THERE IS MORE TO A MIGRAINE THAN JUST A BAD HEADACHE

An Overview of the Burden of Disease and Its Impact on the Workforce

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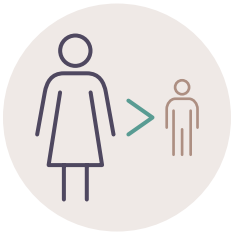
Migraine Is a Common Chronic Condition[1]

Over 37 million Americans suffer from migraine,[2] with incidence peaking during the most productive professional years (ages 25-55 years).[3]

- Of the 37 million, 2% experience chronic migraine, with 15 or more migraine days per month[2]

In the United States, 1 in 4 households has someone dealing with migraine.[2]

For people aged 15 to 49 years, migraine is the top cause of disability.[4]



Women suffer from migraine at a disproportionate rate compared with men, with prevalence estimated at 18% vs 6%, respectively.[3]

- Hormonal changes are believed to be the cause of the disproportionate rate, with up to **60% of these women having migraine attacks around their menstrual cycle**[5]

43% of women and 18% of men will experience migraine at some point in their lives.[6,*]

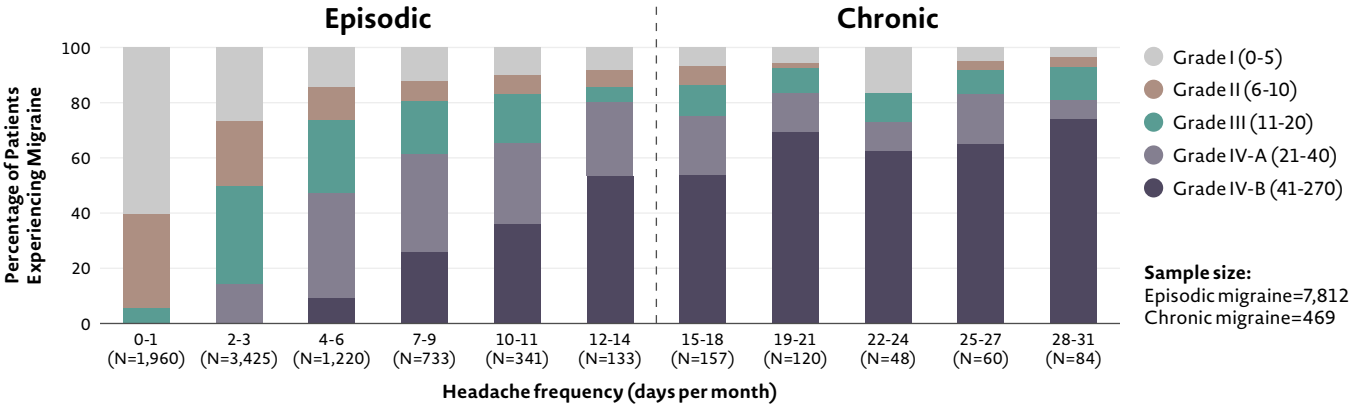
Migraine Is a Primary Headache Disorder Without an Underlying Cause[7]

A migraine's frequency determines its type[8]

Migraine is subdivided into types (**episodic or chronic**), depending on the number of monthly headache days (MHDs).

- **Episodic** migraine occurs **less than 15 days per month**
- **Chronic** migraine occurs **15 or more days per month for more than 3 months**[†]

Percentage of Patients Experiencing Migraine by MHDs[9]



A US study found that chronic migraine–related costs were higher than episodic migraine–related costs. The average annual total costs associated with chronic migraine vs episodic migraine were $8,243 (SD, $10,646) vs $2,649 (SD, $4,634), respectively (*P*<0.001).[10,‡]

SD=standard deviation.

