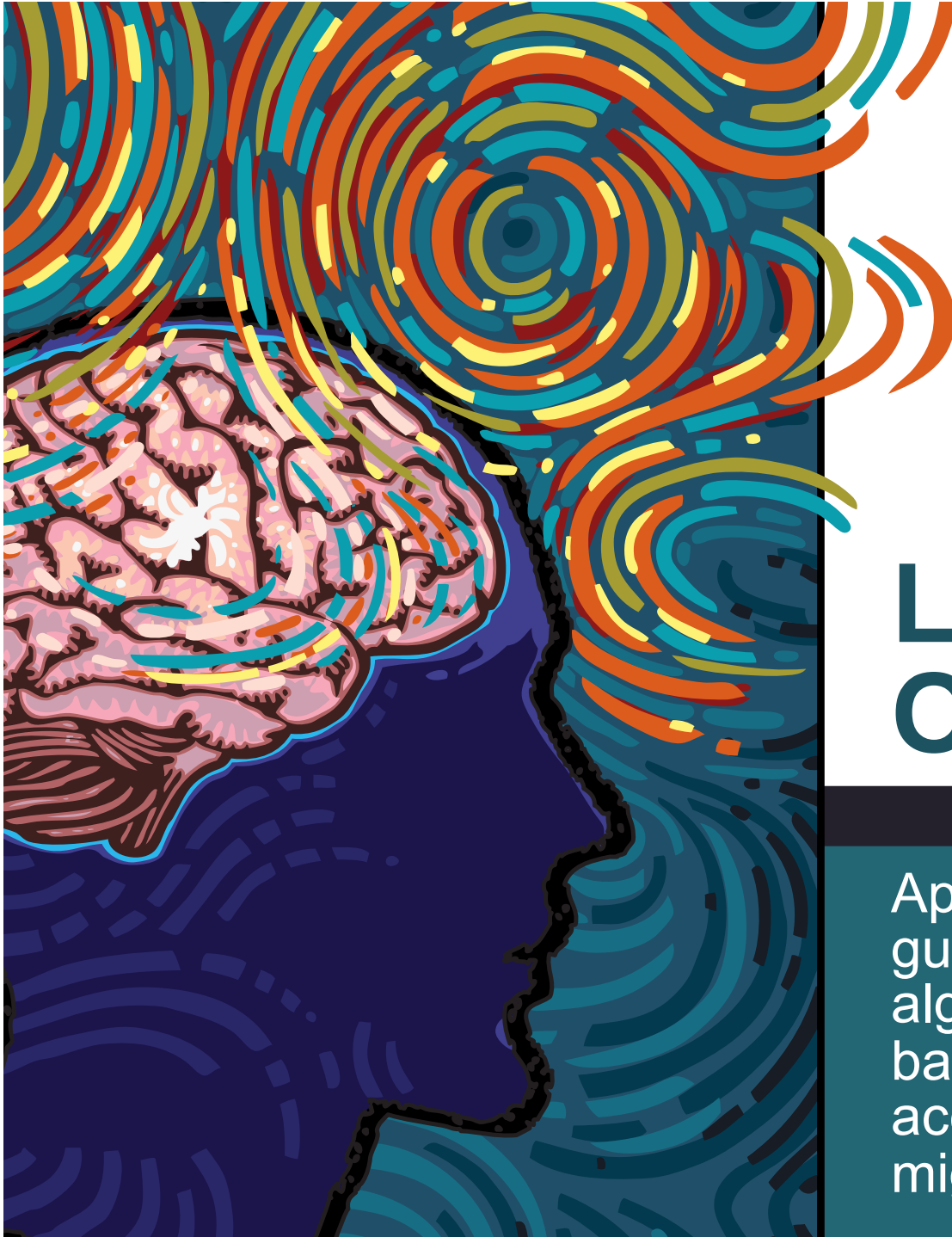




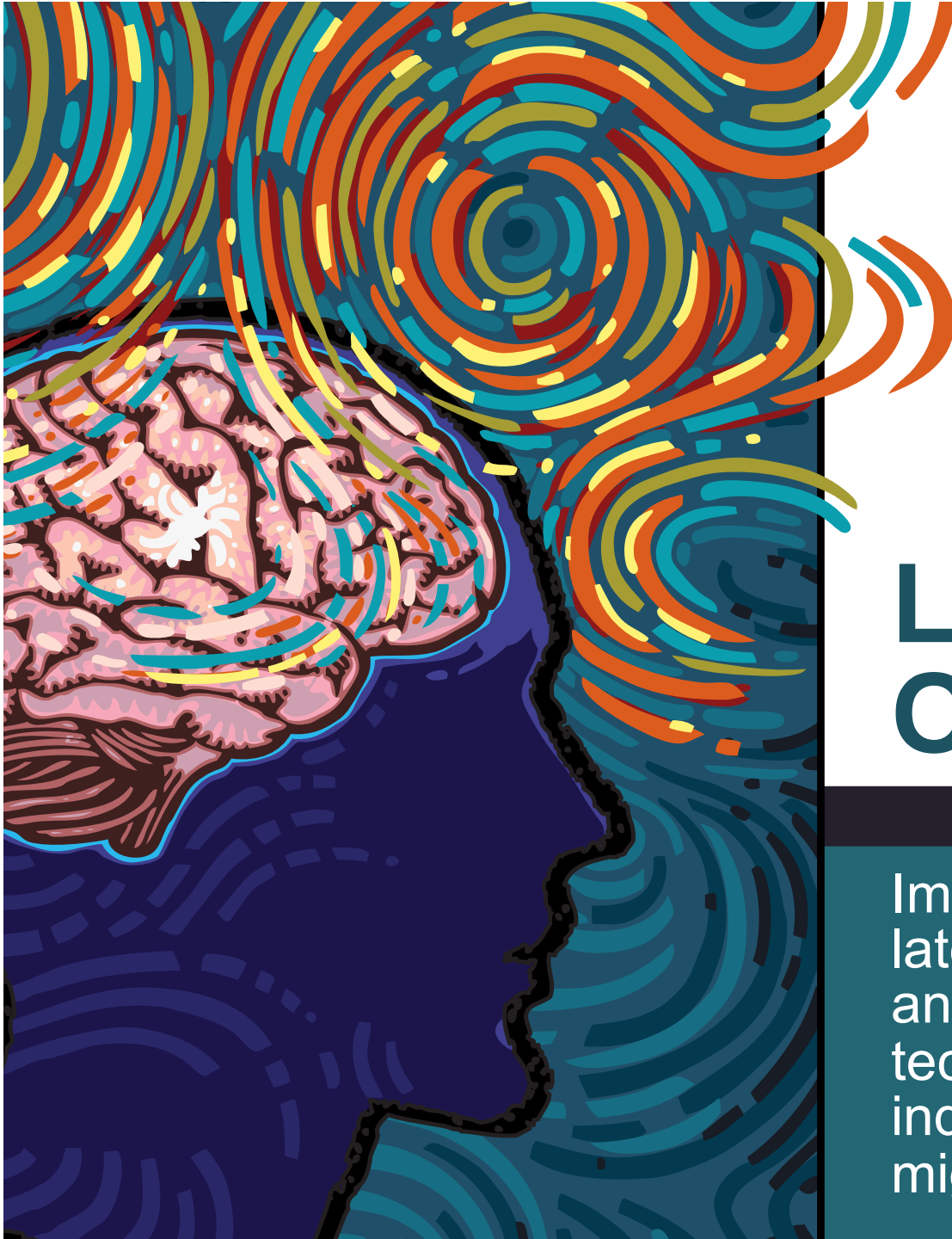
# Differentiating Migraine from Other Headache Types to Target Treatment

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# Learning Objective 1

Apply current treatment guidelines, diagnostic algorithms, and evidence-based recommendations to accurately diagnose migraine



## Learning Objective 2

Improve awareness of the latest evidence for current and emerging therapies/ technologies as part of an individualized multimodal migraine management plan



# Learning Objective 3

Engage the patient as an integral and active participant of treatment decisions and ongoing adherence to therapy

# Peter J. Goadsby, MD, PhD

## Disclosures

- **Research/Grants:** Allergan; eNeura Inc.; Amgen Inc.
- **Consultant/Advisory Board:** Ajinomoto Pharmaceuticals Co., Ltd.; Akita Biomedical; Alder Biopharmaceuticals Inc.; Autonomic Technologies, Inc; Avanir Pharmaceuticals, Inc.; Cipla Ltd; CoLucid Pharmaceuticals, Inc.; Dr. Reddy's Laboratories Ltd.; Eli Lilly and Company; Ethicon, US, LLC.; Heptares Therapeutics; Medical Legal Work; NuPathe, Inc.; Pfizer Inc.; Promius Pharma, LLC.; Teva Pharmaceuticals Industries Ltd.; UpToDate, Inc.; W. L. Gore & Associates, Inc.; Wells Fargo; Zosano Pharma Corporation
- **Other Financial Interest:** Dr. Goadsby has a patent Magnetic Stimulation for headache pending.

