

A large iceberg floating in the ocean. The tip of the iceberg is visible above the water line, while the much larger, jagged base is submerged underwater. The water is a deep blue, and the sky is a lighter blue with some clouds. The iceberg's surface is textured with various ice formations and cracks.

The invisible costs of migraine

Benefits Canada meeting: Healthy Outcomes Conference

October 18th 2024

Dr Elizabeth Leroux, MD, FRCPC

Dr Leroux's Disclosures

- Allergan/Abbvie: advisory board, speaker
- Aralez/Tribute: advisory board, speaker
- Eli Lilly: advisory board, speaker
- Lundbeck: advisory board, speaker
- McKesson: consultant
- Novartis: advisory board, speaker
- Pfizer: advisory board, speaker
- Teva: steering committee, advisory board

Objectives

- Discuss impact and cost of migraine - challenges, myths and facts
- Explore what employers (you) can do to support plan members
- Q&A

Would it be possible to tell Sam to stop wearing perfume?

I can't do night shifts

I'm sorry I could not make the deadline...I spent the weekend in bed with a migraine

I need to leave early, my head hurts too much

I know I missed many work days...I'm trying a new medication now

What comes to your mind?

Migraine is not *that*
disabling! Is it even real?

My sister has migraine
and does not make such
a fuss about it

I have to cover for her
AGAIN!

He should see a doctor
and take meds

She's way too stressed
out... it's only a headache



1. Gross E, Ruiz de la Torre E, Martelletti P. The Migraine Stigma Kaleidoscope View. Neurol Ther. 2023.
2. Seng EK, et al The unique role of stigma in migraine-related disability and quality of life. Headache. 2022;62(10):1354-64.

Migraine is more than a headache



<https://www.youtube.com/watch?v=Jq42MGIhCUQ&t=1s>

2:12 min

Can we SEE the cause of migraine?

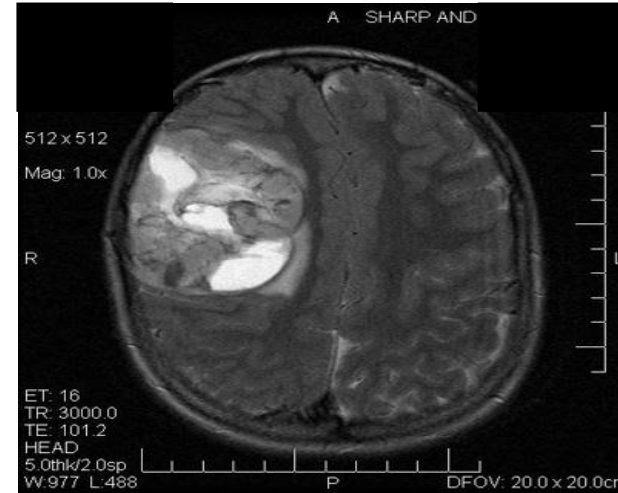
Migraine is invisible on CT scans and MRIs

