

ANALGESICS: HEADACHE, PAIN, & FEVER

Self-Care and Over-The-Counter Options

Learning Objectives

- Compare and contrast the different OTC drug therapies utilized for pain management
- Describe the different types of headache
- List lifestyle modifications that can be utilized to reduce headache frequency and pain
- Understand the “do’s and do not’s” of fever management

<u>DRUG CLASS</u>	<u>ACETYLATED SALICYLATES</u>	<u>NON-ACETYLATED SALICYLATES</u>	<u>ACETAMNOPHEN</u>	<u>NSAIDs</u>
<u>DRUG NAMES</u>	Aspirin	Magnesium Salicylate	Acetaminophen	Ibuprofen Naproxen
<u>INDICATIONS</u>	Pain, fever, anti-inflammatory	Pain, fever, anti-inflammatory	Pain and fever NO anti-inflammatory	Pain, fever, and anti-inflammatory
<u>OTC DOSE</u>	Apirin 650 mg every 4 hours as needed (MAX 4 g per day)	Magnesium Salicylate 650 mg every 4 hours (MAX 4 g per day)	ACETAMINOPHEN 325 mg every 4 hours as needed (MAX 4 g per day)	IBUPROFEN 200 mg every 4 hours (MAX 1200 mg per day) NAPROXEN 220mg every 12 hours (MAX 660 mg per day)
<u>SIDE EFFECTS</u>	GI irritation/bleeding, anemia, tinnitus, nausea	Similar to aspirin	Side effects are RARE, but can include nausea	Nausea, heartburn, sun-sensitivity, dizziness/ fatigue
<u>CAUTION!</u> <u>(consult pharmacist or MD before taking)</u>	Urticaria-angioedema Kidney problems Clotting disorders Vitamin K deficiency	Similar to aspirin	Liver problems Dehydration Malnutrition Kidney problems	Heart failure Kidney problems Asthma GI problems
<u>OTHER INFO</u>	Onset of effect is same regardless of formulation DO NOT GIVE TO CHILDREN!	DO NOT GIVE TO CHILDREN Okay to use if patient has aspirin allergy	Okay to use if patient has aspirin allergy DO NOT DRINK ALCOHOL ON THIS DRUG	Take with a meal or with a glass of milk to cut down on side effects

HEADACHE

SELF-CARE APPROPRIATE HEADACHE CARE

	Tension Headache	Migraine Headache	Sinus Headache
Location	Bilateral	Usually unilateral	Face, forehead, periorbital area
Nature	Diffuse aching, tight, pressing, constricting pain. Feels like a vice squeezing the head. Caused by tight muscles in the neck and upper back. Triggered by stress, anxiety, or fatigue.	Throbbing—may be preceded by an aura (visual disturbances), nausea, intolerance to light and sound, vertigo, ringing in the ears, and irritability	Pressure behind the eyes or the face—especially upon bending over
Onset	More gradual	Sudden	Simultaneous with sinus problems, including purulent discharge
Duration	Minutes to days	Hours to 2 days	Resolves with sinus symptoms
What OTC med? (take as soon as you notice the headache is beginning for best results)	Analgesics (acetaminophen, ibuprofen, naproxen, aspirin)	DIAGNOSIS MUST BE MADE BY MD Analgesics (acetaminophen, ibuprofen, naproxen, aspirin)	<u>Decongestants</u> (pseudoephedrine, phenylephrine) & <u>Analgesics</u> (acetaminophen, ibuprofen, naproxen, aspirin)

Medications that **MAY** Trigger

- OTC Medications— aspirin, acetaminophen, caffeine
- Prescription Medications—“triptans,” opioids, butalbital, ergotamine
- Using longer than 3 months on a chronic basis
- “withdrawal” headaches can occur

Non-pharmacological Headache Treatments

- relaxation exercises, stretching, and strengthening the affected muscles
- Maintain a regular schedule for sleeping and eating
- Practicing methods to cope with stress
- Use ice-packs and pressure applied to the forehead or temple (reduces pain associated with acute migraine attack)
- Dietary Guidelines
 - Avoid foods that act as triggers
 - Avoid **hunger** and **low blood glucose** (VERY IMPORTANT!!)
 - Avoid food that are “vasoactive”
 - Red wine, aged cheese, artificial sweeteners, MSG, caffeine, chocolate

