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G.U.I.D.A.
PER LA GESTIONE UNIFICATA E INTERDISCIPLINARE
DEL DOLORE MUSCOLO-SCHELETRICO E DELL'ALGODISTROFIA

V CONGRESSO NAZIONALE

EVERYTHING YOU NEED TO KNOW

BOLOGNA
ROYAL HOTEL CARLTON
27 Febbraio - 1 Marzo 2025

Everything you need to know about "Il dolore cronico secondario"

Chronic headache or orofacial pain

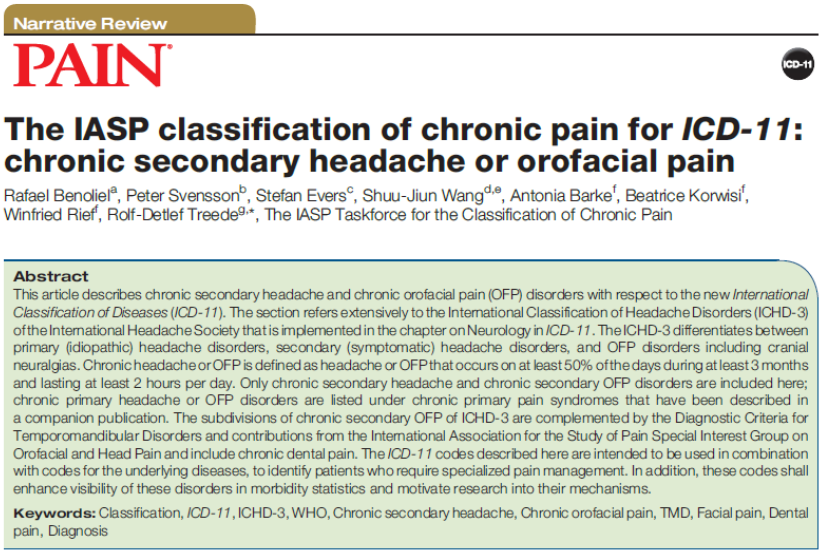
Prof. Alessandro de Sire

Professore Associato di Medicina Fisica e Riabilitativa
Consigliere Nazionale della Società Italiana di Medicina Fisica e Riabilitativa (SIMFER)
Referente Regionale Calabria-Basilicata per la Società Italiana GUIDA
Direttore del Master «Terapia riabilitativa del dolore-muscolo-scheletrico e della spasticità»
Dipartimento di Scienze Mediche e Chirurgiche
Università degli Studi «Magna Graecia» di Catanzaro
U.O.C. Medicina Fisica e Riabilitativa, A.O.U. «Renato Dulbecco» di Catanzaro
Email: alessandro.desire@unicz.it

Chronic headache or orofacial pain

Le linee guida IASP definiscono come entità integrata il dolore orofacciale e la cefalea cronica :

«Cefalea o dolore orofacciale che si manifesta almeno nel 50% dei giorni per almeno 3 mesi e della durata di almeno 2 ore al giorno»



Narrative Review

PAIN

ICD-11

The IASP classification of chronic pain for *ICD-11*: chronic secondary headache or orofacial pain

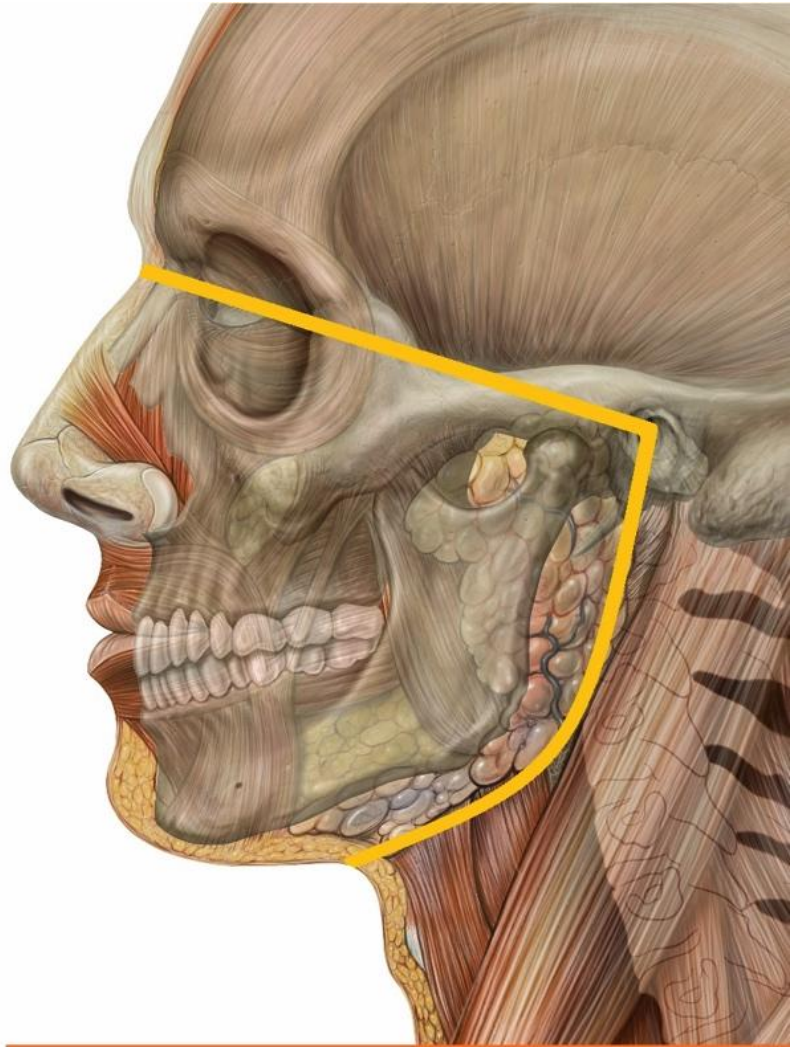
Rafael Benoliel[a], Peter Svensson[b], Stefan Evers[c], Shuu-Jiun Wang[d,e], Antonia Barke[f], Beatrice Korwisi[f], Winfried Rief[f], Rolf-Detlef Treede[g,*], The IASP Taskforce for the Classification of Chronic Pain

Abstract

This article describes chronic secondary headache and chronic orofacial pain (OFP) disorders with respect to the new *International Classification of Diseases* (*ICD-11*). The section refers extensively to the International Classification of Headache Disorders (ICHD-3) of the International Headache Society that is implemented in the chapter on Neurology in *ICD-11*. The ICHD-3 differentiates between primary (idiopathic) headache disorders, secondary (symptomatic) headache disorders, and OFP disorders including cranial neuralgias. Chronic headache or OFP is defined as headache or OFP that occurs on at least 50% of the days during at least 3 months and lasting at least 2 hours per day. Only chronic secondary headache and chronic secondary OFP disorders are included here; chronic primary headache or OFP disorders are listed under chronic primary pain syndromes that have been described in a companion publication. The subdivisions of chronic secondary OFP of ICHD-3 are complemented by the Diagnostic Criteria for Temporomandibular Disorders and contributions from the International Association for the Study of Pain Special Interest Group on Orofacial and Head Pain and include chronic dental pain. The *ICD-11* codes described here are intended to be used in combination with codes for the underlying diseases, to identify patients who require specialized pain management. In addition, these codes shall enhance visibility of these disorders in morbidity statistics and motivate research into their mechanisms.

Keywords: Classification, *ICD-11*, ICHD-3, WHO, Chronic secondary headache, Chronic orofacial pain, TMD, Facial pain, Dental pain, Diagnosis

Dolore orofacciale



Dolore localizzato nella regione sottostante la linea orbitomeatale, sopra il collo e anteriormente alle orecchie.

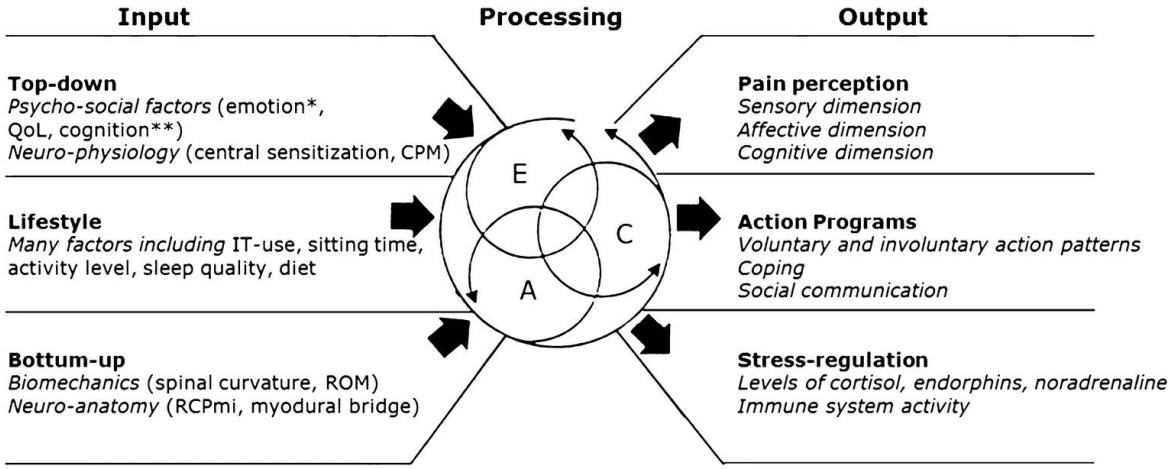
La regione craniofacciale ha un'alta densità di strutture anatomiche e il dolore spesso viene riferito da un'area all'altra.

Spiccano i disturbi temporomandibolari come principali cause artrogeniche e miogeniche di dolore

AMERICAN ACADEMY OF OROFACIAL PAIN

Sintomatologia associata

- Fibromialgia
- Sindrome dell'intestino irritabile
- Emicrania
- Depressione
- Fatigue
- Lombalgia
- Cervicalgia
- Dolore pelvico



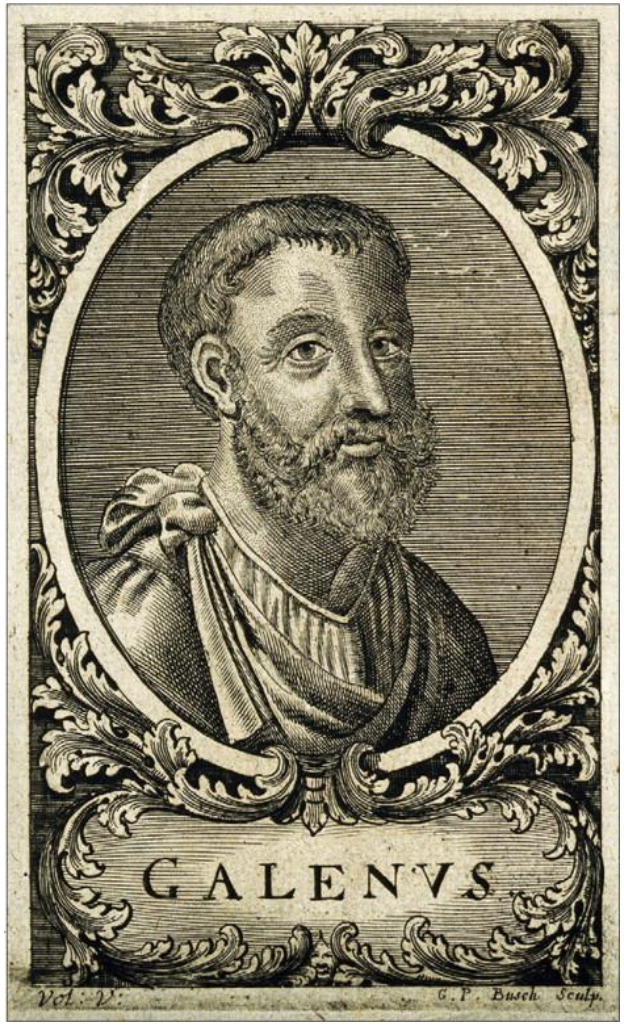
Vinícius do Vale Braido et al. Clinical Oral Investigations 2023

Cefalea-cenni storici

- I primi riferimenti di interesse medico alla cefalea risalgono alla pratica della trapanazione del cranio diffusa in Europa, Asia e Perù tra il 3000 e il 2000 A.C.
- Tuttavia è con Ippocrate (460-370 A.C.) che tale patologia viene ampiamente trattata, e qui viene riconosciuta l'importanza dello stato emotivo nel facilitare gli attacchi