Differences in Episodic vs Chronic Migraine

*Cumulative lifetime incidence.[6]

†Symptoms of migraine headache on at least 8 days per month.[8]

‡Web-based questionnaire surveyed patients with migraine (chronic, n=103; episodic, n=1,101) regarding healthcare resource utilization (direct costs) that occurred due to their headaches and headache-related disability (indirect costs) over the last 3 months. Annual direct costs were calculated by multiplying the frequency of use by its estimated unit cost. Indirect costs applied to losses in work or school time attributable to absenteeism or presenteeism. Costs presented in 2013 US dollars. Key study limitations: results were dependent on participant recall and not verified.[10]

Migraine Classifications Are Determined by Symptoms

According to the International Classification of Headache Disorders (ICHD), there are 2 major migraine classifications[11]:

Migraine with aura is characterized by **1 or more of the following symptoms** that develop gradually[12]:

- Flashes of light
- Blind spots and other vision changes
- Tingling in your hand(s) or face

Migraine without aura is characterized by[13]:

- **Moderate to severe, throbbing headache on 1 side of the head**
- Often, aggravation by routine physical activity
- Sensitivity to light and sound and/or nausea with or without vomiting

Approximately one-third of people with migraine experience migraine with aura.[7]

The distinction between episodic and chronic migraine drives treatment choices, whereas the distinction between migraine with and without aura may have implications regarding comorbidity, assessment of risk factors, and prognosis.[7]

As part of a migraine education program, include prevalence statistics and general education on migraine to raise awareness of this common chronic condition.

It Can Be Difficult to Diagnose Migraine[7]

There are no blood, imaging, or interventional tests available to confirm a migraine diagnosis; therefore, migraine is diagnosed based on clinical symptoms. Healthcare providers (HCPs) use screening questionnaires and symptoms to determine if a patient is suffering from migraine.

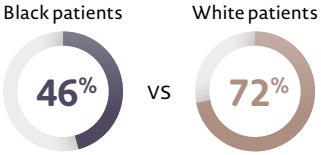
- Only **56%** of people with migraine **receive a diagnosis**[14]

Only one-third of individuals with migraine speak with their HCPs about their headaches. In a population-based survey for migraine diagnosis, approximately 50% of individuals with migraine were not aware of their diagnosis.[15,16]

Racial Disparities in Migraine Care Exist[17]

Among patients with headaches:

- Only **46% of Black patients seek help from HCPs** compared with **72% of White patients**

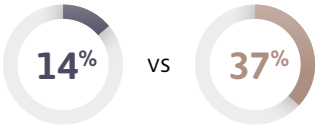


This is due to a variety of factors such as discrimination, cost, mistrust of the healthcare system, and lack of access.

- Only **47% of Black patients have an official headache diagnosis** compared with **70% of White patients**

This is significant because patients without a migraine diagnosis cannot receive migraine-specific therapy.

- Only **14% of Black patients receive prescriptions for acute treatment**, compared with **37% of White patients**



To promote migraine awareness and early detection, post a migraine screening questionnaire on your company's employee resource site.

- Include additional resources related to appropriate connections to care to drive timely treatment
- Provide directions on how to access the resource site in your employee migraine education program

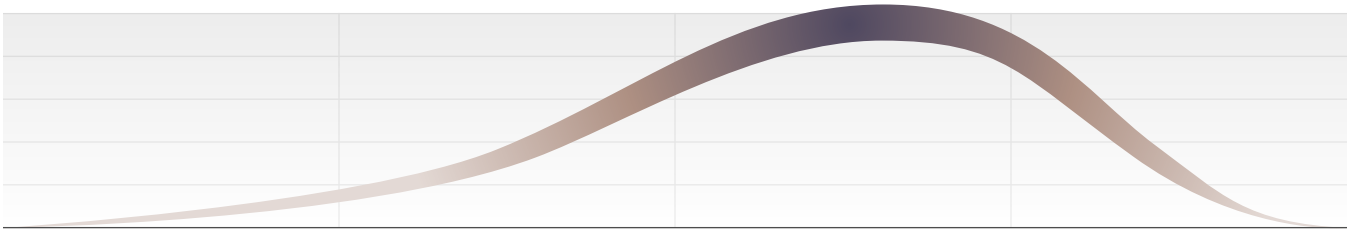
In companies that have established on-site medical homes, consider implementing the use of migraine screening questionnaires, such as the ID Migraine tool, to prompt timely next-step care planning.

