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# National Institute of Dental and Craniofacial Research

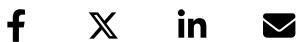
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## Temporomandibular Disorders and Jaw Pain



The most common cause of jaw pain is a group of conditions called temporomandibular disorders (TMDs). These disorders can lead to ongoing or repeated pain and difficulty moving the jaw, affecting the joint, nearby muscles, and supporting tissues. In addition, TMDs can occur alone, or with other medical conditions such as migraines, back pain, sleep problems, fibromyalgia, arthritis, and irritable bowel syndrome. While research on TMDs is ongoing, larger nationwide longitudinal studies are needed to better understand TMDs and how they affect people.

### Prevalence of TMD and Jaw Pain

TMDs are the second most commonly occurring musculoskeletal condition resulting in pain and disability (after chronic low back pain). TMD affects about 5% of adults in the U.S., but this number can vary depending on who is studied and how measured. TMD can be a temporary problem that goes lasting (chronic) condition. Unusual for chronic pain to be higher among young persons between the ages of 20 and 40, and more common in women than men.

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Assessing TMDs in a research setting is complex. TMDs are often measured by asking people about symptoms such as muscle, joint, facial or jaw pain, difficulty chewing, and joint sounds. However, variation in the assessment and reporting of TMDs makes it difficult to determine its precise prevalence.

## ***Table 1: Prevalence of Jaw Pain***

Table 1 presents results from U.S. studies reporting the prevalence of jaw pain along with the methods of measurement.

Source	Pub. Year	Study Population	Study Design	Measure	Prevalance of Jaw Pain
<b>Lipton et al (1), National Health Interview Survey</b> < <a href="https://pubmed.ncbi.nlm.nih.gov/8409001/">https://pubmed.ncbi.nlm.nih.gov/8409001/</a> >	1993	U.S adult civilians	Cross-sectional national household interview survey (self-reported questionnaires)(n=42,370)	"During the past 6 months, pain in the jaw joint or in front of the ear" more than once.	6-month prevalence All: 5.3% Men: 3.5% Women: 6.9%

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Source	Pub. Year	Study Population	Study Design	Measure	Prevalance of Jaw Pain
<b>Plesh et al (2), U.S. National Health Interview Survey</b>					
< <a href="https://pubmed.ncbi.nlm.nih.gov/21359234/">https://pubmed.ncbi.nlm.nih.gov/21359234/</a> >					
2011					
U.S. adult civilians					
Cross-sectional national household interview survey (self-reported questionnaires) (n=189,992)					
"During the past three months, did you have... "facial ache or pain in the jaw muscles or the joint in front of the ear?"					
3-month prevalence					
All: 4.6%					
Men: 2.9%					
Women: 6.1%					
<b>Alkhubaizi et al (3), Osteoarthritis Initiative: A Knee Health study</b>					
< <a href="https://pubmed.ncbi.nlm.nih.gov/30211397/">https://pubmed.ncbi.nlm.nih.gov/30211397/</a> >					
2018					
Subjects with a history of knee pain, age 45 to 79 years					
U.S. national prospective cohort study (self-reported facial pain questionnaire) (n=4,423)					
"Jaw joint or in front of ear, pain or aching, past 30 days"					
"Jaw joint or in front of ear, how many days had pain or aching, past 30 days"					
Baseline prevalence					
Overall: 9.3%					
Women had a 2.4% higher prevalence rate of facial pain compared to men					

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Source	Pub. Year	Study Population	Study Design	Measure	Prevalance of Jaw Pain
<p><b>Yost et al (4), Orofacial Pain: Prospective Evaluation and Risk Assessment study</b></p> <p>&lt;<a href="https://www.ncbi.nlm.nih.gov/books/nbk557996/">https://www.ncbi.nlm.nih.gov/books/nbk557996/</a>&gt;</p> <p>2020</p> <p>U.S. civilians, age 18 to 44</p> <p>Cross-sectional study nested within the parent Orofacial Pain: Prospective Evaluation and Risk Assessment Study (telephone interview, clinical exam, and pain test) (n=846)</p> <p>High-impact orofacial pain (pain in the cheeks, jaw muscles, and/or jaw joints) experienced for at least 6 months</p> <p>6-month prevalence All TMD cases: 33.5% Men: 35.1% Women: 33.0% Combined: 18-24: 27.1% 25-34: 32.8% 35-44: 43.2%</p>					