*What do you think is
the cause of migraine?*

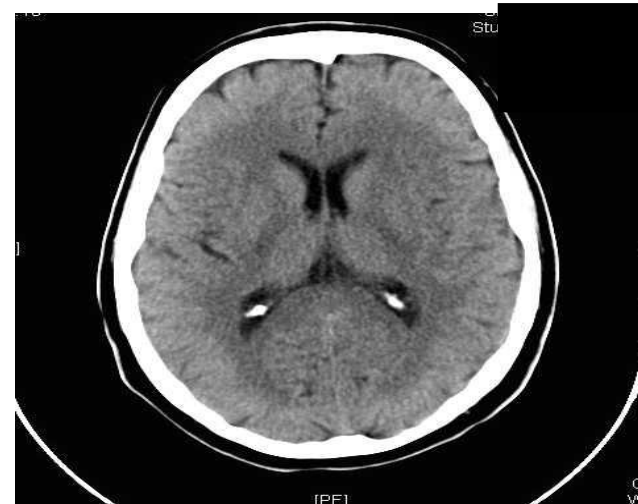
Computer
Visibly broken
Hardware



Computer seems
normal
Software



Brain tumour
Visible on
imaging



Chronic
migraine
Normal CT

The causes of migraine in 2024

It is a complex NEUROLOGICAL disease

Chemistry

PEPTIDES

Neurogenic Inflammation
CGRP, PACAP, VIP

SEROTONIN METABOLISM

Low between attacks

OXYDATIVE STRESS

Mitochondrial function
Energy metabolism

GENES > Proteins

Blood vessels and neurons
Neurotransmitters, ion channels

Electricity

ELECTROPHYSIOLOGY

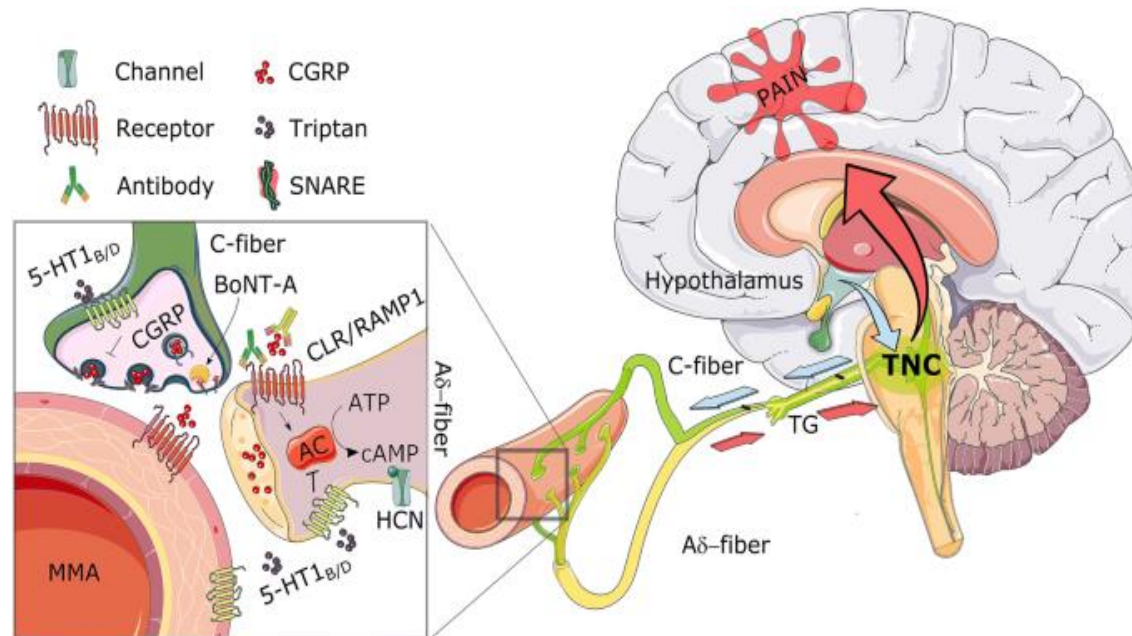
Low habituation to stimuli
(visual, auditive, sensory)

ACTIVE BRAIN ZONES

Hypothalamic / trigeminal
Connection during attack

Pain modulation dysfunction

Sensitization
Central /peripheral



Want to learn
more?
Check out our
YouTube
channel



The science of migraine **«It's all in your brain»**

Dr Elizabeth Leroux, MD, FRCPC
Neurologist, Montreal
Migraine Canada Webinar
June 14 2020

Who lives with migraine?



- **12%** of the population
- Up to **25%** of adult women
- 3 females / 1 male
- **5-10%** of children
- **5%** of adults > 65

1st

The most prevalent neurological disorder

2nd

The leading cause of global disability

3rd

The most prevalent medical illness

Migraine: different levels of severity

Proportion of people with migraine

novembre 2022	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	T
Céphalée 0 1 2 3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aura																															0
Rizatriptan											✓						✓														2
Tx: Effets secondaires																															0
Effet du tx de crise											S						P														

Fireman
Episodic migraine
1-7/30
 Does not miss work

7/10

April 2023	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	T	
Headache 0 1 2 3				3	3	3	2		1							2									2	1	2					
Aura																															0	
Advil				✓		✓			✓							✓										✓	✓					6
Sumatriptan																✓									✓	✓	✓					4

Human resources manager
Frequent episodic migraine
8-14/30
 Misses days of work
 Hesitant to use prevention
 Frequency varies 3-10/month

3/10

février 2023	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	T
Céphalée 0 1 2 3	2	3	3	1	2	1	3	1	2	2	3	3	2	1	3	3	2	2	2	3	3	2	2	2	2	2	1	1	
Aura																													0
Acétaminophène						✓			✓	✓					✓						✓	✓	✓	✓			✓		9
Naproxène						✓			✓	✓					✓						✓		✓	✓			✓		8
Almotriptan						✓			✓	✓					✓									✓			✓		6
Codéine									✓	✓					✓						✓			✓					5

Social worker
Chronic migraine
15-30/30
 Many medical conditions
 Has tried 15+ preventives
 Permanent disability

