DrBrainRx

Headache x Obesity

Headache and Obesity: Recognizing and Treating a Modifiable Risk Factor

Sara Siavoshi DO
Triple Board-Certified Neurologist, Headache, Obesity Med
Assistant Clinical Professor Neurosciences UC San Diego
Founder, DrBrainRx Weight Loss

GLP-1 drugs associated with reduced need for emergency care for migraine

AMERICAN ACADEMY OF NEUROLOGY.

GLP-1s and Migraine: Emerging Outcomes

- **Obesity is linked to migraine chronification**
  - Large population data (n = 30,215 adults):
  - Normal weight (3.9%) → Obesity (5.0%) → Morbid obesity (6.8%)
- **Migraine-specific transformation:**
  - Transformed migraine rose from:
    Normal weight (0.9%) → Obesity (1.6%) → Morbid obesity (2.5%)
- **Emerging clinical signal with GLP-1 therapies**
  - AAN 2026 data:

fewer emergency department visits

fewer hospitalizations

reduced need for acute and preventive migraine medications

(compared to patients initiating topiramate)

Why I got into obesity medicine as a headache neurologist

I was seeing patients with chronic headache get partial relief from medications while a major biologic driver was left untreated

In many patients, obesity traveled with:

→ sleep apnea
→ hypertension
→ insulin resistance
→ inflammation
→ poor sleep
→ cognitive fog

These are not neutral bystanders. They actively affect brain function and vascular health

Obesity and poor metabolic health are associated with:

→ worse brain-aging markers
→ increased white matter hyperintensity burden
→ deeper white matter lesion burden with visceral obesity

What I saw clinically:
When we treated the metabolic burden, patients improved not just in headache frequency but also in brain fog, attention, memory, and sleep

IIH (Pseudotumor Cerebri) & Obesity

Incidence

- ~1 per 100,000 (General Population) (Radhakrishan et al., 1994)
- **~19.3 per 100,000** (Obese Women, 20–44) (Durcan et al.; Chen et al., 2014)

Symptoms & Risks

- Increased Intracranial Pressure
- Chronic Headache
- Visual Symptoms

Up to **10% risk of permanent bilateral vision loss** if untreated (Wall et al., 2014)

The Obesity Connection

90% of IIH patients are overweight or obese (Daniels et al., 2007)

Diagnostic Criteria Quick Review

Chronic Migraine (ICHD-3)

- Headache on ≥15 days/month for >3 months
- On ≥8 days/month, headaches have migraine features:
  - → unilateral
  - → pulsating
  - → moderate to severe intensity
  - → aggravated by activity
- And/or respond to migraine-specific therapy (triptan, ergot)
- Not better explained by another diagnosis

Idiopathic Intracranial Hypertension (IIH)

- Elevated intracranial pressure with no structural cause
- Key features:
  - → daily or near-daily headache
  - → transient visual obscurations
  - → pulsatile tinnitus
  - → diplopia (CN VI palsy)
- Exam:
  - → papilledema (hallmark)
- Workup:
  - → normal brain imaging (no mass)
  - → elevated opening pressure on LP
  - → normal CSF composition

Obesity and the broader neurologic burden

Obstructive Sleep Apnea (OSA)

Obstructive Sleep Apnea (OSA)
10% weight gain → **32%** ↑ **AHI**
→ **6x higher odds** of moderate-to-severe sleep-disordered breathing
(Terry Young et al., JAMA 2000)

Stroke Risk
Meta-analysis (2.27 million participants):
→ Obesity → **64%** ↑ **ischemic stroke risk**
→ Overweight → **22%** ↑ **risk**
(Bo Hu et al., Stroke 2007)

Dementia / Brain Aging
Pooled cohort (1.3 million adults):
→ Higher BMI → ↑ **dementia risk** when measured >20 years prior
→ **~1.4x risk** with obesity
(Mika Kivimäki et al., BMJ 2018)

Stroke Risk

Stroke Risk
Meta-analysis (2.27 million participants):
→ Obesity → **64%** ↑ **ischemic stroke risk**
→ Overweight → **22%** ↑ **risk**
(Bo Hu et al., Stroke 2007)

Dementia / Brain Aging

Pooled cohort (1.3 million adults):
→ BMI →
→ **~1.4x risk** with obesity

My Approach to the Obese Headache Patient

- **Get them better first**
  Treat headache aggressively so they can function again

- **Then explain the "why"**
  Once improved, introduce the bigger drivers:
  → obesity
  → sleep
  → insulin resistance
  → blood pressure
  → food quality
  → movement
  → caffeine load
  → stress biology

- **Build the plan around what moves outcomes**
  → protein-forward nutrition
  → increase fiber
  → reduce ultra-processed foods
  → strength training
  → sleep optimization
  → screen for sleep apnea
  → anti-obesity medications when appropriate

- **Reframe the goal**
  Not just fewer headache days
  → change the terrain driving chronic headache

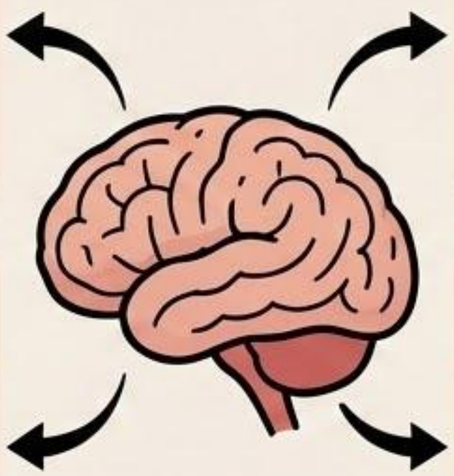
How GLP-1s Act on the Brain

Hypothalamus (homeostatic control)