- Employees with results indicative of migraine should visit the company's resource site to find additional migraine resources, as well as information about migraine specialists in the company's network

Migraine Attacks Present in Phases, Each Posing Its Own Burden, Impacting Your Employee's Quality of Life[18]

Migraine is considered the second most disabling disease in the world, yet it is often underrecognized and undertreated. As a result, patients suffering from migraine may have increased functional impairment and reduced quality of life.[19]

The 4 Phases of Migraine Attacks[20]



Prodrome
FEW HOURS TO DAYS

- Irritability
- Depression
- Yawning
- Increased need to urinate
- Food cravings
- Sensitivity to light/sound
- Problems in concentrating
- Fatigue and muscle stiffness
- Difficulty in speaking and reading
- Nausea
- Difficulty in sleeping

Aura
5-60 MINUTES

- Visual disturbances
- Temporary loss of sight
- Numbness and tingling on part of the body

Headache
4-72 HOURS

- Throbbing
- Drilling
- Icepick in the head
- Burning
- Nausea
- Vomiting
- Giddiness
- Insomnia
- Nasal congestion
- Anxiety
- Depressed mood
- Sensitivity to light, smell, sound
- Neck pain and stiffness

Postdrome
24-48 HOURS

- Inability to concentrate
- Fatigue
- Depressed mood
- Euphoric mood
- Lack of comprehension

Risk factors for migraine disease progression[21-23]:

- **Nonmodifiable:** age, gender (female), lower socioeconomic status, marital status (previous marriage)
- **Modifiable:** obesity, sleep problems, comorbid pain, head or neck injury, major life events, smoking, caffeine intake, depression, medication overuse, poor acute attack management

Approximately 80% of individuals with migraine report stress as the most common trigger.[24]

The Migraine Disease Report 2021, assessing stigma and burden from a human resources (HR) and patient perspective, concluded (from n=309 responses)[25]:

64% **64%** of HR professionals report that employees who suffer from migraine disease have **sometimes, often, or always worked during migraine attacks**

1% However, only **1%** of participants say **migraine attacks do not impact their ability to work**

48% **48%** of HR professionals believe that migraine disease **can qualify as a disability in their organization**

39% However, **39%** say many direct supervisors in their organization **do not consider migraine attacks a valid reason to miss work**

36% And **36%** say many direct supervisors in their organization **do not view the disease as debilitating**

Ensure HR/supervisors are aware that resources are available to help employees experiencing migraine. Provide them with information on how to connect employees to appropriate migraine care.

Comorbidities Contribute to the Overall Health Burden in People Living With Migraine[26]

There are many comorbidities associated with migraine

Mental health disorders: depression, anxiety, panic disorders, personality disorder, suicide attempts

Sleep conditions: insomnia, restless legs syndrome, sleep apnea, poor quality and duration of sleep

Chronic pain conditions: fibromyalgia, arthritis

Cardiovascular disorders: stroke, myocardial infarction

Inflammatory conditions: allergic rhinitis, asthma

Neurologic disease: epilepsy

Many comorbidities have been identified as risk factors for the progression from episodic migraine to chronic migraine.[26]

- The combination of multiple comorbidities, or "multimorbidity," has also been linked to medication overuse and new onset of chronic migraine.

Comorbid and Co-occurring Conditions in Migraine and Associated Risk of Increasing Headache Pain Intensity and Frequency

Besides the Physical Effects of Migraine, Individuals With Migraine Also Experience Psychological Effects[27]

According to a survey of 5,692 US adults:

52% of patients with moderate to severe migraine-related disability have experienced **depression**[27,*]

43% of patients with moderate to severe migraine-related disability have experienced **anxiety**[27,*]

Those with migraine also report an effect on their families and relationships[28]:

- **64%** report an **effect on their private life**[28]
- **37%** report **stress in their spousal relationship**[29]
- **~50%** have experienced a **reduction in family activities**[29]

*61% have increased risk of moderate/severe disability with depression and anxiety.[27]

Economic Impacts of Migraine Are High for Employees, Employers, and Payers[30]

The Migraine Research Foundation estimates that **157 million workdays are lost annually** to migraine. Moreover, the American Headache Society Consensus Statement states that migraine is associated with a substantial financial burden, with an estimated **$27 billion in annual costs** reported in the United States.[3,31]