1/10



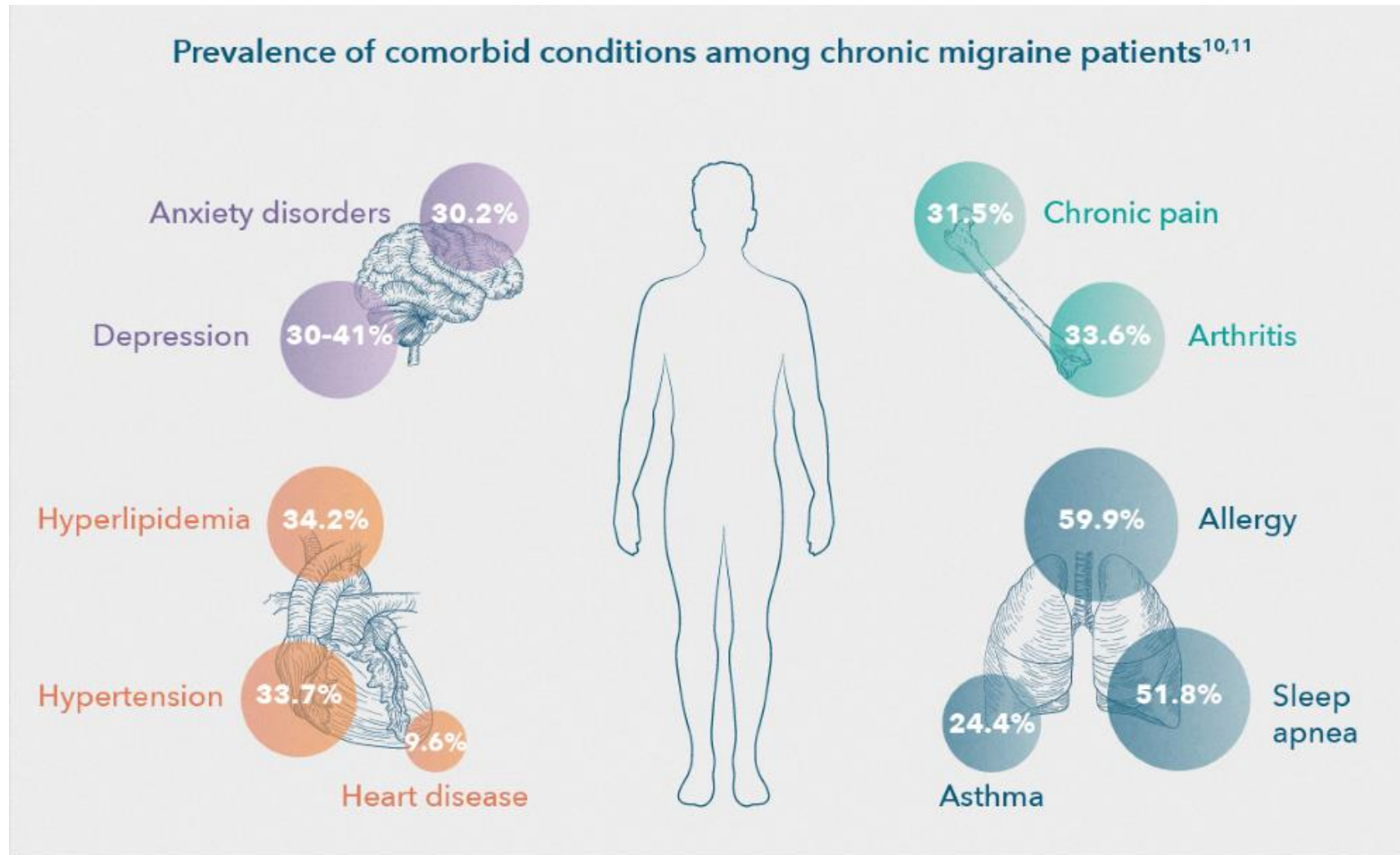
- **Migraine is a paroxysmal condition**
- **Attack frequency and intensity vary**
- **Different factors influence the situation**
- **WORK can be one of them**
- **TREATMENT is also one.**