- ↓ appetite, ↑ satiety, earlier meal termination
- modulates ghrelin signaling and hunger drive

Brainstem + vagal pathways

- enhances gut–brain feedback
- slows gastric emptying → prolonged fullness



Mesolimbic reward system (VTA → nucleus accumbens)

- ↓ food noise
- ↓ cue-driven eating
- ↓ compulsive drive for highly palatable foods

Insulin signaling & metabolic effects in the brain

- improves central insulin sensitivity
- reduces neuroinflammation
- stabilizes energy utilization and signaling

Downstream effect

- easier adherence to nutrition changes
- reduced overeating
- less "I know what to do but can't stop" physiology

Access to GLP-1s: Insurance Reality

Headline:

Coverage is often more about comorbidities than BMI alone

Core criteria (clean + accurate framing):

For **most commercial plans**, coverage typically requires:

- BMI ≥30
  OR
- BMI ≥27 + at least one comorbidity (HTN, dyslipidemia, prediabetes, OSA

BUT for Medicare / Medi-Cal (Medicaid):

- GLP-1s are **NOT covered for weight loss alone**

The ONLY viable coverage pathways:

Cardiovascular Disease (CVD)
→ Established ASCVD (prior MI, stroke, PAD)
→ Covered option: Wegovy
(based on SELECT trial data)
+ BMI over 27

Type 2 Diabetes
→ ANY prior A1c ≥6.5% qualifies
→ Does NOT need to be current
→ Covered options:
→ Ozempic
→ Mounjaro

Obstructive Sleep Apnea (OSA)
→ Moderate to severe OSA (typically AHI ≥15)
→ Covered option: Zepbound
+ BMI over 30

Liver Disease (MASLD / NASH)
→ Requires objective evidence of disease-not just fatty liver on ultrasound
→ Typically:
→ elevated ALT/AST
→ imaging showing steatosis
→ ± fibrosis on imaging
→ Coverage is plan-dependent and inconsistent

When Not to Waste Time on Prior Auth

Know when a PA will Fail

Weight loss exclusion plan → do NOT pursue unless:

- Cardiovascular disease
- OSA
- Liver disease
- Diabetes

Medicare / Medi-Cal without qualifying condition → no pathway

---

*Documentation to include in a PA or Appeal: They have failed various diet and exercise efforts, including a weight loss program managed by a dietition for at least 6 months with a focus on lifestyle changes, including calorie reduction and increased exercise.

The patient is and will continue to keep a low calorie diet and regular exercise

The healthcare provider has consulted with the patient regarding risks (including but not limited to adverse drug events), benefits, realistic expectations associated with the requested drug and the need for long-term follow-up and adherence to behavior modifications.

Provider reassess patients every 4 weeks via follow ups to monitor their progress and surveil for side effects.

Provider attests that the patient incorpore dietary and exercise changes while taking GLP1, including a focus on building muscle through exercise and maintaining a diet rich in lean protein, fruits, vegetables, fiber, healthy fats, and proper hydration

Cash-Pay Access Is Now Much Easier

Brand-name options

Eli Lilly Direct (Zepbound):

- 2.5 mg: **~$299/**month
- 5 mg: **~$399/**month
- Higher doses: **~$449/**month with refill program

Key point:

- Direct prescribing to Lilly Direct
- KwikPen = simple, fixed dosing, easy for patients

Novo Nordisk (Wegovy / oral semaglutide via NovoCare)

Oral semaglutide (limited use case):

- Daily dosing
- Must take on empty stomach with small amount of water
- Less weight loss vs injectables
- More GI side effects
- Can interfere with thyroid medication absorption

***pricing from $149 to $299 per month**

Wegovy Pen

Pricing from $199 to $349

100% online, built for real life

- book at drbrainrx.com
- same-day telehealth consults (free)
- care team available 7 days/week for dosing + side effect support

Medications delivered directly to patient's home
→ no pharmacy coordination needed

All pathways covered
→ prior authorization team for insurance candidates
→ cash-pay brand name options
→ compounded GLP-1 options when appropriate

Transparent Pricing

Insurance / Brand Name Pathway
→ $99/month
→ includes prior authorization + ongoing clinical management
→ no additional DrBrainRx fees

Compounded GLP-1 Pathway
→ Flat monthly pricing (all-in)
→ Tirzepatide: $299
→ Semaglutide: $199
→ ~$225 average out-the-door (all fees included, no membership required)

Compounded GLP-1s: What PCPs Should Know

Old perception ❌
→ "wild west," inconsistent dosing, safety concerns

Current reality (reputable pharmacies) ✅
→ USP <797> sterile compounding standards
→ batch testing (sterility, endotoxin, potency)
→ significantly improved consistency

Advantages ⬆️
→ lower cost
→ dose flexibility (microdosing, slower titration)
→ access when insurance fails

Clinical Philosophy

- We don't rigidly gate by BMI cutoffs
- Patients with high-normal BMI can benefit from microdosing
  → especially with protein intake + resistance training
- Goal: personalized dosing across a wide BMI spectrum
  → not one-size-fits-all obesity care

What Primary Care Can Do Tomorrow

Recognize obesity as a driver of chronic headache

Screen for:


Sleep apnea


Hypertension


Insulin resistance


IIH red flags

Treat both:


Headache disorder


Metabolic disease

Understand access pathways:


When to try PA


When to go straight to cash options