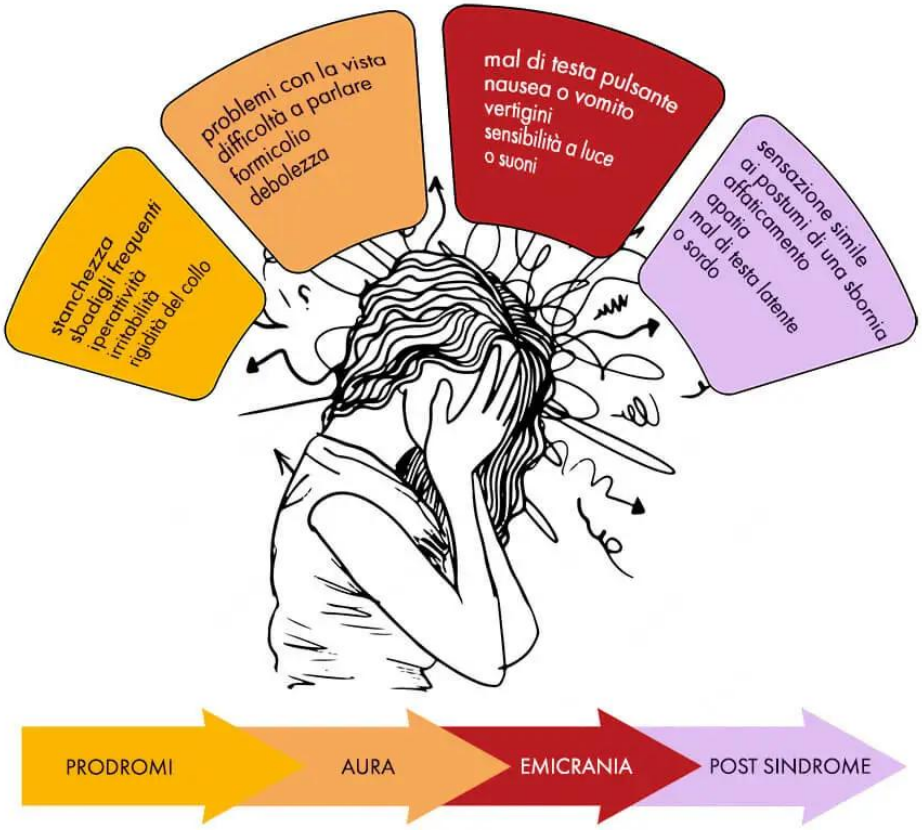
Cefalea-cenni storici

- Si devono invece a Galeno (129-199 d.C.) sia il termine hemicrania, che ancora oggi conserva intatta l'iniziale efficacia descrittiva, sia una delle prime ipotesi eziopatogenetiche secondo cui gli attacchi erano causati dalla bile gialla, uno dei quattro umori (sangue, flegma, bile gialla e bile nera) teorizzati secoli prima da Ippocrate. La bile gialla, era considerata anche responsabile del temperamento collerico



Cefalea-cenni storici

- Da Galeno in avanti il termine “hemicrania”, riferito ad un disturbo doloroso del capo unilaterale associato a nausea, vomito e fotofobia, resterà sostanzialmente immodificato, rimanendo spesso riconoscibile anche tra idiomi radicalmente diversi

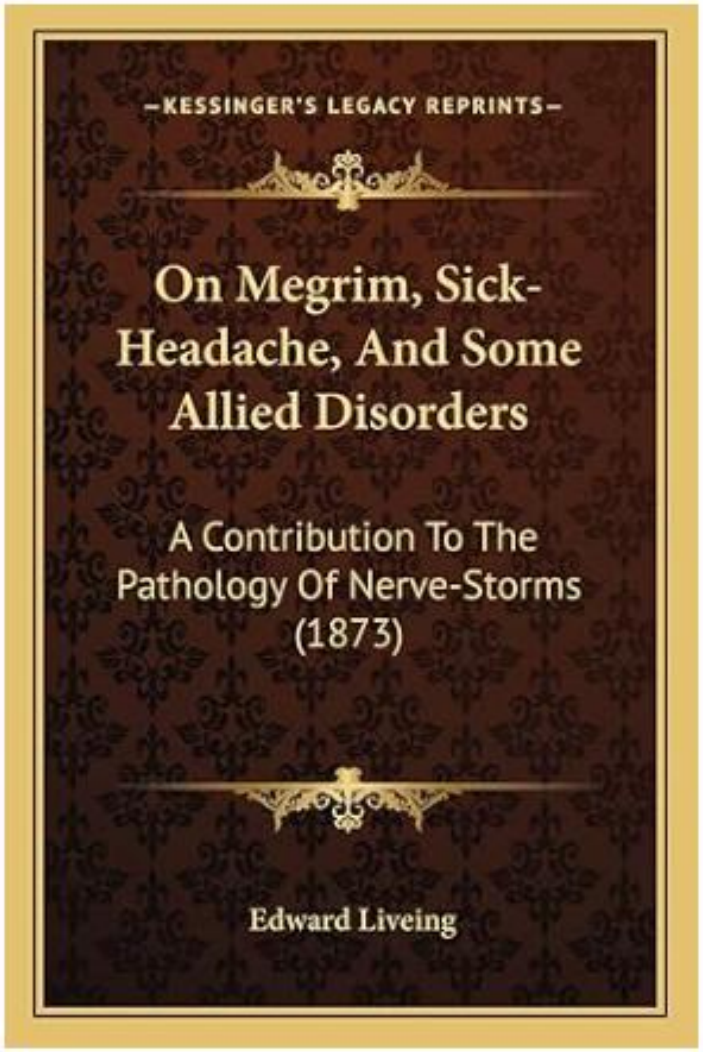


Cefalea-cenni storici

Infine il primo testo monografico dedicato alla cefalea si deve a Liveing ed aveva per titolo:

"Su emicrania, mal di testa nauseante e disturbi associati: un contributo alla patologia delle tempeste nervose".

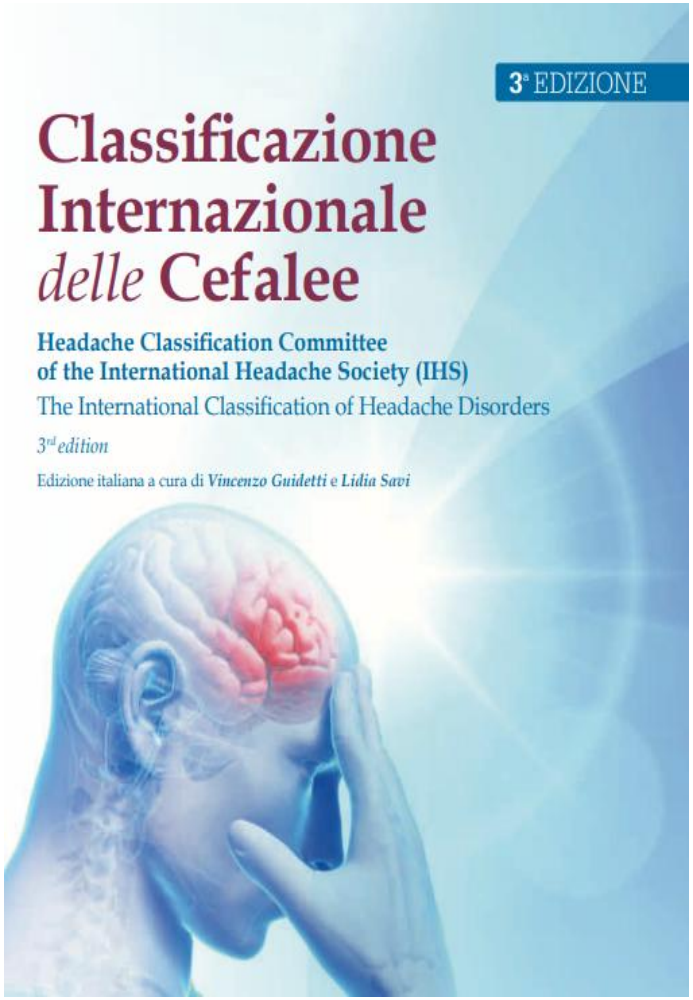
La pubblicazione è del 1873.



Classificazione della cefalea

Attualmente le cefalee sono diagnosticate e classificate in base alla classificazione internazionale delle cefalee a cura della International Headache Society (IHS) giunta alla sua terza edizione

Tale classificazione comprende una prima suddivisione in cefalee primarie e secondarie



Classificazione della cefalea

Primary headache

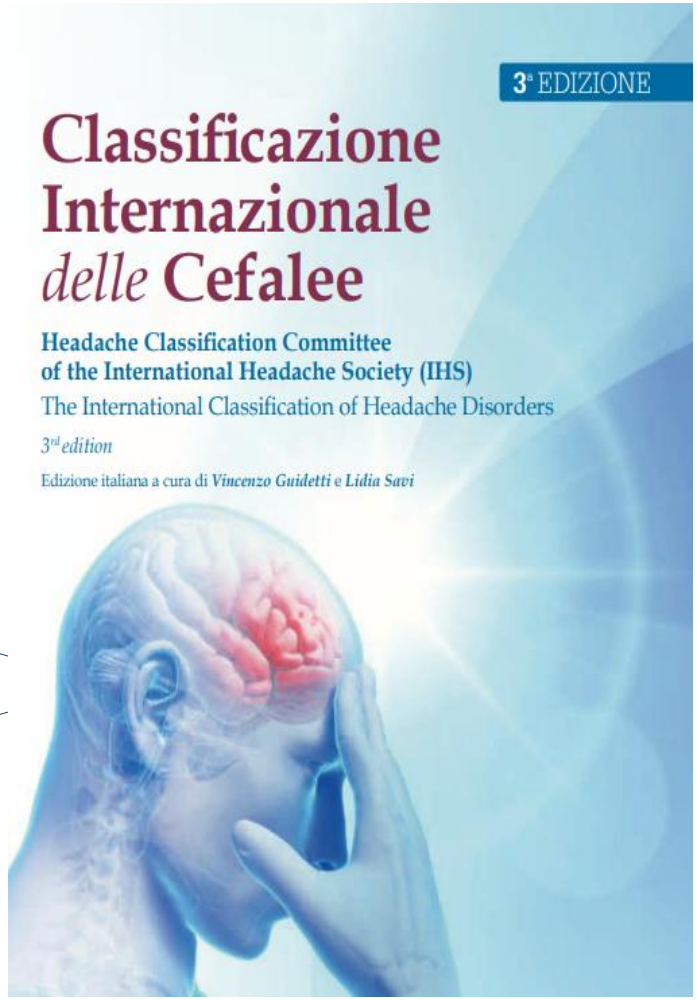
- Migraine (with or without aura)
- Tension-type headache
- Trigeminal autonomic cephalalgias
- Other primary headache disorders

Secondary headache

- Headache attributed to trauma or injury to the head and/or neck
- Headache attributed to cranial and/or cervical vascular disorder
- Headache attributed to non-vascular intracranial disorder
- Headache attributed to a substance or its withdrawal
- Headache attributed to infection
- ~~Headache attributed to disorder of homeostasis~~
- Headache or facial pain attributed to disorder of the cranium, neck, eyes, ears, nose, sinuses, teeth, mouth, or other facial or cervical structure
- ~~Headache attributed to psychiatric disorder~~

Painful cranial neuropathies, other facial pain, and other headaches

- Painful lesions of the cranial nerves and other facial pain
- Other headache disorders.



Dati epidemiologici

- In questo contesto, la cefalea rappresenta una tra le più diffuse cause di disabilità in tutto il mondo
- In particolare tra le cefalee primarie, l'emicrania (11%) e la cefalea di tipo tensivo (42%) al livello globale sono caratterizzati da un'elevata prevalenza

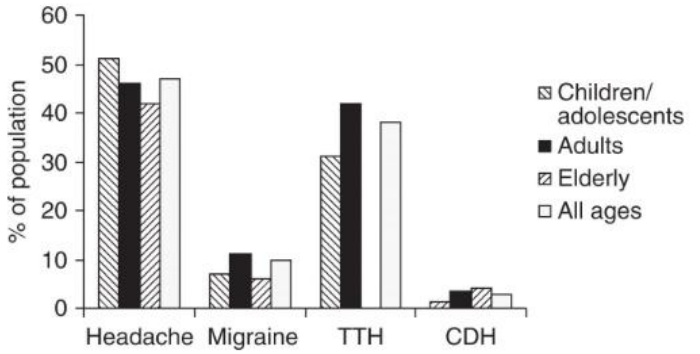


Figure 1 Prevalence of different headaches in different age categories. TTH, Tension-type headache; CDH, chronic daily headache.

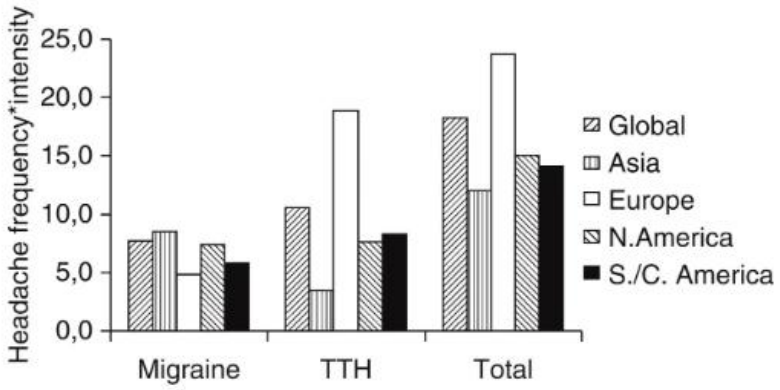


Figure 5 Burden of headache (headache days/year per person in the population × intensity).