Monthly attack frequency, Mild, Moderate, Severe over a year

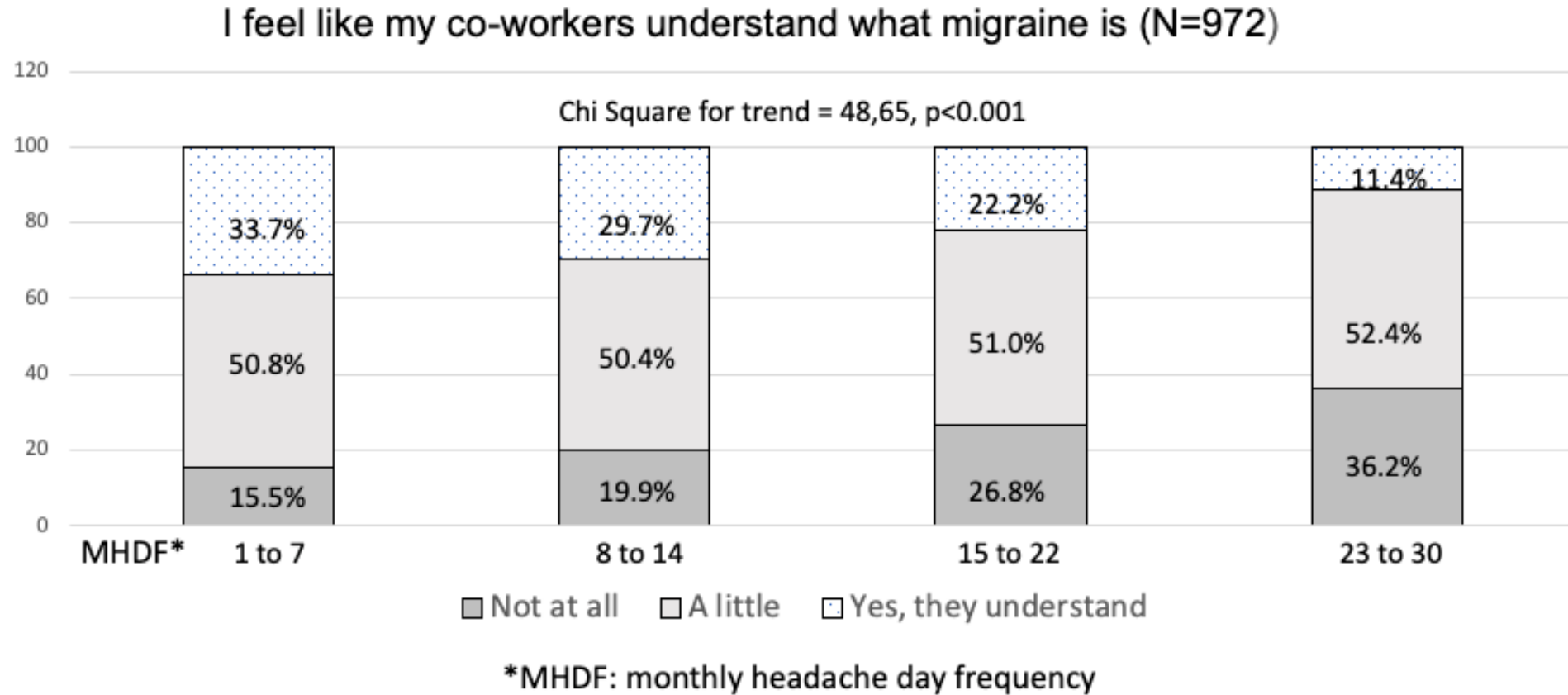
FREE app for migraine monitoring

Migraine is associated with other diseases



1. Buse DC, et al. Sociodemographic and comorbidity profiles of chronic migraine and episodic migraine sufferers. *Journal of Neurology, Neurosurgery & Psychiatry* 2010;81(4):428–32.
2. Buse DC, et al. Sleep Disorders Among People With Migraine: Results From the Chronic Migraine Epidemiology and Outcomes (CaMEO) Study: Sleep Disorders Among People With Migraine. *Headache* 2019;59(1):32–45.

Severe migraine = more stigma



Impact of migraine on work in a canadian cohort of 1119 patients.

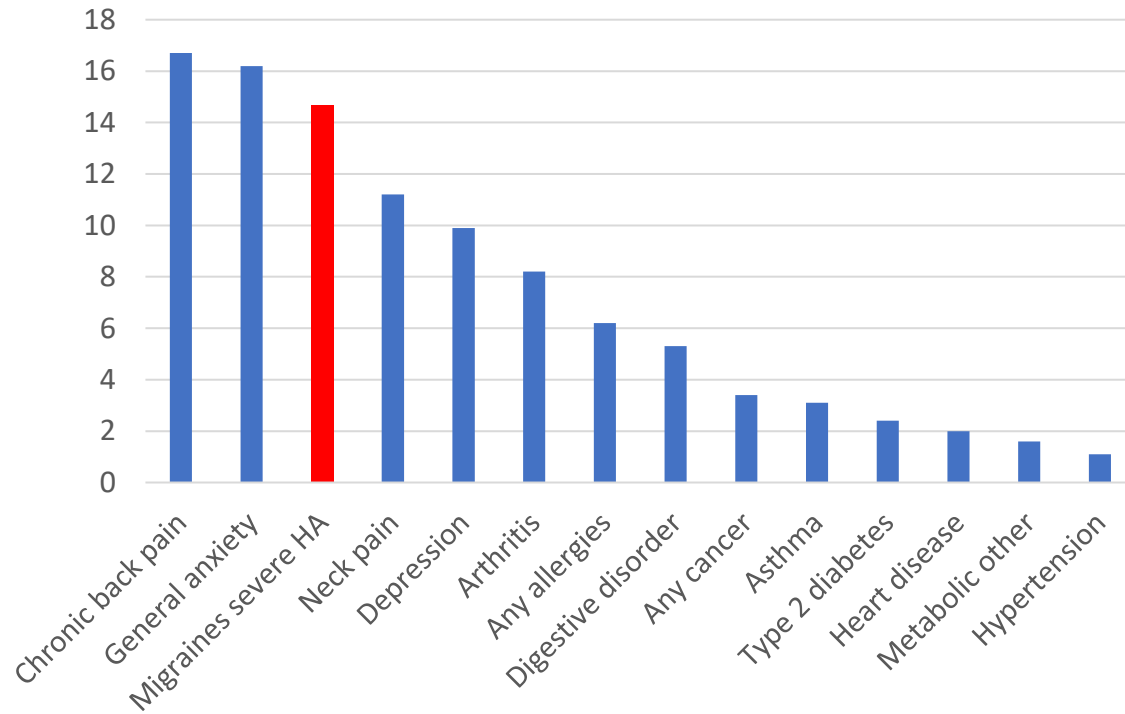
Source: Migraine Canada Survey. Descriptive scale 1-11.