# Case 1



- Video to be embedded

# Exploding Head Syndrome



- **Description:** Sudden feeling as though the head is exploding or of sudden noise, sometimes associated with a flash of light; in the transition between sleep and wakefulness.
- Described first as “pistol shot or a blow to the head”<sup>1</sup>
- Terms
  - Sensory Shock<sup>1</sup>
  - Snapping of the Brain<sup>2</sup>
  - Exploding Head Syndrome<sup>3</sup>
- Series<sup>4</sup>
  - Older age of onset
  - Female preponderance
  - No secondary cases

1. Mitchell, SW. *Virg Med Mnthly*. 1876;2(11):769-781.

2. Armstrong-Jones R. *Lancet*. 1920;ii:720.

3. Pearce JM. *Lancet*. 1988;2(8605):270-1.

4. Pearce JM. *J Neurol Neurosurg Psychiatry*. 1989;52(7):907-10.

## Case 2

- Video to be embedded



# Tension-Type Headache

## By ICHD-3



## 2. Tension-type Headache

### A. Frequency

2.1 Infrequent: < 1 day a month

2.2 Frequent: 1-14 days a month

2.3 Chronic: >15 days a month for > 3 months

### B. Lasting from

2.1 & 2.2 30 minutes to 7 days

2.3 hours to days

### C. At least two of the following four characteristics:

1. bilateral location

2. pressing or tightening (non-pulsating) quality

3. mild or moderate intensity

4. not aggravated by routine physical activity such as walking or climbing stairs

### D. Both of the following:

2.1 & 2.2

1. no nausea or vomiting

2. no more than one of photophobia or phonophobia

2.3

1. no more than one of photophobia, phonophobia or mild nausea

2. neither moderate or severe nausea nor vomiting

### E. Not better accounted for by another ICHD-3 diagnosis.

# Tension-Type Headache (*appendix*)



## A. Frequency

- 2.1 Infrequent: < 1 day a month
- 2.2 Frequent: 1-14 days a month
- 2.3 Chronic: >15 days a month for > 3 months

## B. Lasting from

- 2.1 & 2.2 30 minutes to 7 days
- 2.3 hours to days

## C. Three or more of

- 1. Bilateral
- 2. Pressing or tightening
- 3. Mild or moderate intensity
- 4. Not aggravated by routine physical activity

## D. No nausea, vomiting, photophobia or phonophobia

## E. Not better accounted for by another ICHD-3 diagnosis

# Relationship of Migraine and Tension-type Headache



## Attacks

- Premonitory features
- throbbing
- movement worse
- associations
  - nausea
  - photophobia
  - phonophobia
- Aura
- Non-throbbing
- *no effect of movement*
- associations
  - No nausea
  - No photophobia
  - No phonophobia
- ? aura

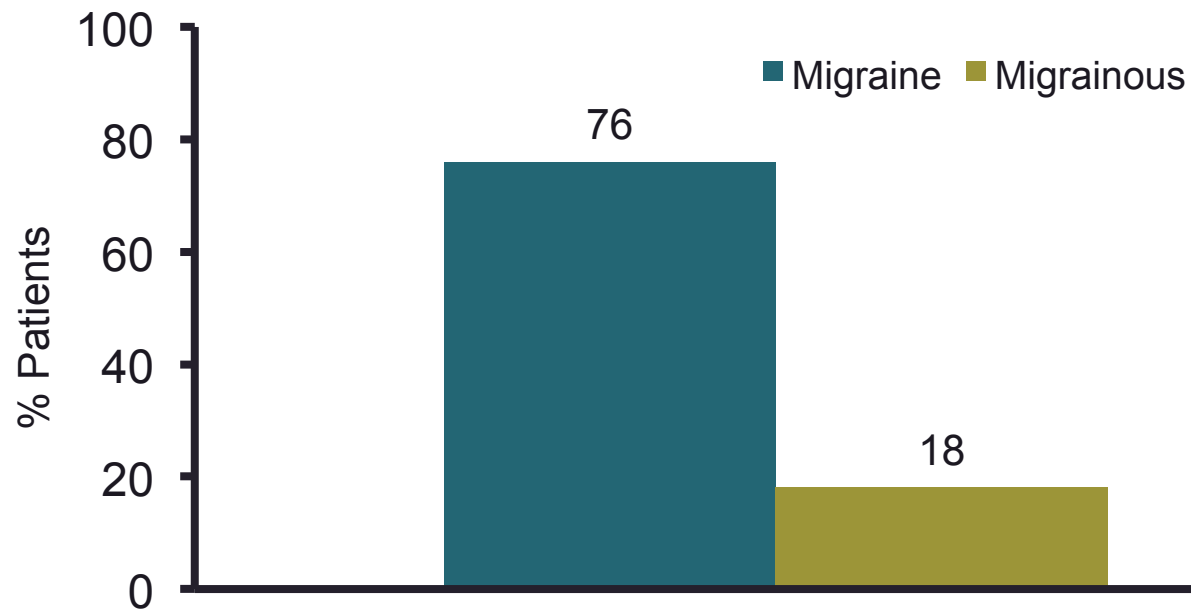
## Patient

- Family history
- Triggers
  - Sleep: missing/excess
  - Eating: including alcohol
  - Weather
  - Hormonal
  - Stress- *relaxation*

