

# HOSPITAL PHYSICIAN®

## EMERGENCY MEDICINE BOARD REVIEW MANUAL

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The *Hospital Physician Emergency Medicine Board Review Manual* is a peer-reviewed study guide for residents and practicing physicians preparing for board examinations in emergency medicine. Each manual reviews a topic essential to the current practice of emergency medicine.

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## Headache

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## Table of Contents

Introduction . . . . .	2
General Approach to Evaluation . . . . .	2
Primary Headache . . . . .	2
Secondary Headache . . . . .	4
Infectious Causes . . . . .	6
Increased Intracranial Pressure . . . . .	8
Extracranial Pathology of Headache . . . . .	9
Conclusion . . . . .	10
References . . . . .	10

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# Headache

Charlotte Page Wills, MD

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## INTRODUCTION

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Headache is a common chief complaint, responsible for up to 2.5% of all emergency department (ED) visits.<sup>1,2</sup> Headaches are caused by the following mechanisms: intracranial pressure, which distends pain-sensitive blood vessels; inflammation, which causes irritation of the meninges and cranial nerves; tumors, which compress pain sensitive structures and distort the meninges; biochemical causes; or extracranial triggers.<sup>3</sup> Approximately 3.8% of patients presenting to the ED with headache ultimately have intracranial pathology.<sup>4</sup>

Successful management of patients with headache depends on correctly diagnosing the type of headache and alleviating the patient's pain. Accomplishing these goals in a thorough and cost-effective fashion when dealing with potentially devastating underlying disease can be extremely difficult. It is therefore crucial to consider a broad differential and correctly identify the etiology and type of headache being managed. This article reviews the major disease entities in the differential responsible for the chief complaint of headache.

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## GENERAL APPROACH TO EVALUATION

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### HISTORY AND PHYSICAL EXAMINATION

History and physical examination must be geared toward first identifying whether the headache is a primary event or due to a secondary cause. Obtaining a thorough headache history from the patient can quickly direct management. Onset, quality, duration, location, and conditions that improve or worsen the headache should be elicited. Additionally, the patient should be asked about prior history of headache, type of treatments used successfully in the past, and whether there is a family history of aneurysm. A careful inventory of current medications should be obtained, including any over-the-counter medications and herbal remedies used.

The patient with headache also warrants a careful neurologic examination including all cranial nerves and gait. The skin should be closely examined for any rash

or petechiae, which suggest an infectious cause. In addition, particular attention should be paid to the eye examination looking for visual deficits and evidence of increased intracranial or intraocular pressure.<sup>1</sup> Signs of severe underlying disease associated with headache are listed in **Table 1**.

### NEUROIMAGING

The primary goal of computed tomography (CT) scan during the ED visit is to identify the patient with an operable or life-threatening lesion.<sup>3</sup> Brain CT is indicated in patients with atypical headache, seizure, or any focal neurologic finding.<sup>3,5</sup> Age greater than 55 years with a new or changing headache is also associated with a higher likelihood of disease and should prompt imaging.<sup>4</sup>

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## PRIMARY HEADACHE

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Primary headache has no specific identifiable organic cause.<sup>1</sup> The overwhelming majority of patients presenting to the ED with headache will ultimately have a benign primary headache. The challenge of treating headache patients in the ED is identifying the patient who actually has severe underlying disease. Understanding the characteristics and features of benign primary headache can aid in distinguishing these headaches from more serious disease as well as guide pharmacotherapy.

### MIGRAINE HEADACHE

Although an estimated 28 million Americans suffer from migraine headache, migraine is underdiagnosed and undertreated.<sup>6</sup> ED physicians may be reluctant to make the diagnosis of "migraine," instead preferring just "headache" or "benign headache."<sup>7</sup> The Landmark Study<sup>8</sup> demonstrated that 94% of patients with recurring disabling headache with a normal physical examination actually met International Headache Society criteria for migraine or probable migraine. Correct identification of headache in the ED allows the patient to be adequately treated with abortive medications, have access to suppressive medications, and avoid costly and extensive work-ups on future ED visits.