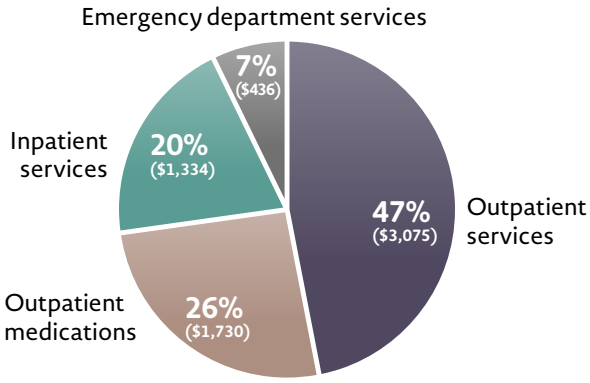
A 2018 retrospective cohort analysis estimating the economic burden of migraine found that patients with migraine in the United States had increased all-cause healthcare costs and decreased productivity when compared with people without migraine.[32,*]

Direct costs[32]

The mean annual total (direct + indirect) all-cause costs were $8,924 greater for patients with migraine than for those without migraine ($22,304 vs $13,381, respectively).

- Direct healthcare costs accounted for approximately three-quarters of the total cost and were $6,575 greater for patients with migraine than for those without migraine ($11,010 [SD, $19,663] vs $4,436 [SD, $13,081]; *P*<0.01)

Composition of the $6,575 Direct Healthcare Costs[32]



Indirect costs[32]

Total unadjusted mean annual indirect all-cause costs were $2,350 higher for patients with migraine than for those without migraine ($11,294 vs $8,945, respectively).

- Of patients with workplace absence, short-term disability, and long-term disability, those with migraine missed almost 9 more days of work each year than those without migraine (mean days absent=37.0 vs 28.2, respectively)

In the 2018 My Migraine Voice global survey of 11,266 adults with migraine, 70% of people reported that migraine affects their professional life.[28]

*Truven Health MarketScan® Commercial Claims and Encounters (Commercial) and the Health and Productivity Management (HPM) databases between January 1, 2007, and June 30, 2013, were used in this analysis. Study included 71,742 adults with migraine and 1:1 matched individuals without migraine with 12 months of continuous enrollment before (baseline period) and after (follow-up period) the day they received a migraine diagnosis and/or medication (index). Matching was based on demographic variables and index date. The date of first diagnosis/treatment of migraine was defined as the index date for the migraine cohort. Chi-square tests were conducted on categorical measures and t-tests on continuous measures. Costs in 2014 US dollars. **Key study limitations:** Claims analyses are subject to coding errors. Coding for migraine lacks specificity to determine migraine severity, which may limit the ability to account for the full burden of migraine. Research databases used for the present study were limited to employer-sponsored health insurance; therefore, findings may not be generalizable to individuals with other types of insurance or uninsured individuals.

Healthcare Utilization Rates and Costs May Increase With Migraine Severity

Patients with treated migraine with ≥4 MHDs compared with those without migraine had[33,*]

5.5% higher absenteeism (mean [SD], 11.8% [20.7%] vs 6.3% [17.8%] within the past 7 days, respectively; *P*=0.03).

- **Estimated annual mean costs were $2,597 more** (mean [SD], $4,134 [$8,035] vs $1,537 [$5,078], respectively; *P*=0.003)

18.5% higher presenteeism (mean [SD], 36.0% [31.5%] vs 17.5% [25.5%] within the past 7 days, respectively; *P*<0.001).

- **Estimated annual mean costs were $6,409 more** (mean [SD], $10,637 [$11,781] vs $4,228 [$7,195], respectively; *P*<0.001)

3.2 more all-cause HCP visits during previous 6 months (mean [SD], 7.6 [9.6] vs 4.4 [7.7] visits, respectively; *P*<0.001).

- **Estimated annual mean costs were $6,337 more** (mean [SD], $15,967 [$20,786] vs $9,630 [$15,486], respectively; *P*<0.001)

0.2 more all-cause emergency department visits during the last 6 months(mean [SD], 0.5 [1.2] vs 0.3 [0.9] visits, respectively; *P*=0.03).