# Landmark Study

## Migraine in Primary Care Offices

- Prospective, open-label study
- Patients tracked for three months or six attacks
- Assigned *IHS* diagnoses by experts



# Migraine

## The Attacks & The Disorder



### Attacks

- **Premonitory symptoms**
- **Pain**
  - unilateral
  - throbbing
  - movement worse
- **Nausea**
- **Sensory sensitivity**
  - photophobia
  - phonophobia
  - osmophobia
- **Aura**

### Disorder

- **Repeated attacks**
  - < 15 days/month: Episodic
  - ≥ 15 days/month: Chronic
- **Family history**
- **Triggers (biology)**
  - Sleep: missing/excess
  - Food: skipping meals
  - Chemical: alcohol or nitroglycerin
  - Weather
  - Sensory: light, smells
  - Hormonal
  - Stress- *relaxation*

“The simple headaches have the same characters, and occur under the same causal conditions of heredity &c, as those in which there are additional other sensory symptoms”

Gowers WR. *A manual of diseases of the nervous system*. 2<sup>nd</sup> ed. 1893.

# Case 3



European



# Case 3



European



United States



# Nummular Headache

## *Is this just one thing?*

### 4.8 Nummular Headache

*Description:* Pain of highly variable duration, but often chronic, in a small circumscribed area of the scalp in the absence of any underlying structural lesion.

#### *Diagnostic criteria*

- A. Continuous or intermittent head pain fulfilling B-C
- B. Felt exclusively in an area of the scalp, with all of the following four characteristics:
  1. sharply contoured
  2. fixed in size and shape
  3. round or elliptical
  4. 1–6 cm in diameter, Not better accounted for by another ICHD-3 diagnosis





# Case 4



# Cough Headache



## 4.1 Cough Headache

Headache precipitated by coughing or other Valsalva (straining) manoeuvre, but not by prolonged physical exercise, in the absence of any intracranial disorder.

- A. At least two headache episodes fulfilling criteria BD
- B. Brought on by and occurring only in association with coughing, straining and/or other Valsalva manoeuvre
- C. Sudden onset
- D. Lasting between 1 second and 2 hours
- E. Not better accounted for by another ICHD-3 Dx

Raskin NH. *Neurology*. 1995;45(9):1784; Headache Classification Committee of the International Headache Society [IHS]. *The International Classification of Headache Disorders*. 3rd edition (beta version). International Headache Society Website.

[http://www.ihs-classification.org/\\_downloads/mixed/International-Headache-Classification-III-ICHD-III-2013-Beta.pdf](http://www.ihs-classification.org/_downloads/mixed/International-Headache-Classification-III-ICHD-III-2013-Beta.pdf). 2013.



# Cough Headache\*



- Generalised, sudden onset headache with Valsalva manoeuvre that lasts for several minutes<sup>1</sup>
- Differential diagnosis<sup>2</sup>
  - Primary: Older, shorter (<30 min)
  - Secondary: Chiari, CSF pathway obstruction, cerebrovascular disease
- Treatment
  - Lumbar puncture<sup>1,3</sup>
  - Indomethacin, methysergide<sup>4</sup>

\* There are no treatments approved for cough headache by the US FDA

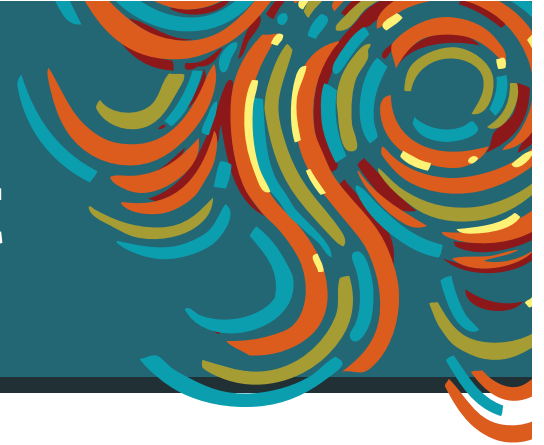
1. Symonds C. *Brain*. 1956;79(4):557-68.

2. Pascual J. *Neurology*. 1996;46(6):1520-4.

3. Raskin NH. *Neurology*. 1995;45(9):1784.

4. Bahra A, Goadsby PJ. *Cephalalgia*. 1998;18(7):495-6.

# Review of Treatment



- Episodic versus Chronic
- Abortive Medications
- Prophylactic Medications
- Non-medication approaches
- Emerging treatments
  - CGRP
  - 5HT<sub>1F</sub>
  - Others
  - Transcranial Magnetic Stimulation



# Questions & Answers