Presenteeism data in the US

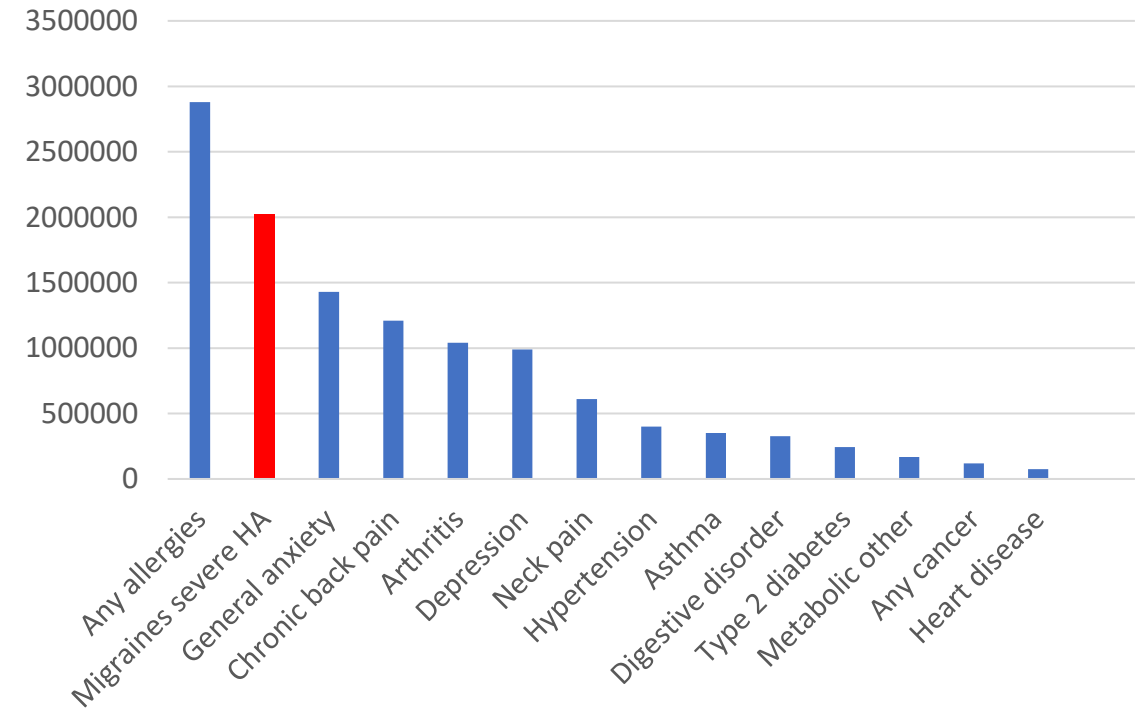
Does that surprise you?

- 25% of US workplace productivity lost to presenteeism
- 16% of presenteeism may be due to migraine

Min/day lost/person



Annual company cost USD





Direct and indirect costs of EM and CM in Canada

Indirect cost category	%	Mean annual cost per patient concerned \$ CAD	Mean cost per patient (whole cohort) \$ CAD
Missed time from work	61%	10 458	7 673
Reduced productivity	61%	12 462	9 766
Unemployed	15%	16 525	347
Short term disability	13%	7 695	1 019
Long term disability	16%	32 679	1 943

- 287 patients from 5 migraine clinics
- Female 85%, mean 45 yo
- Headache frequency (with treatment)
 - 4-7 days: 24%
 - 8-14 days: 35%
 - 15+ days: 36%

	Low Frequency Episodic	High Frequency Episodic	Chronic
Mean annual cost, direct + indirect	\$15 651	\$24 885	\$25 669

Amoozegar F, et al. The Burden of Illness of Migraine in Canada: New Insights on Humanistic and Economic Cost. Can J Neurol Sci. 2022;49(2):249-62.