Cenni di terapia

Il trattamento si divide in terapia della fase acuta, che comprende diverse classi di FANS e triptani, ovvero agonisti del recettore 5 HT 1B/1D

Table 2
Selected acute treatments for migraine reviewed in US Headache Consortium guideline evidence

Drug	Quality of Evidence[a]	Clinical Uses[b]	Types and Relative Risk of Adverse Events[c]
Simple analgesics/combination analgesics/NSAIDs			
Acetaminophen	B	Non-disabling migraine	Nonspecific/infrequent
Aspirin	A	First line: mild to moderate migraine	Gastrointestinal and bleeding/occasional
Acetaminophen, aspirin, caffeine	A	First line: mild to moderate migraine	Cardiovascular, gastrointestinal, and bleeding/occasional
Diclofenac potassium	B	First line: mild to moderate migraine	Gastrointestinal and bleeding/occasional
Flurbiprofen	B	First line: mild to moderate migraine	Gastrointestinal and bleeding/occasional
Ibuprofen	A	First line: mild to moderate migraine	Gastrointestinal and bleeding/occasional
Naproxen	B	First line: mild to moderate migraine	Gastrointestinal and bleeding/occasional
Naproxen sodium	A	First line: mild to moderate migraine	Gastrointestinal and bleeding/occasional
Ketorolac IM	B	Rescue therapy/severe migraine with contraindications to 5HT agonists	Gastrointestinal and bleeding/infrequent
5HT 1B/1D agonists			
Naratriptan	A	Migraine nonresponding to analgesics/moderate to severe migraine	Nausea, paresthesia, chest discomfort/infrequent when used early in attack
Rizatriptan	A	Migraine nonresponding to analgesics/moderate to severe migraine	Nausea, paresthesia, chest discomfort/infrequent when used early in attack
Sumatriptan	A	Migraine nonresponding to analgesics/moderate to severe migraine	Nausea, paresthesia, chest discomfort/infrequent when used early in attack
Zolmitriptan	A	Migraine nonresponding to analgesics/moderate to severe migraine	Nausea, paresthesia, chest discomfort/infrequent when used early in attack
Sumatriptan nasal spray	A	Migraine nonresponding to analgesics/moderate to severe migraine	Nausea, paresthesia, chest discomfort unpleasant taste/occasional
Sumatriptan SC	A	Moderate to severe migraine/oral nonresponders/early-onset nausea	Nausea, paresthesia, chest discomfort/frequent

Cefalea e TMD

La cefalea di tipo tensivo e i TMD si collegano in molteplici caratteristiche di presentazione clinica e popolazione colpita

Journal of Oral Rehabilitation

Journal of Oral Rehabilitation 2016 **43**; 702–715

Review

Headaches and myofascial temporomandibular disorders: overlapping entities, separate managements?

P. C. R. CONTI*†, Y. M. COSTA†‡, D. A. GONÇALVES§ & P. SVENSSON¶**†† *Department of Prosthodontics, Bauru School of Dentistry, University of São Paulo, Bauru, †Bauru Orofacial Pain Group, University of São Paulo, Bauru, ‡Section of Head and Face Physiology, Department of Biological Sciences, Bauru School of Dentistry, University of São Paulo, Bauru, §Department of Dental Materials and Prosthodontics, Araraquara Dental School, Sao Paulo State University, Araraquara, Brazil, ¶Section of Orofacial Pain and Jaw Function, Department of Dentistry, Aarhus University, Aarhus, Denmark, **Department of Dental Medicine, Karolinska Institutet, Huddinge, Sweden and ††Scandinavian Center for Orofacial Neurosciences (SCON)

Table 1. Clinical characteristics of myofascial temporomandibular disorders (TMD) and tension-type headache (TTH)

Clinical Characteristics	Myofascial TMD	TTH
Demographics		
Age peak prevalence	30–40	30–39
Female-to-male ratio	3·3:1	1·6–3:1
Prevalence	45·3%	32%
Incidence	3·5%	1·42%
Clinical Presentation		
Location	Masseter and temporalis muscle region	Frontotemporal and bilateral (90%)
Quality	Not accurately established	Pressing/tightening (78%)
Frequency	Not accurately established	≥1 and <15 days month^{-1} (38%) and ≥15 days month^{-1} (3%)
Intensity	Mild–moderate	Mild–moderate
Pain upon palpation	Yes (Mandatory)	Yes (Non-essential)

Cefalea e TMD

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I criteri diagnostici di entrambe le condizioni presentano diversi punti comuni

Table 2. Comparison between the International Classification for Headache Disorders, 3rd edition (ICHD-3) and the Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) criteria for headache attributed to temporomandibular disorders (TMD)

Headache Characterisation	ICHD-3	DC/TMD	Item Correspondence
Clinical Presentation			
Location	ns*†	'Headache of any type in the temple area'	No
Quality	ns	ns	Yes
Duration	ns	ns	Yes
Frequency	ns	ns	Yes
Intensity	ns	ns	Yes
Causality Criteria			
Temporal relation	'Headache has developed in temporal relation to the onset of the temporomandibular disorder' or 'headache has significantly worsened in parallel with progression of the temporomandibular disorder' or 'headache has significantly improved or resolved in parallel with improvement in or resolution of the temporomandibular disorder'	ns	No
Clinical evidence	'The headache is produced or exacerbated by active jaw movements, passive movements through the range of motion of the jaw and/or provocative manoeuvres applied to temporomandibular structures such as pressure on the TMJ and surrounding muscles of mastication'	'Headache modified with jaw movement, function or parafunction' and 'confirmation of headache location in the area of temporalis muscle(s)' and 'report of familiar headache in the temple are with at least one of the following provocation tests: palpation of temporalis muscle or maximum unassisted or assisted mouth opening, right of left lateral or protrusive movement(s)'	Yes only if the headache is located in the temple area and when the modification is towards aggravation.
Causative disorder	'Clinical and/or imaging evidence of a pathological process affecting the temporomandibular joint (TMJ), muscles of mastication and/or or associated structures'	A valid diagnosis of painful TMD must be established	Yes

*ns = not specified. †The criterion 4 of the ICHD-3 requires an ipsilateral TMD in cases of unilateral headaches.

Cefalea e TMD

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Review

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Ed anche i trattamenti consigliati in alcuni casi sono indicati in entrambe le condizioni cliniche

Table 3. Treatment modality, objective, description and indications for myofascial temporomandibular disorders (TMD), tension-type headache (TTH) and migraine

Treatment Modality*	Objective	Description	Indications*
Non-pharmacological Modalities: Parafunction Control Education Self-Care	To reduce anxiety, pain and other symptoms; To rest the masticatory muscles. Awareness and control of parafunctional habits. To control stress control and to improve relaxation.	Relaxation techniques, cognitive–behavioural therapies, techniques for pain management, stress control strategies. Instruction to soft diet consumptions, moist heat and/or ice therapy, automassage, stretching exercises for masticatory muscles. Training a relaxed mandibular posture.	EM, CM ETTH mTMD
Physical Therapy	To restore the normal function of the muscles; to reduce inflammation and pain; to promote repair and strength.	Electrotherapy Laser Masticatory muscles exercises.	mTMD
Occlusal Appliance	To temporary alter occlusal relationships, to redistribute occlusal forces, to prevent alterations of teeth, to manage muscle pain and dysfunction.	The most used is the stabilisation appliance made with hard acrylic and cover all the upper or lower teeth.	mTMD
Pharmacotherapy	To reduce pain, peripheral inflammation, and centrally mediated masticatory muscle. ——— Acute: to reduce pain during an attack Prophylactic: to prevent or to reduce the frequency/intensity of attacks.	Analgesics, NSAIDs, local anaesthetics, muscle relaxants, botulinum toxin injections, tricyclic antidepressants, anti-epileptic (i.e. gabapentin) ——— Acute: Analgesics, NSAID Prophylactic: tricyclic antidepressant. ——— Acute: NSAIDs, triptans, dihydroergotamine Prophylactic: beta-adrenergic blocking agents (i.e. propranolol), anticonvulsants (i.e. divalproex sodium or sodium valproate) and topiramate.	mTMD ETTH CTTH EM CM

*The description of the treatment modalities and the indications are not based on systematic analysis of the literature. They are clinical suggestions rather than evidence-based recommendations.
mTMD: myofascial temporomandibular disorder; EM: episodic migraine; CM: chronic migraine; ETTH: episodic tension-type headache; CTTH: chronic tension-type headache; NSAIDs: non-steroidal anti-inflammatory drugs.

Cefalea e TMD

ORIGINAL ARTICLE

Temporomandibular Disorders Are Differentially Associated With Headache Diagnoses

A Controlled Study

Daniela A.G. Gonçalves, DDS, PhD, Cinara M. Camparis, DDS, PhD,* José G. Speciali, MD, PhD,† Ana L. Franco, DDS, MSc,* Sabrina M. Castanharo, DDS,* and Marcelo E. Bigal, MD, PhD‡§*

- La cefalea ed i TMD, non sono simili solo in termini di condivisione di meccanismi patogenetici e caratteristiche cliniche , ma le due condizioni potrebbero essere frequentemente associate

- La loro coesistenza aumenta per frequenza e gravità lo sviluppo di allodinia craniofacciale ed iperalgesia

ORIGINAL ARTICLE

Concomitant Migraine and Temporomandibular Disorders are Associated With Higher Heat Pain Hyperalgesia and Cephalic Cutaneous Allodynia

Thais C. Chaves, PhD, Fabíola Dach, PhD,* Lidiane L. Florencio, MSc,† Gabriela F. Carvalho, MSc,† Maria C. Gonçalves, PhD,† Marcelo E. Bigal, PhD,‡ José G. Speciali, PhD,* and Débora Bevilaqua-Grossi, PhD†*

TABLE 4. Patient-reported Cutaneous Allodynia Obtained by 12-Item Allodynia Symptom Checklist

ASC-12	Control (n = 20)	TMD (n = 20)	Migraine (n = 20)	TMD + Migraine (n = 20)
Allodynia symptoms subgroups	NA	NA	6.95 (5.35-8.55)	9.53 (7.45-11.60)***
Without allodynia symptoms	NA	NA	15% (n = 3)	10% (n = 2)
With allodynia symptoms	NA	NA	85% (n = 17)*	90% (n = 18)*
Mild	NA	NA	25% (n = 5)	10% (n = 2)
Moderate	NA	NA	25% (n = 5)	15% (n = 3)
Severe	NA	NA	35% (n = 7)	65% (n = 13)**
ASC-12 domains	NA	NA		
Static mechanical	NA	NA	2.60 (1.97-3.23)	2.89 (2.21-3.58)
Dynamic mechanical	NA	NA	1.60 (0.93-2.27)	3.16 (2.28-4.04)***
Thermal domain	NA	NA	2.75 (1.74-3.76)	3.47 (2.27-4.68)

Data are given as mean values (95% confidence interval) and percentage of cases classified in each category.
Score of ASC-12 items: 0 to 2 points (does not apply to me, never, or rarely = 0; sometimes yes and sometimes no = 1; mostly = 2).
Total score: 0 to 2 = no allodynia; 3 to 5 points = mild allodynia; 6 to 8 points = moderate allodynia; ≥9 points = severe allodynia.
*Difference in relation to the subjects without symptoms.
ASC-12 indicates 12-item Allodynia Symptom Checklist; NA, not applicable (because the questionnaire measures allodynia in relation to the presence of headache); TMD, temporomandibular disorders.
**Comparison between migraine versus migraine + TMD, χ^2 test (Fisher exact correction, $P < 0.05$).
***Student t test ($P < 0.05$), comparison of migraine versus migraine + TMD.

Cefalea/cervicalgia e TMD

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Temporomandibular disorders and neck pain in primary headache patients: a retrospective machine learning study

Martina Ferrillo, Mario Migliario, Nicola Marotta, Francesco Fortunato, Marino Bindi, Federica Pezzotti, Antonio Ammendolia, Amerigo Giudice, Pier Luigi Foglio Bonda & Alessandro de Sire

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Cefalea/cervicalgia e TMD

- Pazienti affetti da emicrania, cefalea muscolo-tensiva ed altre cefalee primarie
- Diagnosi di TMD attraverso criteri standardizzati
- Neck pain evaluation
- Valutazione RMN

Cefalea/cervicalgia e TMD

Table 1. Differences in outcome measures according to the diagnosis of primary headache in the sample ($n = 300$).

	TTH ($n = 101$)	Migraine ($n = 54$)	Other primary headaches ($n = 145$)	TTH vs migraine *p*-value	TTH vs other primary headaches *p*-value	Migraine vs other primary headaches – *p*-value
Diagnosis of TMD	64 (63.37%)	39 (72.22%)	80 (55.17%)	.271	.200	.030*
Myogenous TMD	*25 (24.75%)*	*21 (38.89%)*	*29 (20.00%)*	*.288*	*.452*	*.049**
Arthrogenous TMD	*16 (15.84%)*	*9 (16.67%)*	*26 (17.93%)*	*.266*	*.444*	*.040**
Mixed TMD	*23 (22.77%)*	*9 (16.67%)*	*25 (17.24%)*	*.233*	*.456*	*.041**
TMD VAS	4.39 ± 1.68	6.03 ± 2.11	5.54 ± 1.59	.002*	.452	.003*
Presence of neck pain	68 (67.33%)	40 (74.07%)	83 (57.24%)	.381	.117	.032*
Neck pain VAS	6.19 ± 1.52	6.65 ± 3.01	5.21 ± 1.44	.030*	.001*	.001*
ADDWR	29 (28.71%)	14 (25.93%)	31 (21.38%)	.713	.593	.501
Monolateral	*21 (20.79%)*	*11 (20.37%)*	*25 (17.24%)*	*.662*	*.512*	*.498*
Bilateral	*8 (7.92%)*	*3 (5.56%)*	*6 (4.14%)*	*.729*	*.582*	*.453*
ADDWoR	13 (12.87%)	5 (9.26%)	21 (14.48%)	.187	.196	.543
Monolateral	*10 (9.90%)*	*3 (5.55%)*	*14 (9.66%)*	*.116*	*.099*	*.482*
Bilateral	*3 (2.97%)*	*2 (3.70%)*	*7 (4.83%)*	*.211*	*.150*	*.465*
Hypermobility/ subluxation	9 (8.91%)	5 (9.26%)	16 (11.03%)	.941	.594	.721
Monolateral	*4 (3.96%)*	*3 (5.55%)*	*7 (4.83%)*	*.923*	*.630*	*.694*
Bilateral	*5 (4.95%)*	*2 (3.70%)*	*9 (6.21%)*	*.876*	*.517*	*.708*
Osteoarthritis/ osteoarthrosis	5 (4.95%)	2 (3.70%)	7 (4.83%)	.723	.198	.732
Monolateral	*3 (2.97%)*	*1 (1.85%)*	*4 (2.76%)*	*.654*	*.170*	*.675*
Bilateral	*2 (1.98%)*	*1 (1.85%)*	*3 (2.07%)*	*.711*	*.192*	*.633*

Continuous variables are expressed as means ± standard deviations; categorical variables are expressed as counts/percentages. Nominal values were tested with X^2; ordinal values were tested with Mann-Whitney test. TTH: tension-type headache; TMD: temporomandibular disorders; VAS: visual analogue scale; ADDWR: anterior disc displacement with reduction; ADDWoR: anterior disc displacement without reduction; *: significant *p* values.