Exclusions to Self-Care for Headaches—when to see the doctor

- Severe head pain (> 6 on a pain scale)
- Headache that persists over 10 days with or without treatment
- < 7 years old
- High fever or other signs on infection
- History of liver disease or consumption of > 3 alcoholic drinks per day
- Headache related to a different disease (secondary headache)
- Symptoms consistent with migraine, but no formal diagnosis is made by a doctor

PAIN

HOW THINGS CAN GO WRONG

<u>CRITERION</u>	<u>OSTEOARTHRITIS</u>	<u>TENDONITIS & BURSITIS</u>	<u>SPRAIN & STRAIN</u>	<u>CRAMP</u>
<u>LOCATION</u>	Weight-bearing joints	joints	Sprain: joint Strain: muscle	Muscles
<u>SIGNS & SYMPTOMS</u>	Dull joint pain and stiffness relieved by rest	Warmth, redness, swelling, “cepitus.” <u>Tendonitis</u> —pain lessens during exercise <u>Bursitis</u> —pain is constant	Swelling, bruising, pain, and stiffening	Pain lasting seconds to minutes
<u>ONSET</u>	Years	Excessive use	Hyperextension (sprain—ligament Strain—tendon)	sudden
<u>GOOD FACTORS</u>	Therapeutic exercise	Joint rest & immobilization	RICE! REST ICE COMPRESSION ELEVATION	Proper hydration Not eating before exercise

“RICE” THERAPY—HINTS & TIPS

- Apply ice in 10 minute intervals 3 to 4 times a day
- Apply compression with an elasticized bandage
 - Tightly wrap at the most distal spot and decrease the tightness as you continue to wrap.
 - Cold, discolored, or swollen fingers/ toes indicate it’s too tight!
- Elevate the injured area above the level of the heart—decreases swelling and relieves pain

PHARMACOLOGICAL PAIN THERAPIES

- **Oral analgesics**
 - If swollen and painful—then use an NSAID (ibuprofen, naproxen, etc) if possible
 - If no swelling—take acetaminophen
- **Topical analgesics**
 - no systemic effect on pain
 - depending on what you take—there is a different effect
 - Cooling effect—camphor and menthol (aka Bengay, Icy-Hot)
 - Paradoxical pain—capsaicin
 - DO NOT USE ON AN OPEN WOUND!!!!

WHEN TO SEE THE DOCTOR

- Pain or injury is present after 10 days of treatment with OTC medication
- Pain is greater than 6 out of 10, or severe immobilization
- Pain is chronic (lasting longer than 2 weeks without therapy)

FEVER

WHAT?

- Body temperature higher than 98.6° F or 37° C
- Many causes

HOW?

The body makes PGE₂ in response to pyrogens. This substance elevates the thermoregulatory set-point in the hypothalamus. Body reacts with chills caused by peripheral vasoconstriction and muscle rigidity as the body attempts to stay in homeostasis.

COMPLICATIONS OF FEVER

- Dehydration
- Delirium/ confusion (seen with higher fever temperatures)
- Seizures
- Coma
- Irreversible nerve damage

TREATMENT

- **Pharmacological—“antipyretics” will reduce the fever and alleviate discomfort**
 - Inhibit PGE₂ synthesis by blocking prostaglandin synthesis
- **TOP CHOICES:**
 - Ibuprofen regimen or Acetaminophen regimen
- **Non-pharmacological**
 - Drink **PLENTY** OF FLUIDS
 - Wear light clothing and avoid excess clothing—do NOT bundle
 - Cool (NOT COLD) environmental temperature
 - Sponge bath in lukewarm water
 - Evaluate temperature through the course of the day (about an 2 hours after each dose)

WHEN TO SEE THE DOCTOR

- Symptoms of infection (ear infection, strep throat, etc)... anything that requires antibiotics
- Patients with COPD, asthma, or heart failure
 - Greater risk for hypoxia aka low oxygen levels
- Immunosuppressed
- Fever does not resolve within 3 day of therapy with antipyretics
- Fever is over 103°F or if there are signs of fever complications (delirium and dehydration)