Migraine is common and it is costly for our society

Workers with migraine and their employers face challenges

- «What's the cause » + difficult to «prove» = stigma
- Attacks are unpredictable
- Frequency and duration can vary
- Presenteeism, absenteeism
- Lower productivity
- COSTS

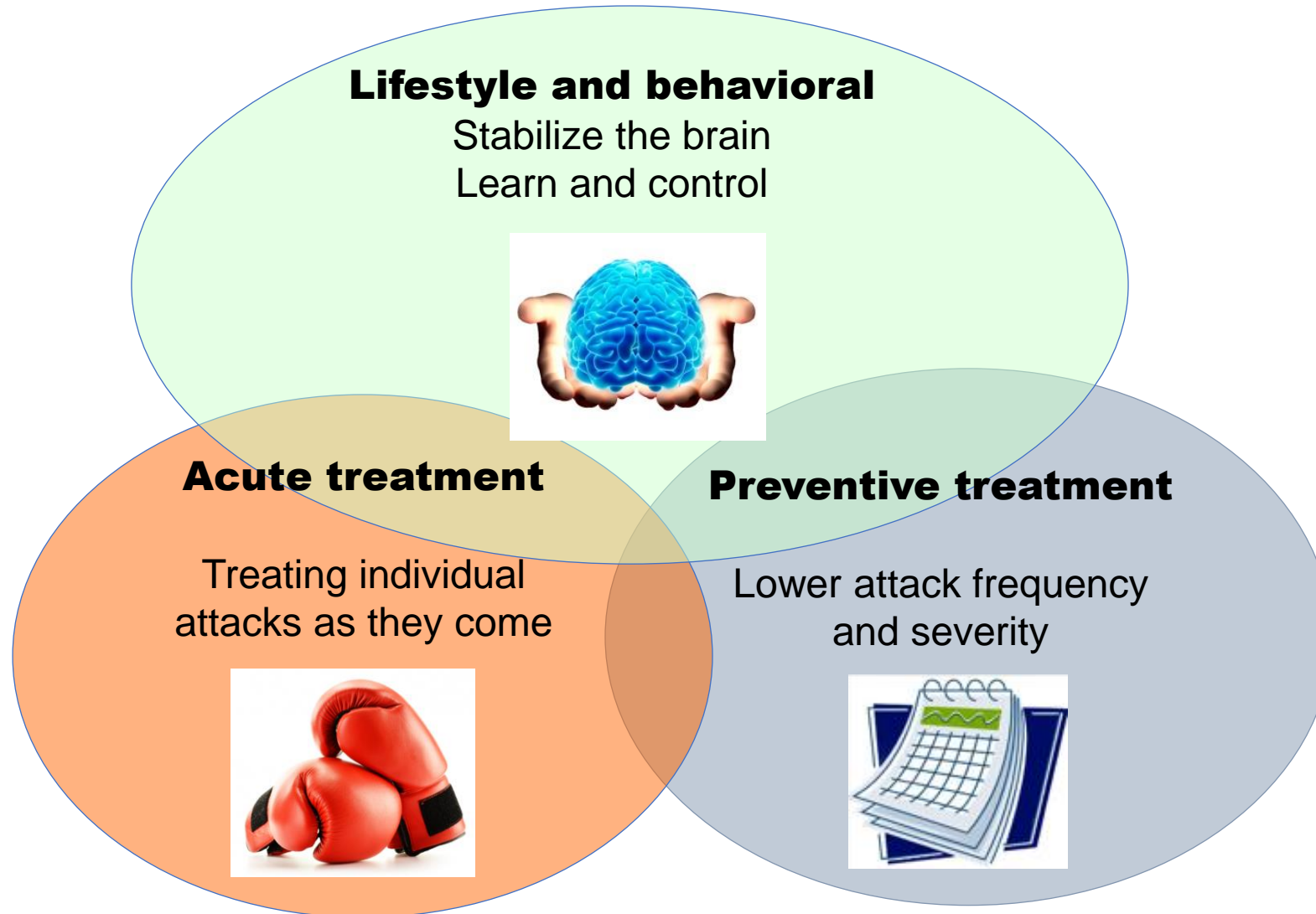
Good news!
Innovative treatments
are game changers



<https://www.youtube.com/watch?v=2M7NL8cedkg&t=1s>

2:02 min

Migraine Management: 3 axes



Reasonable accommodations

The brain with migraine requires adaptations

No scents policy	Lighting adaptation	Screen adaptation
Noise protection	Workstation adaptation	Variation of tasks
Mini-breaks	Access to a room for rest	Adequate access to water
No irregular shifts	Flexible schedules	Tele-work