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Source	Pub. Year	Study Population	Study Design	Measure	Prevalance of Jaw Pain
<b>Yost et al (5), National Health Interview Survey</b> <a href="https://www.ncbi.nlm.nih.gov/books/nbk558001/">https://www.ncbi.nlm.nih.gov/books/nbk558001/</a> 2020 U.S. adults, age 18 to 74 Cross-sectional national household interview survey (face-to-face, computer-assisted personal interviews) (n=52,159) Jaw or face pain that lasted ≥1 day in the past 3 months 3-month prevalence All: 4.8% Men: 3.2% Women: 6.2% Combined: 18-24: 4.2% 25-34: 4.9% 35-44: 5.2% 45-54: 5.4% 55-64: 5.1% 65-74: 3.7%					

## Treatment Needs and Financial Costs Associated with TMDs

Treating TMDs can be costly, and the condition often affects a person's daily comfort and quality of life. There is no single treatment for TMDs as it can have many different causes and symptoms. Treatments need to match the individual patient's needs. Treatment options range from simple approaches such as self-care, pain medication, and physical therapy, to more serious treatments like surgery. Further advances in TMJ research are needed to enhance the quality of care for individuals with TMDs.

Earlier studies suggest that people with TMDs have higher health care costs than those without it. A small proportion of individuals with TMDs account for a large portion of the total health care costs associated with the condition. More research is needed to better understand current health care practices, the cost of care, insurance coverage, and the long-term needs of people living with TMDs.

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## Table 2: Financial Costs Associated with TMD in the U.S.

Table 2 presents results from U.S.-based studies that examined TMD treatment costs.

Source	Pub. Year	Study Population	Study Design	Measure	Results
<b>Shimshak and DeFuria (6)</b> < <a href="https://pubmed.ncbi.nlm.nih.gov/9852811/">https://pubmed.ncbi.nlm.nih.gov/9852811/</a> >	1998	Patients in a claims database of a large New England managed care organization	Cross-sectional study of claims data from one year (1994) (n=1,713 cases and 532,485 unmatched controls)	Overall 1994 health care costs of TMD vs. nonTMD patients	Patients with TMD used more health care services and had higher associated costs than patients without a TMD claim  <b>TMD patients / non-TMD patients</b> All inpatient claims (per 1,000 admissions): 107.4 / 80.7 All costs per patient: \$936 / \$517 All inpatient claims excluding TMD cla (per 1,000

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Source	Pub. Year	Study Population	Study Design	Measure	Results
<b>White et al (7)</b> <a href="https://pubmed.ncbi.nlm.nih.gov/11443827/">https://pubmed.ncbi.nlm.nih.gov/11443827/</a>	2001	TMD patients and matched controls enrolled in a large health maintenance organization	Matched case-control study (n=8,801 cases and 8,801 matched controls)	Compared the use and cost of medical and dental care services for TMD patients and matched controls	TMD cases overall used significantly more health services and had 1.6 times higher costs for all services than controls. Female TMD cases had higher costs than the male TMD cases.

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Source	Pub. Year	Study Population	Study Design	Measure	Results
					<b>Mean outside claim/referral</b> Inpatient: 0.09 / 0.08 Outpatient: 2.66 / 2.14

## Related Links

- Health Info: Temporomandibular Disorders <<https://www.nidcr.nih.gov/health-info/tmd>>
- Learn more about TMD research supported by NIDCR: Research Investments and Advances <<https://www.nidcr.nih.gov/grants-funding/funded-research/research-investments-advances/temporomandibular-disorders>>

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