Cefalea/cervicalgia e TMD

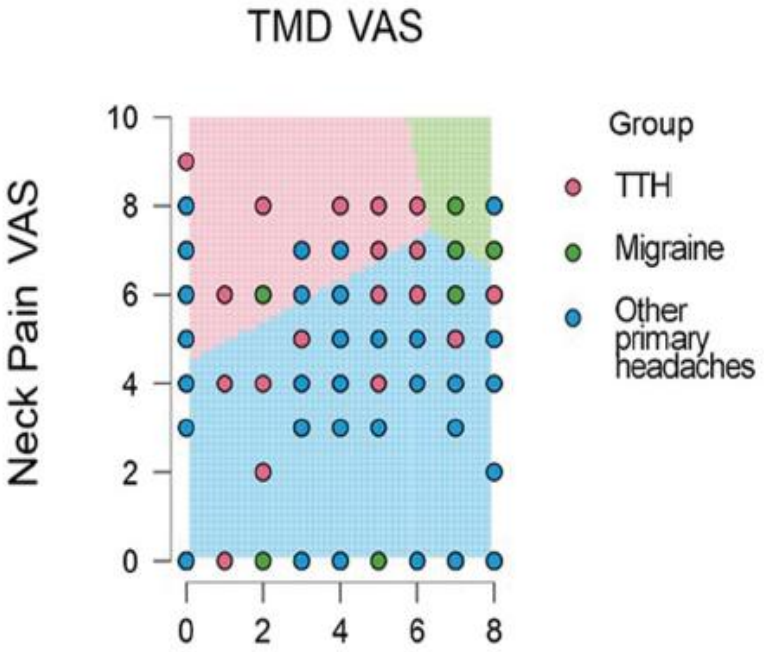

Figure 1. Headache decision Boundary Map. A Decision Boundary Map (DBM) is a 2D image that shows a representation of how space is divided into decision zones based on the two VAS scores.

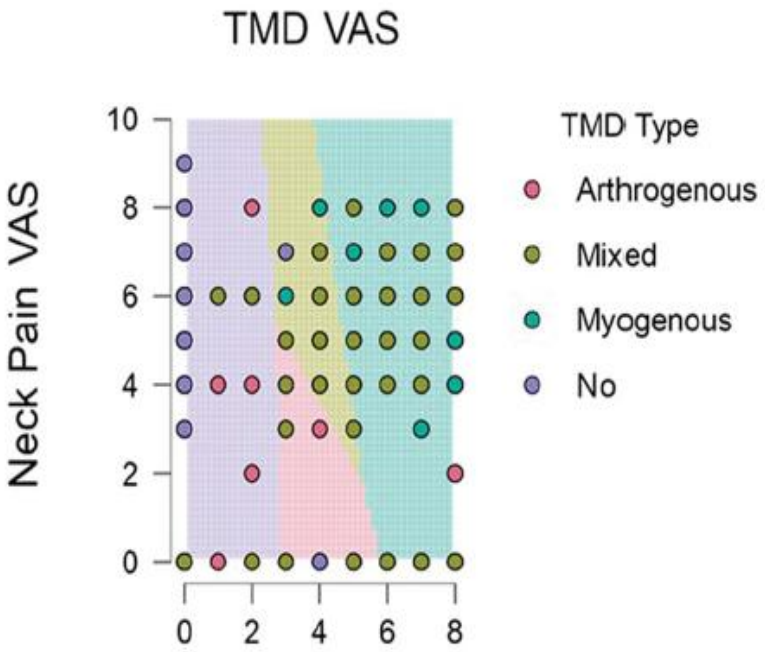

Figure 2. TMD decision Boundary Map. A Decision Boundary Map (DBM) is a 2D image that shows a representation of how space is divided into decision zones based on the two VAS scores.

- *Primary headache reported that a higher TMD VAS was correlated to migraine and a higher neck pain VAS was correlated to TTH or migraine*
- *Concerning the TMD type, arthrogenous and mixed might be correlated to mild-moderate TMD pain (depending on neck pain intensity), and myogenic TMD might be correlated to moderate-severe TMD pain.*

Classificazione ICOP per il Dolore orofacciale

1. Orofacial pain attributed to disorders of dentoalveolar and anatomically related structures
2. Myofascial orofacial pain
3. Temporomandibular joint (TMJ) pain
4. Orofacial pain attributed to lesion or disease of the cranial nerves
5. Orofacial pain resembling presentation of primary headaches
6. Idiopathic orofacial pain
7. Psychosocial assessment of patients with orofacial pain

Classificazione ICOP

1. Orofacial pain attributed to disorders of dentoalveolar and anatomically related structures
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6. Idiopathic orofacial pain
7. Psychosocial assessment of patients with orofacial pain

Classificazione DC/TMD

Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) for Clinical and Research Applications: Recommendations of the International RDC/TMD Consortium Network* and Orofacial Pain Special Interest Group†

Eric Schiffman, DDS, MS
Richard Ohrbach, DDS, PhD
Edmond Truelove, DDS, MSD
John Look, DDS, PhD
Gary Anderson, DDS, MS
Jean-Paul Goulet, DDS, MSD
Thomas List, DDS, Odont Dr
Peter Svensson, DDS, PhD, Dr Odont
Yoly Gonzalez, DDS, MS, MPH
Frank Lobbezoo, DDS, PhD
Ambra Michelotti, DDS
Sharon L. Brooks, DDS, MS
Werner Ceusters, MD
Mark Drangsholt, DDS, PhD
Dominik Ettlin, MD, DDS
Charly Gaul, MD
Louis J. Goldberg, DDS, PhD
Jennifer A. Haythornthwaite, PhD
Lars Hollender, DDS, Odont Dr
Rigmor Jensen, MD, PhD
Mike T. John, DDS, PhD
Antoon De Laat, DDS, PhD
Reny de Leeuw, DDS, PhD
William Maixner, DDS, PhD
Marylee van der Meulen, PhD
Greg M. Murray, MDS, PhD
Donald R. Nixdorf, DDS, MS
Sandro Palla, Dr Med Dent
Arne Petersson, DDS, Odont Dr
Paul Pionchon, DDS, PhD
Barry Smith, PhD
Corine M. Visscher, PT, PhD
Joanna Zakrzewska, MD, FDSRCS!
Samuel F. Dworkin, DDS, PhD

Author affiliations are listed at the end of this article.

Correspondence to:
Dr Eric Schiffman
Department of Diagnostic and Biological Sciences
6-320 Moos Tower
School of Dentistry
University of Minnesota
Minneapolis, MN, USA 55455
Fax: (612) 626-0138
Email: schif001@umn.edu

*International Association for Dental Research.
†International Association for the Study of Pain.

Aims: The original Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) Axis I diagnostic algorithms have been demonstrated to be reliable. However, the Validation Project determined that the RDC/TMD Axis I validity was below the target sensitivity of ≥ 0.70 and specificity of ≥ 0.95. Consequently, these empirical results supported the development of revised RDC/TMD Axis I diagnostic algorithms that were subsequently demonstrated to be valid for the most common pain-related TMD and for one temporomandibular joint (TMJ) intra-articular disorder. The original RDC/TMD Axis II instruments were shown to be both reliable and valid. Working from these findings and revisions, two international consensus workshops were convened, from which recommendations were obtained for the finalization of new Axis I diagnostic algorithms and new Axis II instruments. **Methods:** Through a series of workshops and symposia, a panel of clinical and basic science pain experts modified the revised RDC/TMD Axis I algorithms by using comprehensive searches of published TMD diagnostic literature followed by review and consensus via a formal structured process. The panel's recommendations for further revision of the Axis I diagnostic algorithms were assessed for validity by using the Validation Project's data set, and for reliability by using newly collected data from the ongoing TMJ Impact Project—the follow-up study to the Validation Project. New Axis II instruments were identified through a comprehensive search of the literature providing valid instruments that, relative to the RDC/TMD, are shorter in length, are available in the public domain, and currently are being used in medical settings. **Results:** The newly recommended Diagnostic Criteria for TMD (DC/TMD) Axis I protocol includes both a valid screener for detecting any pain-related TMD as well as valid diagnostic criteria for differentiating the most common pain-related TMD (sensitivity ≥ 0.86, specificity ≥ 0.98) and for one intra-articular disorder (sensitivity of 0.80 and specificity of 0.97). Diagnostic criteria for other common intra-articular disorders lack adequate validity for clinical diagnoses but can be used for screening purposes. Inter-examiner reliability for the clinical assessment associated with the validated DC/TMD criteria for pain-related TMD is excellent (kappa ≥ 0.85). Finally, a comprehensive classification system that includes both the common and less common TMD is also presented. The Axis II protocol retains selected original RDC/TMD screening instruments augmented with new instruments to assess jaw function as well as behavioral and additional psychosocial factors. The Axis II protocol is divided into screening and comprehensive self-report instrument sets. The screening instruments' 41 questions assess pain intensity, pain-related disability, psychological distress, jaw functional limitations, and parafunctional behaviors, and a pain drawing is used to assess locations of pain. The comprehensive instruments, composed of 81 questions, assess in further detail jaw functional limitations and psychological distress as well as additional constructs of anxiety and presence of comorbid pain conditions. **Conclusion:** The recommended evidence-based new DC/TMD protocol is appropriate for use in both clinical and research settings. More comprehensive instruments augment short and simple screening instruments for Axis I and Axis II. These validated instruments allow for identification of patients with a range of simple to complex TMD presentations. *J Oral Facial Pain Headache 2014;28:6–27. doi: 10.11607/jop.1151*

Key words: *diagnostic criteria, diagnostic reliability, diagnostic validity, sensitivity, specificity, temporomandibular disorders*

Practice Guideline > J Oral Facial Pain Headache. 2014 Winter;28(1):6-27.
doi: 10.11607/jop.1151.

Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) for Clinical and Research Applications: recommendations of the International RDC/TMD Consortium Network* and Orofacial Pain Special Interest Group†

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International RDC/TMD Consortium Network, International association for Dental Research;
Orofacial Pain Special Interest Group, International Association for the Study of Pain

PMID: 24482784 PMCID: PMC4478082 DOI: 10.11607/jop.1151
Free PMC article

Classificazione DC/TMD

- Asse I: valutazione clinica

I. Disordini muscolari

a. Dolore muscolare

b. Dolore muscolare con limitazione in apertura

II. Dislocazioni del disco

a. Dislocazione del disco con riduzione

b. Dislocazione del disco senza riduzione, con limitazione in apertura

c. Dislocazione del disco senza riduzione, senza limitazione in apertura

III. Artralgia, Artrite, Artrosi

a. Artralgia

b. Osteoartrite dell'ATM

c. Osteoartrosi dell'ATM

- Asse II: valutazione psicosociale

CRITERI DIAGNOSTICI (DC/TMD)

- Asse I: valutazione clinica

I. Disordini muscolari

a. Dolore muscolare

b. Dolore muscolare con limitazione in apertura

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- Asse II: valutazione psicosociale

DC/TMD Group I

Myalgia (ICD-9 729.1; ICD-10 M79.1)*

Description		Pain of muscle origin that is affected by jaw movement, function, or parafunction, and replication of this pain occurs with provocation testing of the masticatory muscles.
Criteria	**History**	Positive for both of the following: 1. Pain** in the jaw, temple, in the ear, or in front of ear; AND 2. Pain modified with jaw movement, function or parafunction.
	Exam	Positive for both of the following: 1. Confirmation† of pain location(s) in the temporalis or masseter muscle(s); AND 2. Report of familiar pain‡ in the temporalis or masseter muscle(s) with at least one of the following provocation tests: a. Palpation of the temporalis or masseter muscle(s); OR b. Maximum unassisted or assisted opening movement(s).
Validity		Sensitivity 0.90; Specificity 0.99
Comments		The pain is not better accounted for by another pain diagnosis. Other masticatory muscles may be examined as dictated by clinical circumstances, but the sensitivity and specificity for this diagnosis based on these findings have not been established.

Types of myalgia as differentiated by provocation testing with palpation: Local myalgia, myofascial pain, and myofascial pain with referral

Pain localised to the site of palpation

Report of pain spreading beyond the site of palpation

Report of pain at a site beyond the boundary of the muscle being palpated

DC/TMD Group I

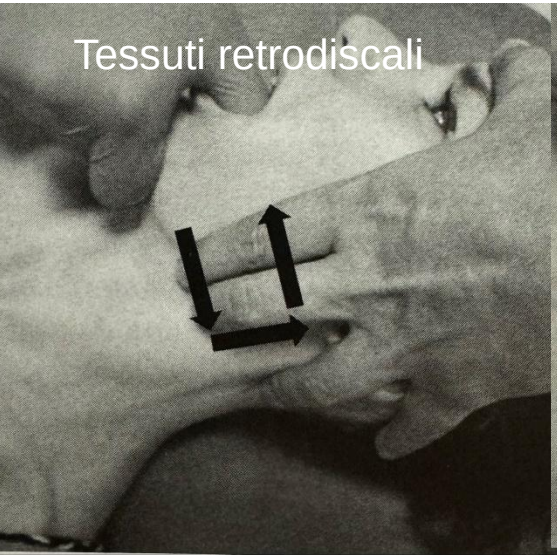
- **Dolore muscolare** localizzato a livello mandibolare, temporale, periaurcolare che è influenzato da movimenti mandibolari, funzioni e parafunzioni. La riproduzione del dolore avviene attraverso **test di provocazione** della muscolatura masticatoria (palpazione e/o apertura della bocca). Sensibilità 0,90 e specificità 0,99.