MIGRAINE
AT WORK

**Table 1: Accommodations requested by participants
(N= 364) ***

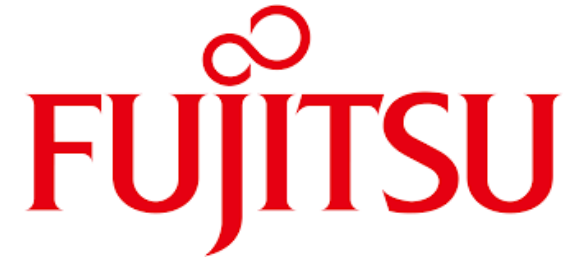
Accommodation	% of total	% of 1 – 7 MHDF	% of 23 – 30 MHDF
Lighting	55.2	50	60.6
Schedule flexibility	56.9	52.1	63
Screen adaptation	39.8	31.3	43.3
No scents policy	36	29.2	37
Workstation adaptation	37.6	37.5	38.6
Noise control	25.8	16.7	33.1
Shiftwork limitation	14	8.3	18.9
Option to work from home	5.2	2.1	9.4

*How would you react to
such requests?*

For those who reported asking, accommodations were reported as:

- Accepted without a medical letter for 47.5%,
- Accepted with a medical letter for 29.7%
- Refused for 22.8%.

January 2021: Nikkei, the largest Business Newspaper in Japan, wrote on the **Fujitsu Headache Project**.



- A survey was made in 2018 with the Japanese Headache Society.
- Migraine affected **17% of the employees**.
- Yet, only 16% of people with migraine consulted physicians.
- **Migraine reduced the productivity from 100% to 53%.**
- Fujitsu calculated the **annual economic loss to be 27 million US\$**
- The Fujitsu Headache Project was launched in October 2020
- E-learning for Headache + video seminars to **34,000 employees**
- 90% finished the course.
- Fujitsu is starting on-line Headache Consultations by headache specialists.

<https://www.fujitsu.com/global/about/csr/employees/health/>

Shimizu T, Sakai F, Miyake H, et al. Disability, quality of life, productivity impairment and employer costs of migraine in the workplace. *J Headache Pain*. 2021;22(1):29.

The journey of the migraine patient over decades!

Seeking care

Finding a doctor

Getting a diagnosis

Adapting lifestyle

Trying medications

Finding a specialist

Finding medications
that work

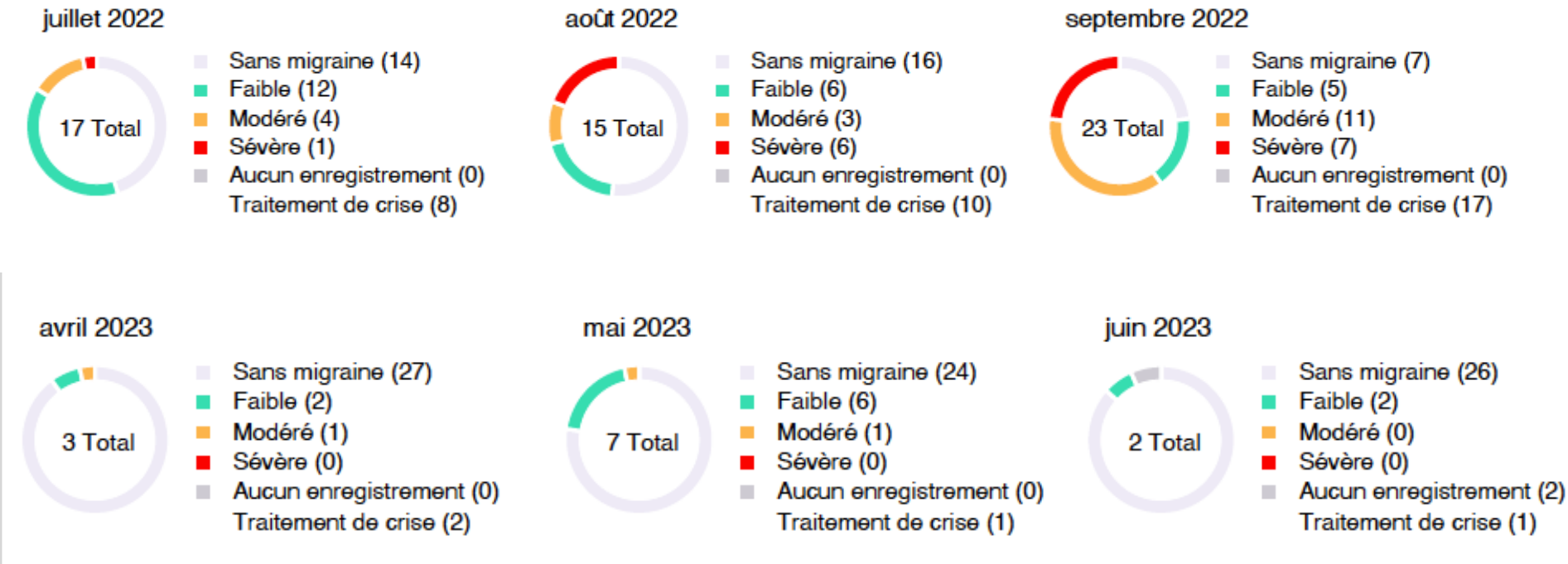
Get medications covered

In an international study (CAMEO-I) including 1388 Canadians, only 9% of people made it to appropriate prescriptions