- **Estimated annual mean costs were $784 more** (mean [SD], $1,684 [$4,160] vs $900 [$3,129], respectively; *P*=0.035)

A 2018 US retrospective cohort analysis estimating the economic burden of migraine found that patients with migraine were 3 times more likely to have an all-cause annual inpatient admission (6,164 vs 2,115 admissions; *P*<0.01) and more than twice as likely to have an all-cause annual emergency department visit (24,258 vs 10,287 visits; *P*<0.01) than people without migraine.[32,†]

Review your annual utilization data, including codes for chronic headaches and migraine disorders, to understand the burden of migraine within your employee population, including use of the emergency department for care.

- Consult with your healthcare plan advisors to strategize how best to improve care

Review your provider network and prior authorization process to ensure your employees have timely access to migraine specialists and/or a migraine-treating primary care provider.

*Retrospective cross-sectional study using data from the 2016 web-based US National Health and Wellness Survey compared the burden of migraine from adults self-reporting a migraine diagnosis by an HCP and ≥4 MHDs while using acute and/or preventive prescription migraine medications (n=197) vs propensity score–matched adult controls without migraine (n=197). Absenteeism was defined as percentage of work time missed due to one's health in the last 7 days; presenteeism was defined as percentage of impairment or reduced productivity while at work in the previous 7 days due to one's health. **Key study limitations:** Patient-reported survey data cannot be independently verified by an HCP or medical record. As a result, inaccurate recall, misunderstandings, or false reporting may introduce potential bias and limit interpretation of the data.

†Truven Health MarketScan. Commercial Claims and Encounters (Commercial) and the Health and Productivity Management (HPM) databases between January 1, 2007, and June 30, 2013, were used in this analysis. Study included 71,742 adults with migraine and 1:1 matched individuals without migraine with 12 months of continuous enrollment before (baseline period) and after (follow-up period) the day they received a migraine diagnosis and/or medication (index). Matching was based on demographic variables and index date. The date of first diagnosis/treatment of migraine was defined as the index date for the migraine cohort. Chi-square tests were conducted on categorical measures and t-tests on continuous measures. Costs in 2014 US dollars. **Key study limitations:** Claims analyses are subject to coding errors. Coding for migraine lacks specificity to determine migraine severity, which may limit the ability to account for the full burden of migraine. Research databases used for the present study were limited to employer-sponsored health insurance; therefore, findings may not be generalizable to individuals with other types of insurance or uninsured individuals.

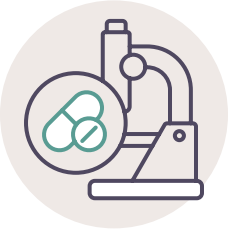
Migraine Treatment Strategies Are Evolving

Migraine management begins with establishing treatment goals[3]

An effective migraine treatment plan may include both preventive and acute medications.

The goals of migraine prevention and treatment strategies include:

- Reducing attack frequency, severity, duration, and disability
- Improving responsiveness to and avoiding escalation in use of acute treatment
- Improving function and reducing disability
- Reducing reliance on poorly tolerated, ineffective, or unwanted acute treatments
- Enabling patients to manage their own disease to enhance a sense of personal control
- Reducing headache-related distress and psychological symptoms



Like other chronic conditions, migraine treatment is evolving[34]

In 2018, the US Food and Drug Administration approved the first calcitonin gene-related peptide (CGRP) inhibitors, developed to prevent migraine attacks.

- Individuals with migraine have higher levels of CGRP in their blood

Gaps remain in optimal migraine care as individuals cycle through multiple preventive options

A cross-sectional, longitudinal, internet-based study administered from 2012-2013 and published in 2020 showed that among 2,388 individuals living with migraine, more than 36% reported using opioid medications to treat headaches.[35]

Work with your pharmacy benefit advisors to evaluate your current migraine treatment formulary to ensure employee access to all migraine treatment for optimized care in your migraine population.