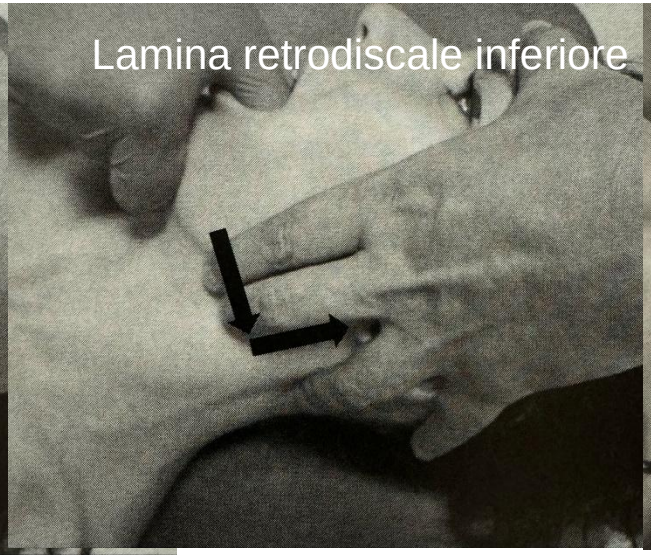
- **Mialgia locale**: dolore localizzato nel sito di palpazione

- **Dolore miofasciale**: dolore diffuso oltre il sito di palpazione ma all'interno dei confini del muscolo

- **Dolore miofasciale riferito**: dolore diffuso oltre i confini del muscolo palpato.

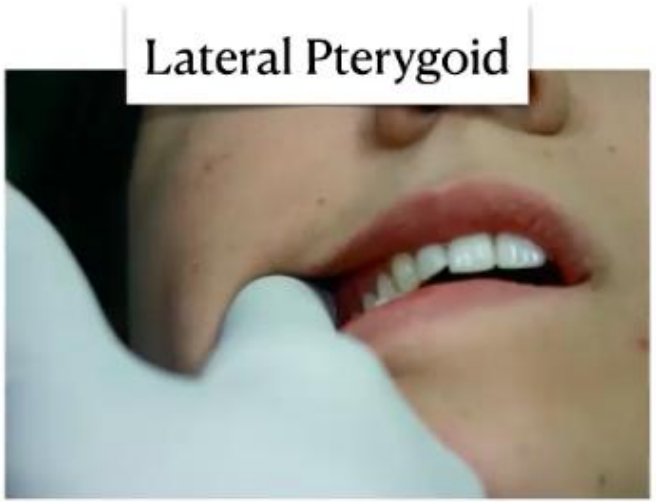
Palpazione ATM secondo Rocabado





Diagnosi

1 kg/2-5s



DC/TMD Group I

Headache attributed to TMD (ICD-9 339.89 and 748.0; ICD-10 G44.89)§		
Description		Headache in the temple area secondary to pain-related TMD (see Note) that is affected by jaw movement, function, or parafunction, and replication of this headache occurs with provocation testing of the masticatory system.
Criteria	**History**	Positive for both of the following: 1. Headache** of any type in the temple; AND 2. Headache modified with jaw movement, function, or parafunction.
	Exam	Positive for both of the following: 1. Confirmation† of headache location in the area of the temporalis muscle(s); AND 2. Report of familiar headache‡ in the temple area with at least one of the following provocation tests: a. Palpation of the temporalis muscle(s); OR b. Maximum unassisted or assisted opening, right or left lateral, or protrusive movement(s).
Validity		Sensitivity 0.89; Specificity 0.87
Comments		The headache is not better accounted for by another headache diagnosis.
Note		A diagnosis of pain-related TMD (eg, myalgia or TMJ arthralgia) must be present and is established using valid diagnostic criteria.

DC/TMD Group I

Headache attributed to TMD (ICD-9 339.89 and 748.0; ICD-10 G44.89)§

Description		Headache in the temple area secondary to pain-related TMD (see Note) that is affected by jaw movement, function, or parafunction, and replication of this headache occurs with provocation testing of the masticatory system.
Criteria	**History**	Positive for both of the following: 1. Headache** of any type in the temple; AND 2. Headache modified with jaw movement, function, or parafunction.
	Exam	Positive for both of the following: 1. Confirmation† of headache location in the area of the temporalis muscle(s); AND 2. Report of familiar headache‡ in the temple area with at least one of the following provocation tests: a. Palpation of the temporalis muscle(s); OR b. Maximum unassisted or assisted opening, right or left lateral, or protrusive movement(s).
Validity		Sensitivity 0.89; Specificity 0.87
Comments		The headache is not better accounted for by another headache diagnosis.
Note		A diagnosis of pain-related TMD (eg, myalgia or TMJ arthralgia) must be present and is established using valid diagnostic criteria.

DC/TMD Group I

- La **cefalea da disordini temporomandibolari** è una cefalea localizzata a livello delle tempie, secondaria a disordini temporomandibolari, e che è influenzata da movimenti mandibolari, funzioni e parafunzioni.

- La riproduzione del mal di testa (dolore familiare) avviene attraverso test di provocazione della muscolatura masticatoria (palpazione e/o apertura della bocca). Sensibilità 0,89 e specificità 0,87.

- È stato anche descritto dalla International Classification of Headache Disorders III (ICHD-III) come "**mal di testa o dolore facciale attribuito a disordini temporomandibolari**".

DC/TMD Group II

- Asse I: valutazione clinica

I. Disordini muscolari

a. Dolore muscolare

b. Dolore muscolare con limitazione in apertura

II. Dislocazioni del disco

a. Dislocazione del disco con riduzione

b. Dislocazione del disco senza riduzione, con limitazione in apertura

c. Dislocazione del disco senza riduzione, senza limitazione in apertura

III. Artralgia, Artrite, Artrosi

a. Artralgia

b. Osteoartrite dell'ATM

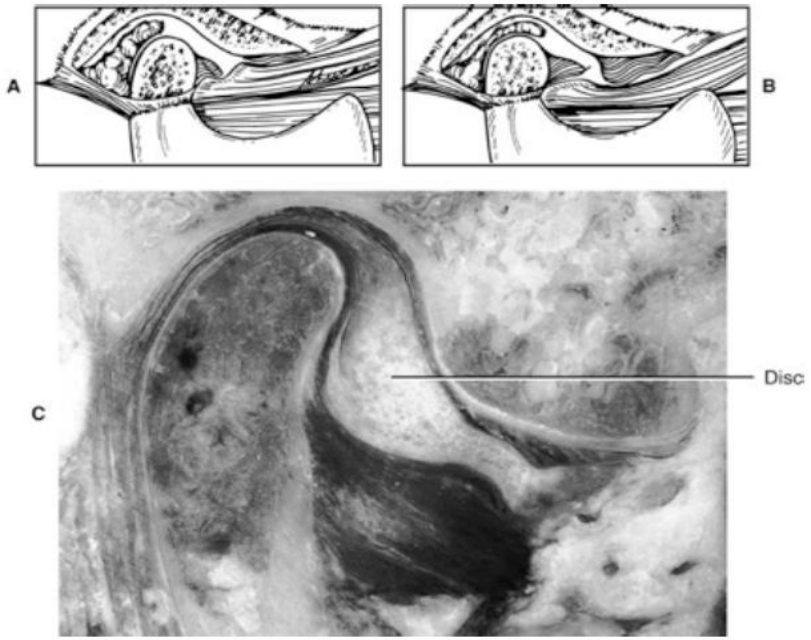
c. Osteoartrosi dell'ATM

- Asse II: valutazione psicosociale

Dislocazione del disco

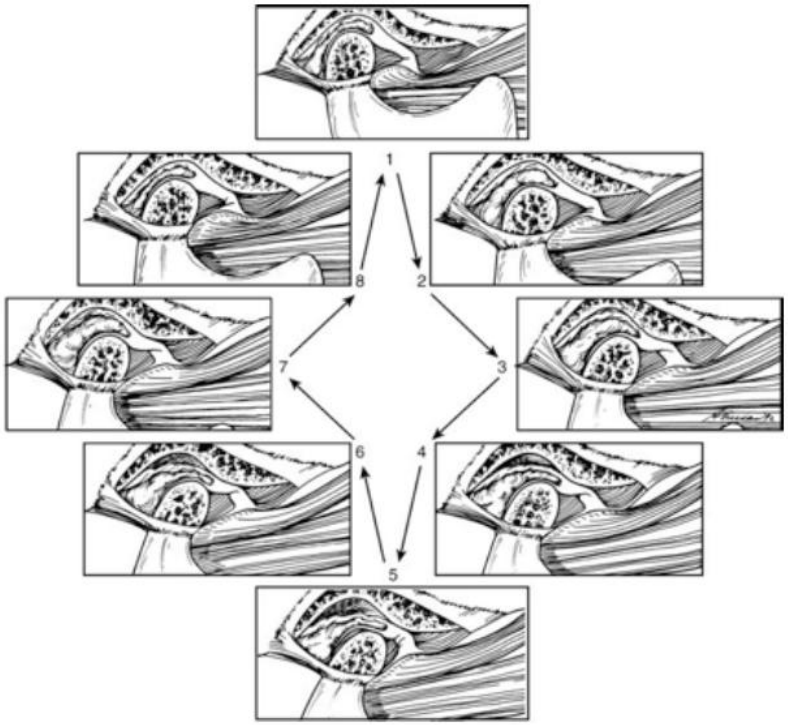
- Dislocazione anteriore mediale o laterale del disco a bocca chiusa. Rumori tipo click, pop, schiocco.

- La diagnosi clinica ha una sensibilità di 0,38 e specificità di 0,98 e *l'imaging* della articolazione è considerato lo standard.



Dislocazione senza ricattura del disco

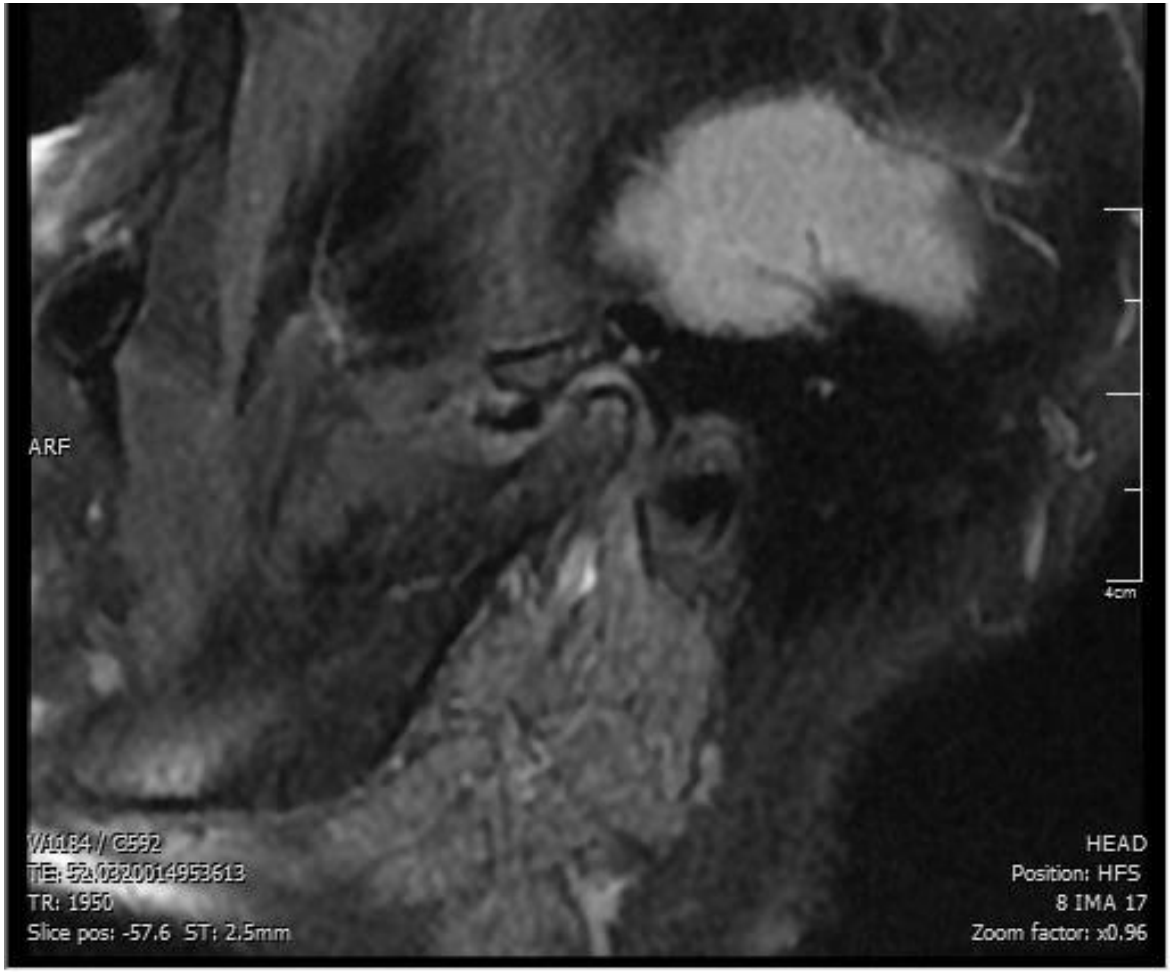
- Dislocazione anteriore mediale o laterale del disco a bocca chiusa. Apertura mandibolare ridotta. (<40mm). Blocco in chiusura.
- La diagnosi clinica ha una sensibilità di 0,80 e specificità di 0,97 e *l'imaging* della articolazione è considerato lo standard.



