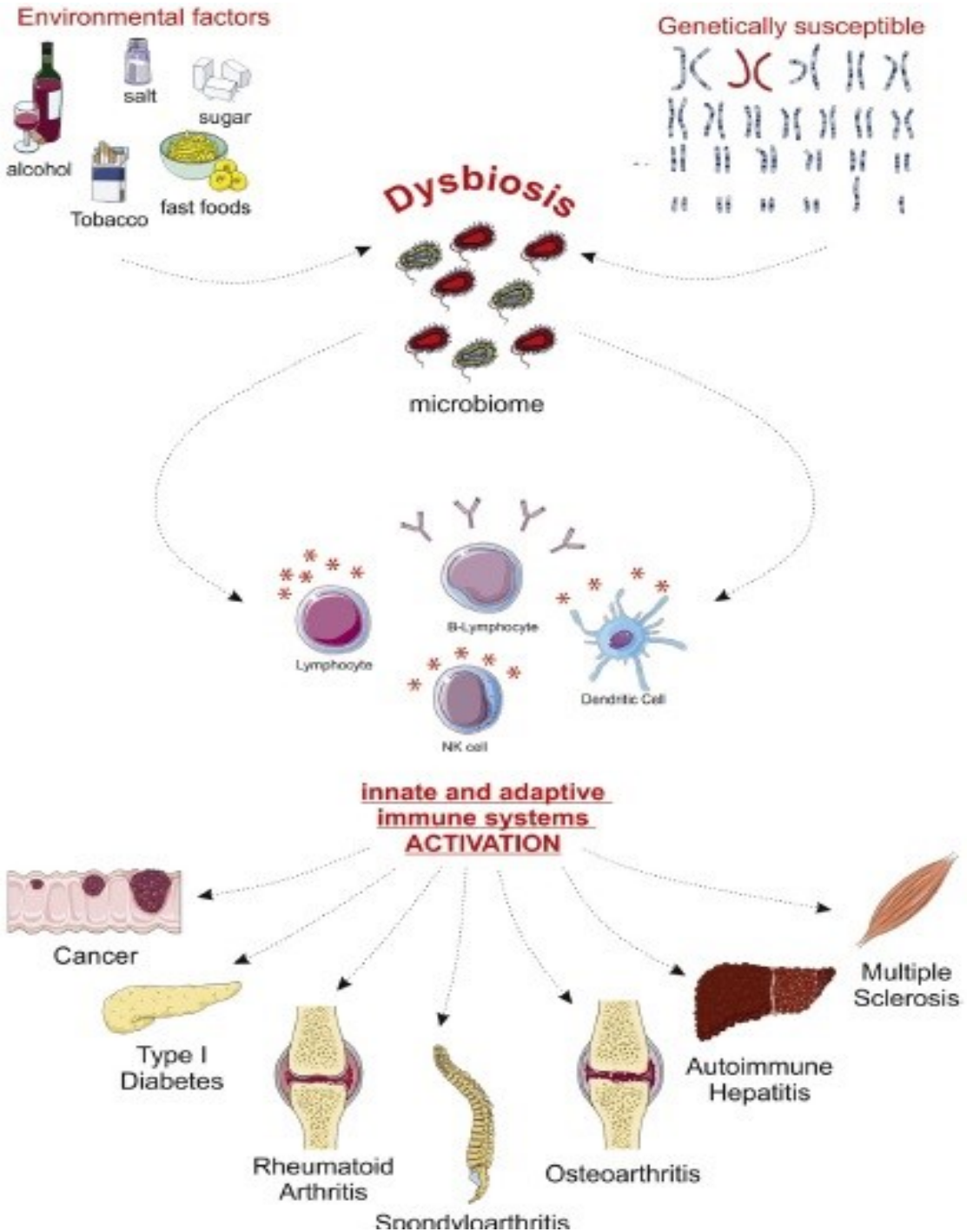
The gastrointestinal microbiome and musculoskeletal diseases: a beneficial role for probiotics and prebiotics.

Vitetta L[1], Coulson S[2], Linnane AW[3], Butt H[4].

⊕ Author information

Abstract

Natural medicines are an attractive option for patients diagnosed with common and debilitating musculoskeletal diseases such as Osteoarthritis (OA) or Rheumatoid Arthritis (RA). The high rate of self-medication with natural products is due to (1) lack of an available cure and (2) serious adverse events associated with chronic use of pharmaceutical medications in particular non-steroidal anti-inflammatory drugs (NSAIDs) and high dose paracetamol. Pharmaceuticals to treat pain may disrupt gastrointestinal (GIT) barrier integrity inducing GIT inflammation and a state of and hyper-permeability. Probiotics and prebiotics may comprise plausible therapeutic options that can restore GIT barrier functionality and down regulate pro-inflammatory mediators by modulating the activity of, for example, Clostridia species known to induce pro-inflammatory mediators. The effect may comprise the rescue of gut barrier physiological function. A postulated requirement has been the abrogation of free radical formation by numerous natural antioxidant molecules in order to improve musculoskeletal health outcomes, this notion in our view, is in error. The production of reactive oxygen species (ROS) in different anatomical environments including the GIT by the epithelial lining and the commensal microbe cohort is a regulated process, leading to the formation of hydrogen peroxide which is now well recognized as an essential second messenger required for normal cellular homeostasis and physiological function. The GIT commensal profile that tolerates the host does so by regulating pro-inflammatory and anti-inflammatory GIT mucosal actions through the activity of ROS signaling thereby controlling the activity of pathogenic bacterial species.


Environmental factors
salt
sugar
alcohol
Tobacco
fast foods
Genetically susceptible
Dysbiosis
microbiome
B-Lymphocyte
Lymphocyte
Dendritic Cell
NK cell
innate and adaptive
immune systems
ACTIVATION
Cancer
Multiple
Sclerosis
Type I
Diabetes
Autoimmune
Hepatitis
Rheumatoid
Arthritis
Osteoarthritis
Spondyloarthritis

Promoção e Prevenção

- ***Evidência científica:***
  - ***Condicionamento físico;***
  - ***Fortalecimento muscular;***

"The Mother of MYOFASCIAL - TRIGGER POINT Knowledge"

THE JANET G. TRAVELL, M.D.PAPERS

Janet G Travell

"Life is like a bicycle - you don't fall off until you stop pedaling...It is better to wear out than to rust out, so keep pedaling."

✦ *OBRIGADO!!!!!!*

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