Migraine Employee Education Programs Can Increase Engagement and Self-management

Employers can provide support by taking action to prevent migraine among employees and reducing productivity losses associated with migraine attacks.

Employer-led migraine support services

- Educate around migraine prevention and management techniques, such as identifying and avoiding migraine triggers and optimizing medication use[1]
- Optimize the work environment to reduce and eliminate migraine triggers, such as bright lights, loud noises, strong odors, poor air quality, and restricted access to water and restroom breaks[1]
- Provide migraine management services such as gym access, same-day/on-site occupational services, and screening programs[1]

Researchers have found that providing employees with gym access decreased migraine attacks, and providing same-day occupational health services for migraine treatment reduced productivity losses otherwise caused by migraine.[1]

According to recent studies, instituting migraine education programs was associated with a 29%-36% increase in productivity owing to fewer workdays lost due to migraine attacks, fewer days worked with migraine attacks, and an increase in effectiveness on days when employees worked with migraine attacks.[1]

Metro Nashville Public School System Implements Virtual Employee Migraine Education Program to Empower Employees With Information to Better Manage Their Condition

Impact of Employer-based Migraine Education Program on Resource Utilization and Cost Burden

The migraine education program that served as the foundation of the Metro Nashville Public School System program is available from Migraine at Work (migraineatwork.org), which is sponsored in part by AbbVie.

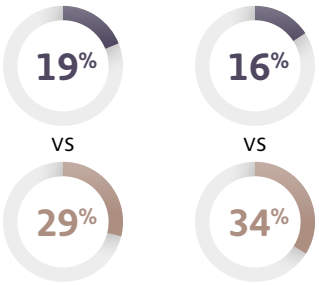
Develop a migraine education program that shares prevention and management techniques, and consider opportunities to adjust the work environment to minimize migraine-related triggers.

What do migraine management leaders* do differently?[25]

According to the Migraine Disease Report 2021 assessing n=309 responses:

Migraine management leaders **are more likely** than migraine management laggards to offer health insurance that covers migraine disease.[25]

Migraine management leaders **are less likely to have restrictions** on medications to treat migraine disease.[25]



*Migraine management leaders were defined as respondents who strongly agree or agree that their organization does a good job at helping and accommodating employees with migraine disease. Migraine management laggards were defined as respondents who strongly disagree, disagree, or neither agree nor disagree that their organization does a good job at helping and accommodating employees with migraine disease. In actuality, these numbers may be much higher.[25]

Raising Awareness and Improving the Long-Term Care for Employees With Migraine: A Step-by-Step Process

STEP 1

Raise awareness of the prevalence of migraine and the burden of disease

- Create an awareness campaign that provides information on migraine prevalence, prevention, and general education
- Post a migraine screening questionnaire to your company's employee resource site and encourage employees to self-report to improve awareness and timely care connections

STEP 2

Provide access to comprehensive migraine care

- Optimize network adequacy ratios (eg, members per migraine specialist or migraine-treating primary care provider) to minimize time to treatment
- Eliminate barriers to appropriate migraine care by minimizing authorization requirements
- Review your formulary for coverage of migraine treatments and, if necessary, redesign to include all treatment options

STEP 3

Utilize employee education and care management programs for continued support

- Promote an employer-led migraine education program to increase awareness of prevention techniques and management strategies
- Optimize the work environment to minimize migraine-related triggers, and provide migraine management services such as gym access, same-day/on-site occupational services, and screening programs

Consider partnering with programs like Migraine at Work to facilitate migraine education.

- Migraine at Work is a nonprofit organization dedicated to providing employers and employees with migraine tools to build healthier, stigma-free, and more productive workplaces
- Migraine at Work offers resources and information on costs, accommodations, and educational programs to help people living with migraine go from surviving to thriving in the workplace

AbbVie's Employer Strategies Focus on Improving Workforce Health and Productivity by Addressing:

Disease State Awareness

Raising awareness of the burden and impact of disease

Access to Treatment

Establishing and expanding access to treatment

Engagement and Educational Support

Developing connections to promote engagement and educational support

For additional information and support, contact your AbbVie Account Executive.

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US-MULT-220761 June 2022

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