Risonanza magnetica (RMN)

Bocca chiusa

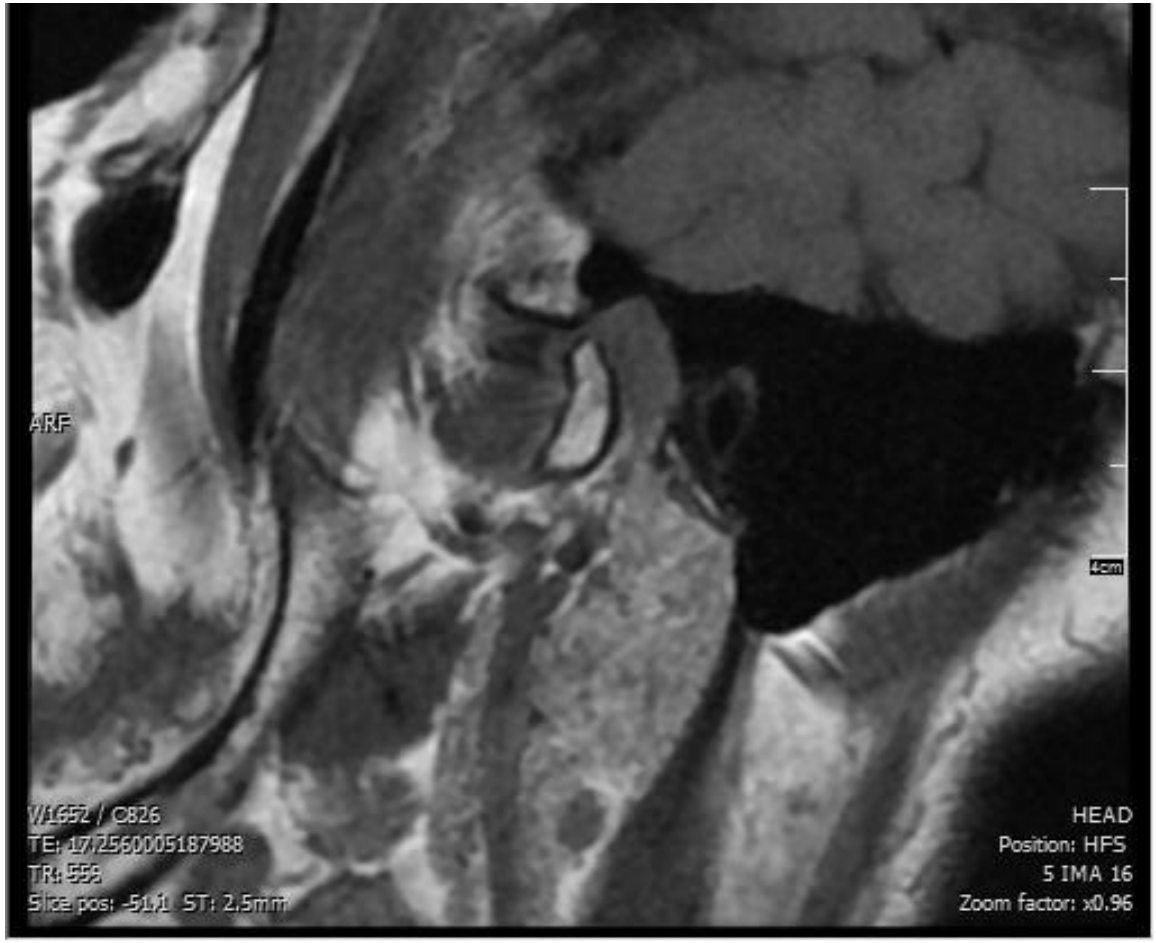
Dislocazione anteriore del disco



Risonanza magnetica (RMN)

Bocca aperta

No Riduzione/ricattura del disco



Sublussazione / Lussazione

- A bocca aperta il complesso condilo-disco è posizionato anteriormente alla eminenza articolare e non è in grado di tornare nella posizione normale senza una specifica manovra manipolativa.

- Se il paziente non riesce a ridurre la dislocazione in maniera autonoma si tratta di una lussazione (completa dislocazione). Blocco in apertura. Senza *imaging*, sensibilità 0,98 e specificità 1,00.

CRITERI DIAGNOSTICI (DC/TMD)

- Asse I: valutazione clinica

I. Disordini muscolari

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c. Osteoartrosi dell'ATM

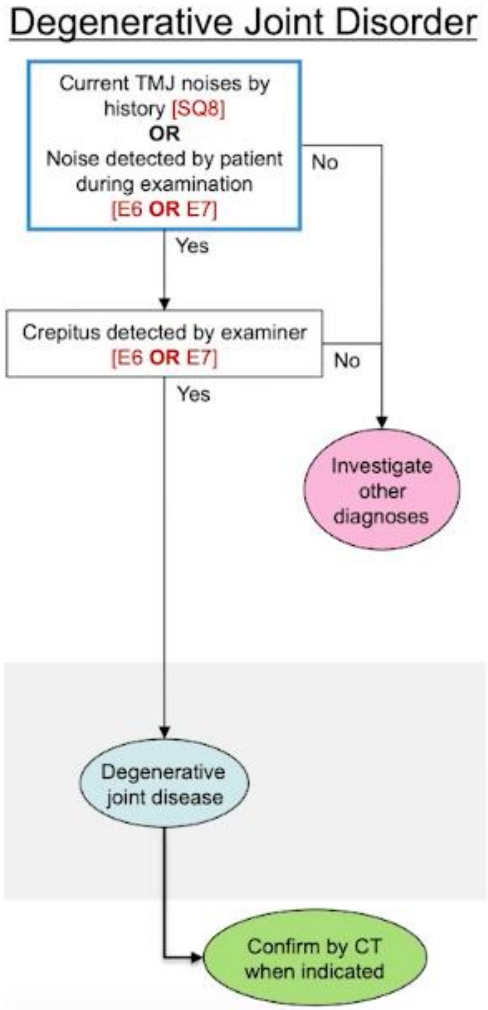
- Asse II: valutazione psicosociale

Patologia degenerativa articolare

- Deterioramento dei tessuti articolari con alterazioni ossee concomitanti a livello del condilo e/o dell'eminenza articolare. Durante la valutazione clinica il rumore di crepitio è rilevato almeno in uno dei seguenti movimenti: apertura, chiusura, lateralità destra o sinistra, protrusione.

- Sensibilità clinica 0,55 e specificità 0,6.

- Discrepanza tra segni clinici ed *imaging*, in quanto la condizione è spesso asintomatica



DC/TMD Group III

DC/TMD Group III

- Patologie progressive e degenerative a carico dell'articolazione temporomandibolare
- Cambiamenti strutturali a carico dei tessuti cartilaginei e ossei
- Associazione con infiammazione cronica a basso grado

CRITERI DIAGNOSTICI (DC/TMD)

- Asse I: valutazione clinica

I. Disordini muscolari

a. Dolore muscolare

b. Dolore muscolare con limitazione in apertura

II. Dislocazioni del disco

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b. Dislocazione del disco senza riduzione, con limitazione in apertura

c. Dislocazione del disco senza riduzione, senza limitazione in apertura

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a. Artralgia

b. Osteoartrite dell'ATM

c. Osteoartrosi dell'ATM

- Asse II: valutazione psicosociale

Asse II: valutazione psicosociale

- Scala del dolore cronico GCPS Versione 2.0
- Scala della limitazione funzionale mandibolare (JFLS-8)
- Scala della limitazione funzionale mandibolare (JFLS-20)
- Questionario sulla salute del paziente (PHQ-4)
- Questionario sulla salute del paziente (PHQ-9)
- Generalized anxiety disorder (GAD-7)
- Questionario sulla salute del paziente (PHQ-15)
- Lista dei comportamenti orali (OBC)

Schiffman E et al. J Oral Facial Pain Headache 2014
Von Korff M. Handbook of Pain Assessment 2011.
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Trattamenti riabilitativi dei TMD

- L'intervento farmacologico per il dolore orofacciale cronico può comportare l'uso di diverse classi di farmaci, a seconda della causa sottostante e del tipo di dolore

- Gli agenti farmacologici che hanno dimostrato di essere utili per queste malattie includono analgesici, antidepressivi triciclici, inibitori della ricaptazione della noradrenalina o serotonina, gabapentin, pregabalin, oppioidi e cerotti di lidocaina

REVIEW ARTICLE

Management protocols of chronic Orofacial Pain: A Systematic Review

Harsh Priyank [a], Ravi Shankar Prasad [a], Sahana Shivakumar [b,*], Nishath Sayed Abdul [c], Anuja Pathak [b], Gabriele Cervino [d], Marco Cicciù [e,*], Giuseppe Minervini [f,*]

[a] *Department of Conservative, Endodontics & Aesthetic Dentistry, Dental College, Rajendra Institute of Medical Sciences, India*
[b] *Public Health Dentistry, Peoples College of Dental Sciences and Research Centre, Peoples University, Bhopal, India*
[c] *Oral and Maxillofacial Surgery and Diagnostic Sciences, College of Dentistry, Riyadh Elm University, Riyadh, Saudi Arabia*
[d] *School of Dentistry Department of Biomedical and Dental Sciences and Morphofunctional Imaging, University of Messina, via Consolare Valeria, 1, 98125 Messina, Italy*
[e] *Department of General Surgery and Medical-Surgical Specialties, School of Dentistry, University of Catania, Catania, Italy*
[f] *Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania, Luigi Vanvitelli, 80138 Naples, Italy*

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- **Farmacoterapia – FANS**

> Cranio. 2022 Feb 7:1-10. doi: 10.1080/08869634.2022.2031688. Online ahead of print.

Oral nonsteroidal anti-inflammatory drugs as treatment of joint and muscle pain in temporomandibular disorders: A systematic review

Federica Montinaro [1], Ludovica Nucci [1], Fabrizia d'Apuzzo [1], Letizia Perillo [1], Maria Chiara Chiarenza [1], Vincenzo Grassia [1]

Affiliations – collapse

Affiliation

1 Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy.

Trattamenti riabilitativi dei TMD

nimesulide 2x100 mg/24 h for 14 days
sodium diclofenac 2x50 mg/24 h for 10 days
piroxicam 20 mg/24 h for 10 days

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Abstract

Objective: To evaluate pain control in patients with joint and muscle pain in temporomandibular disorder (TMD) diagnosis treated with oral non-steroidal anti-inflammatory drugs (NSAIDs).

Methods: The systematic research was conducted via Pubmed, Scopus, Web of Science, Google Scholar, and Cochrane databases.

Results: Four full-text randomized-controlled trials (RCTs) were considered eligible. This systematic review included 164 patients whose VAS scores were assessed before and after therapy. In the selected studies, a strong heterogeneity in the diagnosis and in the use of different types and prescriptions of NSAIDs was highlighted. These limitations had to be considered to understand whether a clinical recommendation could be made. Eventually, all patients treated with NSAIDs showed an improvement in pain.

Conclusion: The use of oral NSAIDs as the first approach to control joint and muscle pain is sustained by the current scientific literature, but further investigations on this topic are still needed.

Keywords: Non-steroidal anti-inflammatory agents; muscle pain; oral drug administration; temporomandibular joint disorders; visual analog pain scale.

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Trattamenti riabilitativi dei TMD

- **Farmacoterapia – FANS**

Review > J Dent Anesth Pain Med. 2020 Dec;20(6):337-356.
doi: 10.17245/jdapm.2020.20.6.337. Epub 2020 Dec 28.

Efficacy of topical interventions for temporomandibular disorders compared to placebo or control therapy: a systematic review with meta-analysis

Mariam Mena [1], Lana Dalbah [1 2], Lauren Levi [1 3], Mariela Padilla [4], Reyes Enciso [5]

Trattamenti riabilitativi dei TMD

Abstract

This systematic review focused on the efficacy of topical products in reducing temporomandibular joint disorder (TMD)-associated pain, in comparison to placebo or control interventions. The EMBASE, Web of Science, Cochrane Library, and MEDLINE via PubMed databases were searched for randomized controlled trials (RCTs) using topical interventions in adults diagnosed with TMD. The pain intensity was the primary outcome, and other clinical findings were the secondary outcomes. The risk of bias was evaluated according to the Cochrane's handbook. The search up to February 7, 2020 identified a total of 496 unduplicated references. Nine RCTs with 355 adult patients diagnosed with TMD were included. The meta-analysis did not show a significant reduction in baseline pain intensity in the nonsteroidal anti-inflammatory drug (NSAIDs) group, when compared to the placebo group (P = 0.288). One study demonstrated a statistically significant pain score decrease for Theraflex-TMJ compared to placebo after 10 d of treatment (P = 0.003) and follow-up, 5 d after the last application (P = 0.027). Ping On reduced pain at 4 weeks of application (P < 0.001) but not after 7 d of application (P = 0.136). In one study, cannabidiol (CBD) significantly improved the pain intensity compared to placebo (P < 0.001). However, no differences were found with capsaicin in the two studies (P = 0.465). Evidence was of low quality because the studies were considered as having an unclear or a high risk of bias and a small number of studies were analyzed. The evidence is not sufficient to support the use of topical NSAIDs and capsaicin, and limited evidence was found for Threraflex-TMJ, bee venom, Ping On, and CBD, with only one study reporting for each. Additional studies are recommended to validate these results.