- Triptans
- Oral preventives
- CGRP antibodies
- Gepants
- Botox

When treatment works, it's life changing



36 yo nurse, migraine since childhood

Had tried 6 oral preventives, off work

Severe attacks, ED visits

CGRP antibody prevention given

Back to work

Does not miss work days anymore

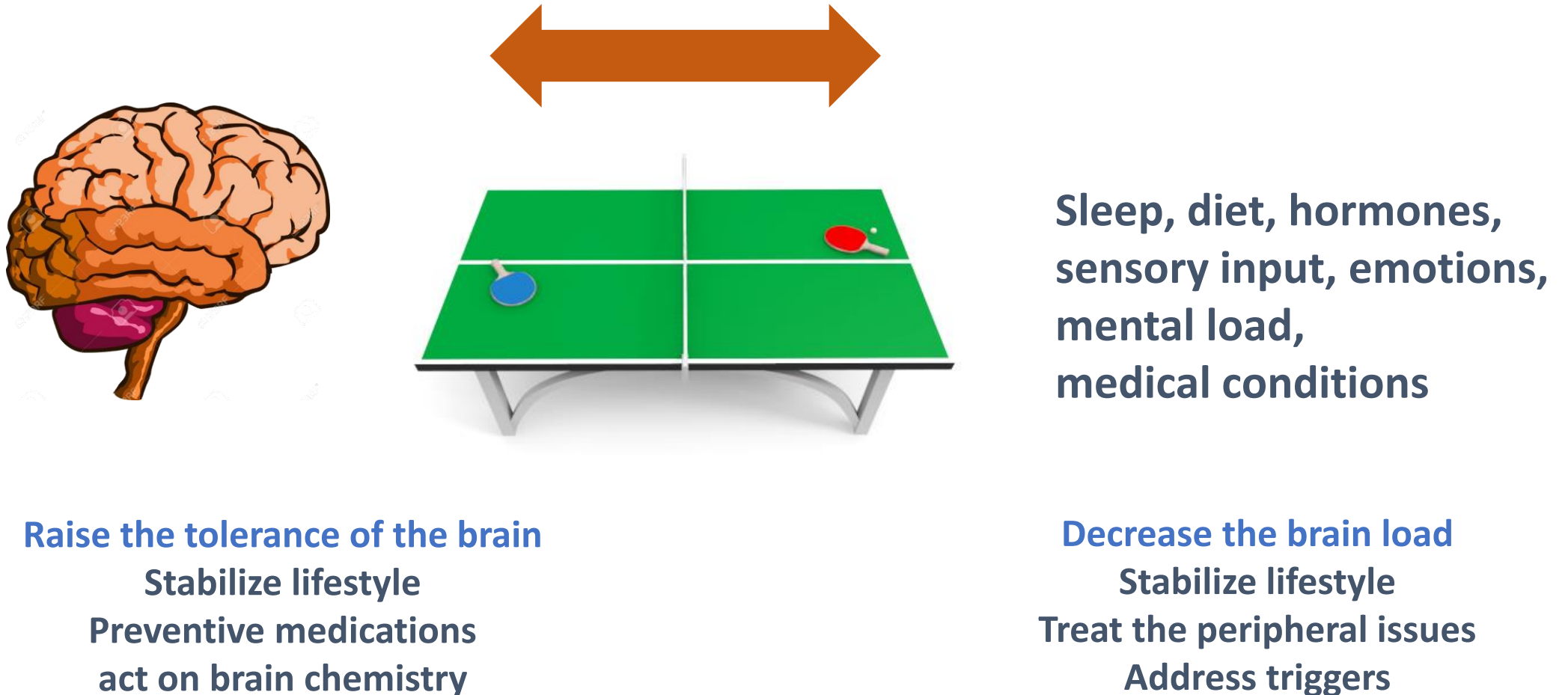
Very happy with her «new life»

CGRP blockers changed the way we think about migraine care overall

- Migraine IS a treatable disease, not just the result of “bad habits and choices”
- Patients can “live their lives without monitoring everything”
- Medical care is essential



In summary: Holistic Migraine Care Adaptations **AND** Medications



Summary: what can be done in the workplace

Educate	Educate Human Resources and workforce
Provide	Provide a program on migraine for employees at large
Identify	Identify people struggling with migraine and suggest resources
Support	Support employees, fight stigma
Design	Design a migraine friendly workplace with reasonable accommodations
Encourage	Seeking medical care, choose plans covering migraine medications

Are you ready to take action?

- Gather canadian evidence: which data can we get from our databases?
- Setup a Migraine Awareness Day in June
- Offer a conference on migraine to HR / employees
- Reach out to Migraine Canada for collaborations
- Email me: leroux.neuro@gmail.com

THANK YOU!

*Come and meet
me at lunch!*