

# RISK FACTORS AND PROGNOSIS OF CHRONIC MIGRAINE

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## Learning objectives

At the conclusion of this presentation, participants should be able to:

1. Understand the basic epidemiology, impact and natural history of chronic migraine (CM)
2. Discuss migraine comorbidities, exacerbating factors, and disability
3. Explain risk factors for CM onset, and how these influence treatment
4. Recognize barriers to achieving optimal care among people with CM
5. Discuss prevention of CM onset

## Prevalence of Migraine and Tension-type headache

Episodic migraine (EM) occurs in 11% of the population compared to 1% for CM. CM prevalence was highest among females, in mid-life.(1,2)

1. Episodic migraine: 11% overall, with 18% in females and 6% in males
2. Chronic migraine: 0.9% overall, with 1.3% in females and 0.5% in males
3. Episodic tension-type headache: 40% overall, with 41% in females and 39% in males
4. Chronic tension-type headache: 2.2% overall, with 2.2% in females and 2.2% in males

## Impact of Migraine

On 2015 World Health Organization Global Health Estimates of years lost to disability (YLD) migraine ranks fifth of all causes (3). Studies have shown that severe headache-related disability was more common among persons with CM and most common among females with CM. Compared to episodic migraine, chronic migraine is also associated with 1) lower socioeconomic status, 2) Reduced health-related quality of life, 3) higher direct costs and more healthcare resource use, 4) greater headache-related disability, and 5) higher rates of medical and psychiatric comorbidities. (4-10)

Attempts to quantify the impact of migraine on a person's life have resulted in a number of different questionnaires. Disability for migraine is related to frequency, intensity, duration of attacks, as well as to associated symptoms, and these determine a person's ability to function in the home, social settings, workplace, or school. One of the more commonly used tools in the Migraine Disability Assessment (MIDAS) test (11,12), and for children, PedMIDAS test. Other tools include the Henry Ford Disability Index (HDI) which assesses function and emotional domains, and the 6 question Headache Impact Test (HIT-6).

## Migraine comorbidities. (13-20)

Comorbid conditions are increased in CM compared to episodic migraine (EM). Comorbid medical conditions cluster into distinct constellations. Migraine usually starts at an age earlier than other comorbidities, which gives an opportunity to intervene

1. Psychiatric—Anxiety, Depression, Bipolar disorder, post-traumatic stress disorder
2. Pain—Irritable bowel syndrome, fibromyalgia, chronic fatigue syndrome, interstitial cystitis, endometriosis, arthritis, musculoskeletal symptoms
3. Vascular—Stroke, High blood pressure, hyperlipidemia, obesity, Raynaud's syndrome
4. Respiratory—Asthma, hay fever, bronchitis, rhinitis, sinusitis, obstructive sleep apnea
5. Gastrointestinal—Gastroesophageal reflux disease, diarrhea, constipation, nausea

**Progression of migraine.** Chronic migraine develops in individuals with EM at a rate of 2.5% per year. (21)

### **Risk factors for developing CM (22-35)**

1. Headache Features—allodynia (74% in those with CM), and associated with headache attack frequency, attack frequency, disability, nausea with migraines
2. Comorbidities—Depression (severity predicts new onset CM), anxiety, other pain, obesity, asthma, snoring
3. Exogenous factors—stressful life events, head/neck injury, caffeine use, low education/socioeconomic status
4. Treatment-related factors—poor treatment efficacy, medication overuse, and use of barbiturates and opioids predicts new onset CM

### **Potential strategies to prevent CM onset and barriers to treatment (36)**

1. Treatment patterns: Monitor and modify medication use, consider preventive other non-oral treatments, and behavioral interventions (e.g. biofeedback, cognitive behavioral therapy, relaxation training, stress management)
2. Attack frequency: Reduction/prevention with pharmacologic and behavioral interventions
3. Obesity: Weight loss, exercise, and behavioral interventions
4. Stress: Behavioral interventions, exercise, lifestyle modification
5. Snoring: Diagnose and treat sleep apnea, and weight loss
6. Allodynia: Manage migraine attack frequency and treat migraine early
7. Depression: Assess, and treat or refer for treatment with pharmacologic and behavioral therapies
8. Anxiety: Assess, and treat or refer for treatment with pharmacologic and behavioral therapies

### **Summary**

1. EM occurs in 11% of the population compared with 1% for CM
2. CM evolves as a complication of EM (2.5%/year) and is much more disabling
3. Risk increases with certain headache features (allodynia, attack frequency), headache-related disability, comorbidities (anxiety, depression, and obesity), and iatrogenic factors (medication type and frequency of use)

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