Fisioterapia orale

Review > Man Ther. 2016 Feb;21:10-7. doi: 10.1016/j.math.2015.06.009. Epub 2015 Jun 25.

Efficacy of musculoskeletal manual approach in the treatment of temporomandibular joint disorder: A systematic review with meta-analysis

Wagner Rodrigues Martins [1], Juscelino Castro Blasczyk [2], Micaele Aparecida Furlan de Oliveira [3], Karina Ferreira Lagôa Gonçalves [4], Ana Clara Bonini-Rocha [5], Pierre-Michel Dugailly [6], Ricardo Jacó de Oliveira [7]

Affiliations + expand

PMID: 26144684 DOI: 10.1016/j.math.2015.06.009

Review > Phys Ther. 2016 Jan;96(1):9-25. doi: 10.2522/ptj.20140548. Epub 2015 Aug 20.

Effectiveness of Manual Therapy and Therapeutic Exercise for Temporomandibular Disorders: Systematic Review and Meta-Analysis

Susan Armijo-Olivo [1], Laurent Pitance [2], Vandana Singh [3], Francisco Neto [4], Norman Thie [5], Ambra Michelotti [6]

Affiliations + expand

PMID: 26294683 PMCID: PMC4706597 DOI: 10.2522/ptj.20140548

Free PMC article

Review > Phys Ther. 2016 Jan;96(1):9-25. doi: 10.2522/ptj.20140548. Epub 2015 Aug 20.

Effectiveness of Manual Therapy and Therapeutic Exercise for Temporomandibular Disorders: Systematic Review and Meta-Analysis

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Free PMC article

Meta-Analysis > Pain Med. 2020 Oct 1;21(10):2373-2384. doi: 10.1093/pm/pnaa021.

Effect of Manual Therapy and Therapeutic Exercise Applied to the Cervical Region on Pain and Pressure Pain Sensitivity in Patients with Temporomandibular Disorders: A Systematic Review and Meta-analysis

Roy La Touche [1 2 3 4], Sergio Martínez García [1], Beatriz Serrano García [1], Alejandro Proy Acosta [1], Daniel Adraos Juárez [1], Juan José Fernández Pérez [1], Santiago Angulo-Díaz-Parreño [2 5], Ferran Cuenca-Martínez [1 2], Alba Paris-Alemany [1 2 3 4], Luis Suso-Martí [2 6]

Affiliations + expand

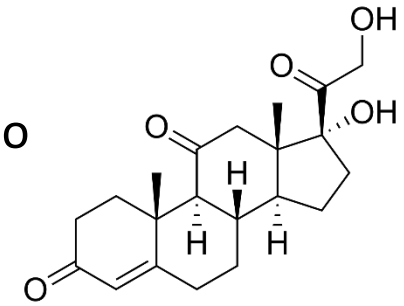
PMID: 32181811 DOI: 10.1093/pm/pnaa021

Fisioterapia orale

- Mobilizzazione articolare attivo-assistita dell'articolazione temporo-mandibolare
- Esercizi di protrusione mandibolare contro resistenza applicata a livello del mento
- Allungamento dei muscoli zigomatico, buccinatore e massetere mediante massaggio endobuccale
- Esercizi di lateralizzazione e protrusione della mandibola
- Esercizi mediante lateralizzazione della lingua contro una resistenza manuale
- Allungamento muscolare
- Allungamento con metodica PNF del muscolo trapezio e del muscolo scaleno
- Rieducazione del rachide cervicale

Terapia infiltrativa

- Corticosteroidi (triamcinolone, per infiltrazione intra-articolare)



- Acido ialuronico (per infiltrazione intra-articolare, a basso peso molecolare, circa 1 ml) e artrocentesi/lavaggi

Terapia infiltrativa

Received: 8 July 2023 | Revised: 2 August 2023 | Accepted: 8 August 2023

DOI: 10.1111/joor.13571

REVIEW

JOURNAL OF ORAL REHABILITATION

WILEY

Hyaluronic acid injections for pain relief and functional improvement in patients with temporomandibular disorders: An umbrella review of systematic reviews

Francesco Agostini[1,2] | Martina Ferrillo[3] | Andrea Bernetti[4] | Nikolaos Finamore[1] | Massimiliano Mangone[1] | Amerigo Giudice[3] | Marco Paoloni[1] | Alessandro de Sire[5,6]

- I risultati di questa revisione generale l'efficacia delle iniezioni IA HA in termini di riduzione dell'intensità del dolore e miglioramento del funzionamento nei pazienti affetti da TMD.
- Inoltre, non esiste accordo sull'efficacia di una combinazione di artrocentesi o artroscopia con iniezioni di IA HA.

Terapie fisiche

Review > J Back Musculoskelet Rehabil. 2022;35(5):921-936. doi: 10.3233/BMR-210236.

Efficacy of rehabilitation on reducing pain in muscle-related temporomandibular disorders: A systematic review and meta-analysis of randomized controlled trials

Martina Ferrillo [1], Antonio Ammendolia [2], Sergio Paduano [1], Dario Calafiore [3], Nicola Marotta [2], Mario Migliario [4], Leonzio Fortunato [1], Amerigo Giudice [1], Ambra Michelotti [5], Alessandro de Sire [2]

Affiliations + expand

PMID: 35213347 DOI: 10.3233/BMR-210236

Terapie fisiche

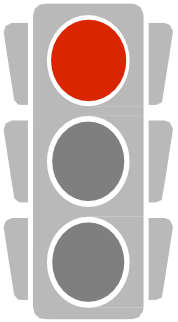
Tutti gli studi randomizzati sono stati valutati per l'elegibilità in base al seguente modello di partecipanti, intervento, confronto e risultati (PICO):

P) Participants pazienti con diagnosi di TMD di origine muscolare (gruppo Ia e Ib), secondo la classificazione DC/TMD;

I) Intervention consisteva in approcci conservativi volti a ridurre il dolore (ad esempio terapia fisica, TENS, laserterapia, splint occlusali, dry needling dei punti trigger, agopuntura, elettrolisi percutanea con ago (PNE), ozono terapia, terapia con onde d'urto extracorporee (ESWT);

C) Comparison placebo o sham treatment;

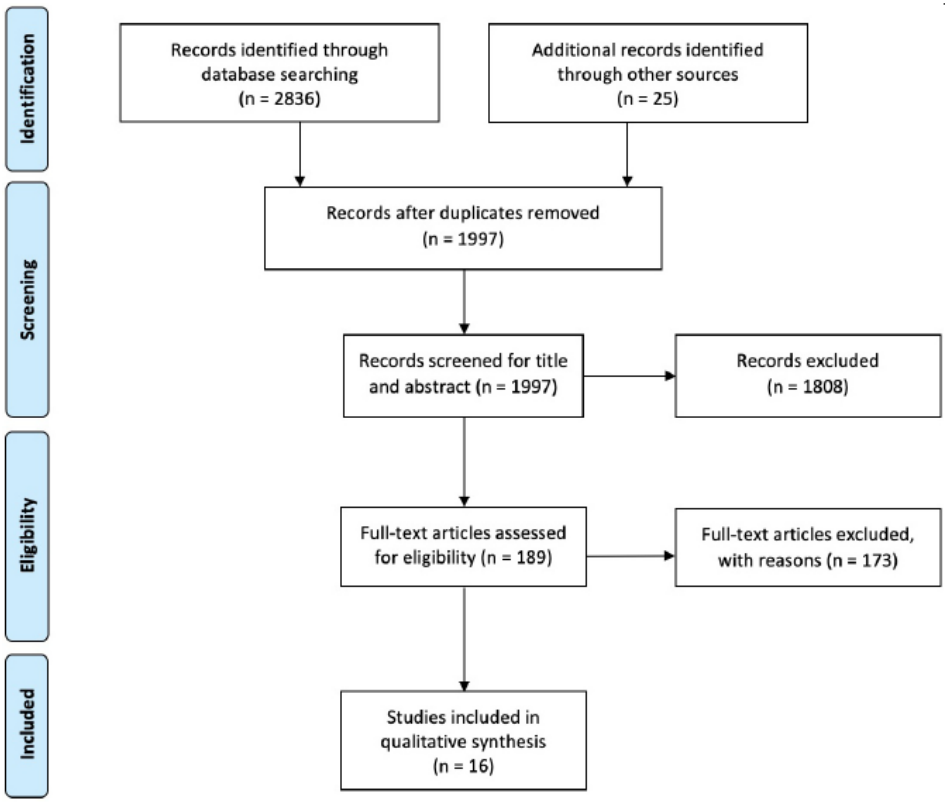
O) Outcome intensità del dolore, utilizzando la visual analogue scale (VAS) o la numerical rating scale (NRS).



- pazienti con TMD intracapsulare (Gruppo II e III) o TMD mista
- bambini o adolescenti durante l'accrescimento
- storia di traumi dell'ATM e anomalie congenite o condizioni neoplastiche nella regione dell'ATM
- pazienti affetti da disturbi infiammatori o malattie reumatiche (ad es. artrite reumatoide, artrite psoriasica)
- pazienti con fibromialgia e mal di testa/emicrania
- studi su animali

Terapie fisiche

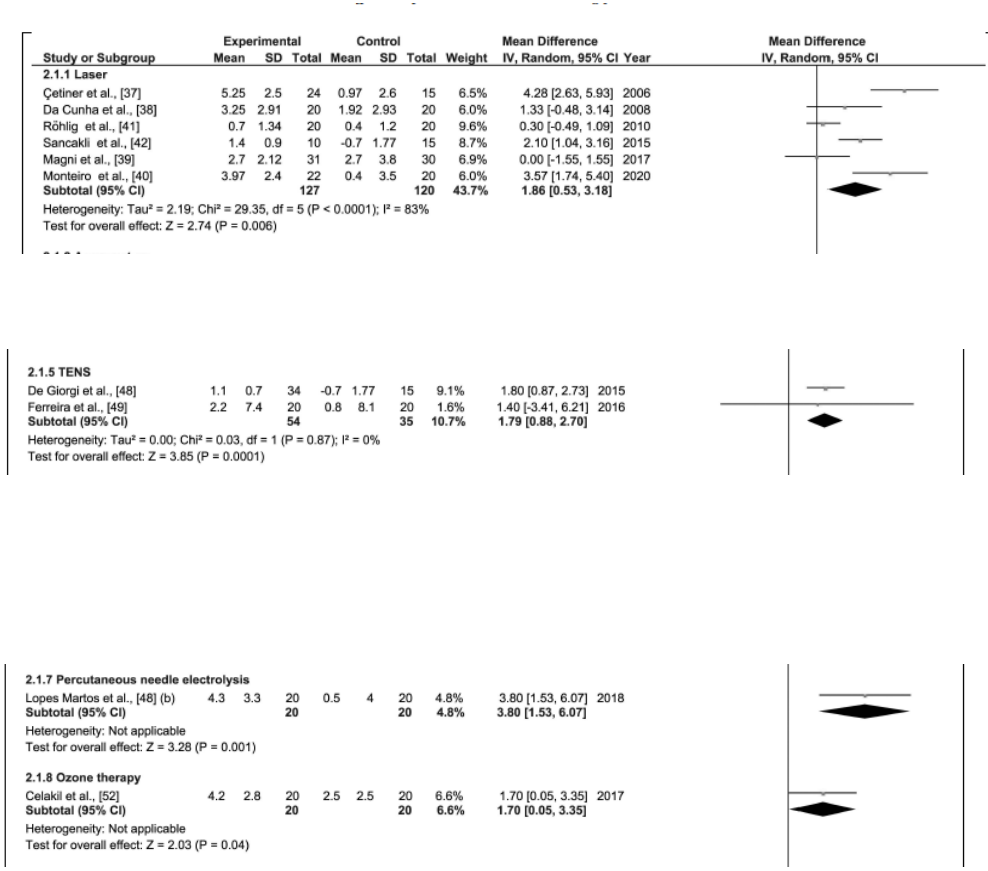
- Dei 2836 record identificati dai database, **16 RCT** sono stati inclusi in questa revisione sistematica, come illustrato dal diagramma di flusso PRISMA 2020
- Sono stati analizzati un **totale di 663 soggetti,** di cui 357 sono stati assegnati ai gruppi di intervento e 306 sono stati inclusi nel gruppo di controllo (sottoposti a sham therapy, placebo)



Terapie fisiche

- La meta-analisi ha mostrato che tutti questi approcci riabilitativi avevano un effect size complessivo di 1,44 ([0,8–2,1], p <0,0001) nel ridurre il dolore miofasciale in termini di VAS nei pazienti con TMD.

- Nell'analisi dei sottogruppi, è stata osservata un effect size significativo per **laserterapia** (ES = 1,86 [0,5–3,1], p = 0,0001), **TENS** (ES = 1,80 [0,9–2,7], p = 0,0001), **elettrolisi percutanea** (ES = 3,80 [1,53–6,07], p = 0,001) e **ozonoterapia** (ES = 1,7 [0,05–3,35], p = 0,04) rispetto al placebo o alla sham therapy

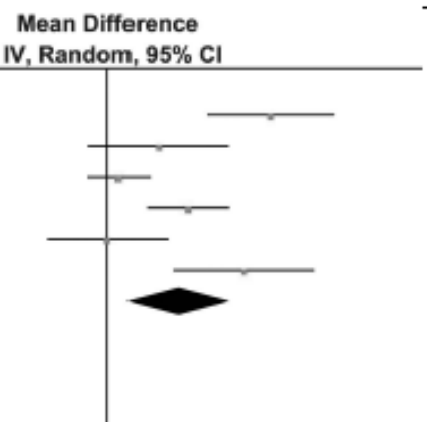


Terapie fisiche

- I risultati della meta-analisi hanno mostrato l'efficacia dell'approccio conservativo, in particolare della terapia laser (**LLLT**). Sembra che l'efficacia della LLLT sia legata al miglioramento della microcircolazione locale e del flusso linfatico, con conseguente riduzione dell'edema e diminuzione della permeabilità delle membrane delle cellule nervose. La LLLT potrebbe avere un impatto rigenerativo, analgesico e antinfiammatorio.

	Experimental			Control				Mean Difference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	Year
2.1.1 Laser									
Çetiner et al., [37]	5.25	2.5	24	0.97	2.6	15	6.5%	4.28 [2.63, 5.93]	2006
Da Cunha et al., [38]	3.25	2.91	20	1.92	2.93	20	6.0%	1.33 [-0.48, 3.14]	2008
Röhlig et al., [41]	0.7	1.34	20	0.4	1.2	20	9.6%	0.30 [-0.49, 1.09]	2010
Sancakli et al., [42]	1.4	0.9	10	-0.7	1.77	15	8.7%	2.10 [1.04, 3.16]	2015
Magni et al., [39]	2.7	2.12	31	2.7	3.8	30	6.9%	0.00 [-1.55, 1.55]	2017
Monteiro et al., [40]	3.97	2.4	22	0.4	3.5	20	6.0%	3.57 [1.74, 5.40]	2020
Subtotal (95% CI)			**127**			**120**	**43.7%**	**1.86 [0.53, 3.18]**	

Heterogeneity: Tau² = 2.19; Chi² = 29.35, df = 5 (P < 0.0001); I² = 83%
Test for overall effect: Z = 2.74 (P = 0.006)



applied sciences

MDPI

Article

Effects of Radial Extracorporeal Shock Wave Therapy in Reducing Pain in Patients with Temporomandibular Disorders: A Pilot Randomized Controlled Trial

Nicola Marotta [1], Martina Ferrillo [2], Andrea Demeco [3], Vera Drago Ferrante [1], Maria Teresa Inzitari [1], Raffaello Pellegrino [4], Ilaria Pino [1], Ilaria Russo [1], Alessandro de Sire [1,*] and Antonio Ammendolia [1]

1 Department of Medical and Surgical Sciences, University of Catanzaro "Magna Graecia", Via Tommaso Campanella 115, 88100 Catanzaro, Italy; nicola.marotta@unicz.it (N.M.); vera.dragoferrante@gmail.com (V.D.F.); inzitari@unicz.it (M.T.I.); ilaria_p88@hotmail.it (I.P.); ilaria.russo003@gmail.com (I.R.); ammendolia@unicz.it (A.A.)

2 Department of Health Sciences, University of Catanzaro "Magna Graecia", Viale Europa, 88100 Catanzaro, Italy; martinaferrillo@hotmail.it

3 Sant'Anna Crotone Institute, Via Siris, 11, 88900 Crotone, Italy; andreademeco@hotmail.it

4 Antalgic Mini-Invasive and Rehab-Outpatients Unit, Department of Medicine and Science of Aging, University "G. d'Annunzio", Via dei Vestini, 31, 66100 Chieti, Italy; raffaello.pellegrino@ucm.edu.mt

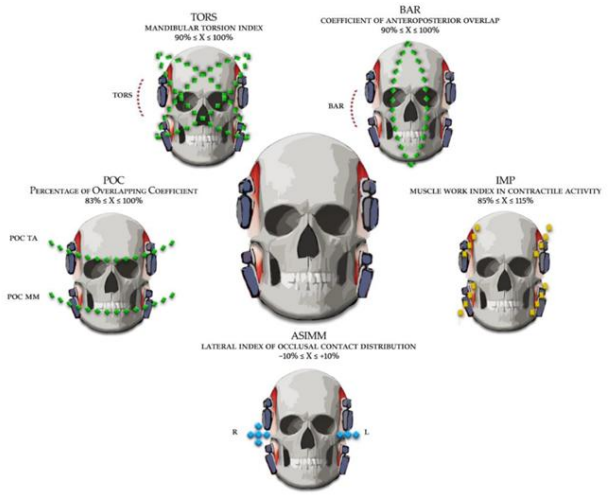
* Correspondence: alessandro.desire@unicz.it; Tel.: +39-0961712819

Trattamenti conservativi

Table 1. Baseline sociodemographic and clinical characteristics.

	Group A (n = 8)	Group B (n = 7)
Sociodemographic characteristics		
Age, years	28.50 ± 8.85	30.71 ± 8.98
Gender, male n (%)	2 (25.00%)	1 (14.29%)
Clinical characteristics		
Additional diagnosis n (%)		
Migraine	2 (25.00%)	2 (28.57%)
Chronic tension-type headache	1 (12.50%)	-

Values are expressed as means ± standard deviations if not otherwise denoted.



Time-points:

T0: baseline

T1: alla fine del trattamento

T2: 12 settimane dopo la fine del trattamento

T3: 24 settimane dopo la fine del trattamento.

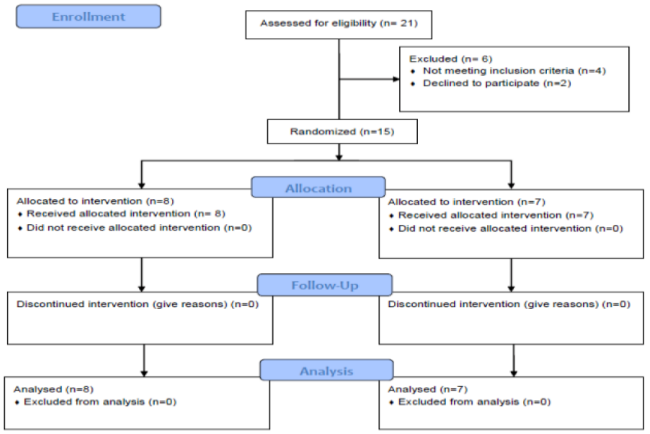


Figure 2. Study flow-chart.

Trattamenti conservativi

Between-Group Differences					
Outcome	*Group A (rESWT)*	*Group B (sham rESWT)*	*p value*	*RBC*	*95%CI*
T0 VAS R	4.71 ± 2.56	3.75 ± 1.71	0.631	0.21	[−0.48, 0.74]
T0 VAS L	4.86 ± 1.57	3.75 ± 1.71	0.384	−0.36	[−0.81, 0.35]
T1 VAS R	1.72 ± 1.89	2.75 ± 1.71	0.040 *	−0.46	[−0.85, 0.23]
T1 VAS L	1.29 ± 1.11	2.50 ± 1.29	0.033 *	−0.64	[−0.91, −0.02]
T2 VAS R	1.71 ± 1.90	2.75 ± 1.71	0.292	0.43	[−0.28, 0.83]
T2 VAS L	1.29 ± 1.11	2.50 ± 1.29	0.102	−0.54	[−0.87, 0.14]
T3 VAS R	1.00 ± 1.83	2.50 ± 1.29	0.031 *	−0.61	[−0.89, 0.04]
T3 VAS L	0.86 ± 1.86	2.50 ± 1.29	0.022 *	−0.68	[−0.92, −0.09]
Intra-Group Differences					
Group A (real rESWT plus physical therapy)			*p value*	*MD*	*SE*
T0 VAS R	4.71 ± 2.56	T1 VAS R	1.71 ± 1.89	0.020 *	3.00	0.59
T1 VAS R	1.71 ± 1.89	T2 VAS R	1.14 ± 1.46	0.452	0.57	0.85
T2 VAS R	1.71 ± 1.90	T3 VAS R	1.00 ± 1.83	0.064	0.71	0.92
T0 VAS L	4.86 ± 1.57	T1 VAS L	1.29 ± 1.11	0.021 *	3.57	0.88
T1 VAS L	1.29 ± 1.11	T2 VAS L	1.29 ± 2.63	0.732	0.00	1.23
T2 VAS L	1.29 ± 1.11	T3 VAS L	0.86 ± 1.86	0.603	0.43	0.89
Group B (sham rESWT plus physical therapy)				*p value*	*MD*	*SE*
T0 VAS R	3.75 ± 1.71	T1 VAS R	2.75 ± 1.71	0.155	1.00	0.56
T1 VAS R	2.75 ± 1.71	T2 VAS R	2.25 ± 0.96	0.501	0.5	0.51
T2 VAS R	2.75 ± 1.71	T3 VAS R	2.50 ± 1.29	0.653	0.25	0.66
T0 VAS L	3.75 ± 1.71	T1 VAS L	2.50 ± 1.29	0.094	1.25	0.26
T1 VAS L	2.50 ± 1.29	T2 VAS L	2.25 ± 0.96	0.689	0.25	0.29
T2 VAS L	2.50 ± 1.29	T3 VAS L	2.50 ± 1.29	0.732	0.01	0.43

Values are expressed as means ± standard deviations. Abbreviations: * = Significant inter-group difference assessed with Mann–Whitney U test; significant intra-group difference, assessed by Wilcoxon paired test; %95 CI: Confidence Interval; L: Left side; MD: Mean difference; R: Right Side; RBC: Rank biserial correlation; SE: Standard Error; VAS: Visual Analogue Scale.

Trattamenti conservativi

	Group A (rESWT)	Group B (Sham rESWT)	*p* Value
POC TA T0	80.7 ± 8.1	81.1 ± 10.5	0.651
POC TA T1	82.0 ± 9.8	78.6 ± 12.0	0.073
POC TA T2	79.7 ± 14.8	75.1 ± 19.4	0.061
POC TA T3	87.0 ± 2.0	84.3 ± 2.8	0.084
POC MM T0	81.2 ± 10.2	80.9 ± 7.7	0.672
POC MM T1	85.9 ± 8.9	81.3 ± 6.4	0.041 *
POC MM T2	84.8 ± 5.2	82.3 ± 3.6	0.331
POC MM T3	84.2 ± 6.1	81.7 ± 6.8	0.103
BAR T0	75.2 ± 19.8	73.7 ± 10.8	0.094
BAR T1	80.5 ± 10.7	75.9 ± 11.9	0.066
BAR T2	81.0 ± 11.7	63.9 ± 14.8	0.032 *
BAR T3	84.4 ± 4.9	67.5 ± 22.8	0.041 *
TORS T0	86.5 ± 5.5	89.9 ± 0.7	0.095
TORS T1	87.8 ± 3.6	89.2 ± 2.8	0.238
TORS T2	86.8 ± 7.2	84.4 ± 8.9	0.145
TORS T3	89.4 ± 3.0	88.6 ± 3.0	0.621
IMP T0	71.9 ± 28.9	87.2 ± 21.5	0.025 *
IMP T1	68.2 ± 20.2	80.3 ± 21.4	0.031 *
IMP T2	84.0 ± 19.0	74.5 ± 12.8	0.047 *
IMP T3	86.9 ± 14.0	77.9 ± 13.0	0.062
ASIM T0	−1.98 ± 13.9	8.72 ± 14.4	0.022 *
ASIM T1	2.35 ± 13.0	10.0 ± 15.4	0.021 *
ASIM T2	0.19 ± 8.1	4.96 ± 11.0	0.566
ASIM T3	2.19 ± 9.5	7.16 ± 9.4	0.431 *

Values are expressed as means ± standard deviations. Abbreviations: *: Significant between-group difference, assessed by Mann–Whitney U test. rESWT: radial Extracorporeal Shock Wave Therapy. ASIM: Asymmetry index. The distribution of the occlusal contacts considering the right and left parts of dental arches BAR: Barycenter as percentage overlapping coefficient between posterior and anterior teeth contact. IMP: Impact index as the work

Take Home Messages

- Il dolore orofacciale e la cefalea cronica sono strettamente correlati, per cui è necessario investigare e trattare i TMD
- L'eziopatogenesi del dolore orofacciale è multifattoriale e possono coesistere condizioni di cefalea, cervicalgia e TMD
- Gli approcci riabilitattivi sono considerati efficaci nel ridurre il dolore nei pazienti con TMD
- La terapia fisioterapica terapie fisiche strumentali (LLLT e ESWT) sono approcci conservativi con un ruolo sulla gestione del dolore orofacciale
- La terapia infiltrativa potrebbe rappresentare sempre di più un valido approccio nei TMD articolari

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EVERYTHING YOU NEED TO KNOW

BOLOGNA
ROYAL HOTEL CARLTON
27 Febbraio - 1 Marzo 2025

Everything you need to know about "Il dolore cronico secondario"

Chronic headache or orofacial pain

Prof. Alessandro de Sire

Professore Associato di Medicina Fisica e Riabilitativa
Consigliere Nazionale della Società Italiana di Medicina Fisica e Riabilitativa (SIMFER)
Referente Regionale Calabria-Basilicata per la Società Italiana GUIDA
Direttore del Master «Terapia riabilitativa del dolore-muscolo-scheletrico e della spasticità»
Dipartimento di Scienze Mediche e Chirurgiche
Università degli Studi «Magna Graecia» di Catanzaro
U.O.C. Medicina Fisica e Riabilitativa, A.O.U. «Renato Dulbecco» di Catanzaro
Email: alessandro.desire@unicz.it