

# Pain: Definition and Management

Carl Grey, M.D.

# Let's try to define pain...

- A warning sign
- The most common reason to go to the doctor
- Whatever the patient says it is?? (this is an example of how differently we present with and respond to pain)
- Merely a sensation?
- Part of being human?
- A warning sign gone wrong?
- To some, an inspiration??



# Pain in Literature

Pain has an element of blank.  
It cannot recollect  
When it began, or if there were  
A day when it was not.  
It has no future but itself,  
Its infinite realms contain  
Its past, enlightened to perceive  
New periods of pain.

- Richard Hugo's "The Triggering Town"
- "When Faulkner, replying to the questions, "Why do you drink so much?" answered, "For the pain," he may not have meant to cure the pain. He may have meant to keep it alive"

# Sri Chinmoy: Quotes on Pain

- “There is a general notion that if we go through suffering, tribulations and physical pain then our system will be purified. This idea is not founded upon reality.”
- “We shall not welcome pain; we shall try to conquer pain if it appears. If we can take pain as an experience, then we can try to transform it into joy by our own identification with joy, which we then try to bring into the pain itself.”
- “We know physical pain, vital pain and mental pain. But there is also psychic pain. On the ordinary human level, we get psychic pain when someone whom we are attached to deserts us. But on the spiritual level, psychic pain is an inner pain, a sense of supreme loss, the feeling that our Beloved Supreme, for whom we are crying, is still far away.”

# Humility with Pain

- It is a sensation that is felt, reacted to, pondered, written about, feared, and sometimes even wanted
- It has influenced every form of the arts
- It exposes how beautifully designed and naïve our body is at the same time
- There is so, so much more to learn

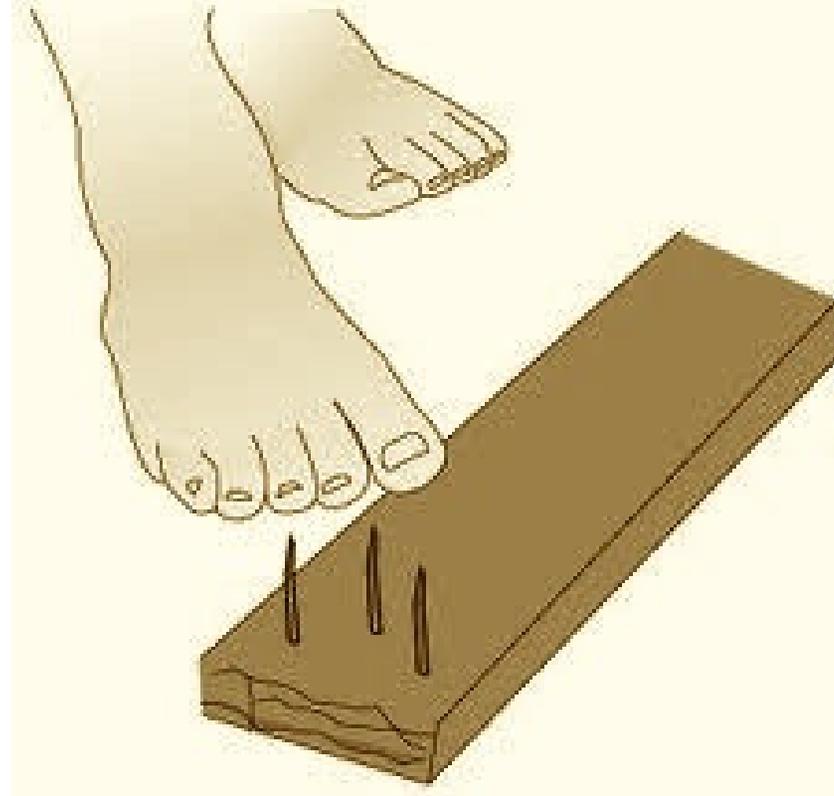
# In the beginning...

- Grandma (a 65 y/o F) tells me that there is pain in her right leg. It seems to be in her right femur and in her right knee. It is worse after sitting for a while, and worse after gardening. She has tried icing her leg and knee but to no avail. There is no swelling or redness. A day of rest in her chair doesn't really help. She didn't tell me about this until I noticed her having trouble getting out of her car and with walking up the stairs.

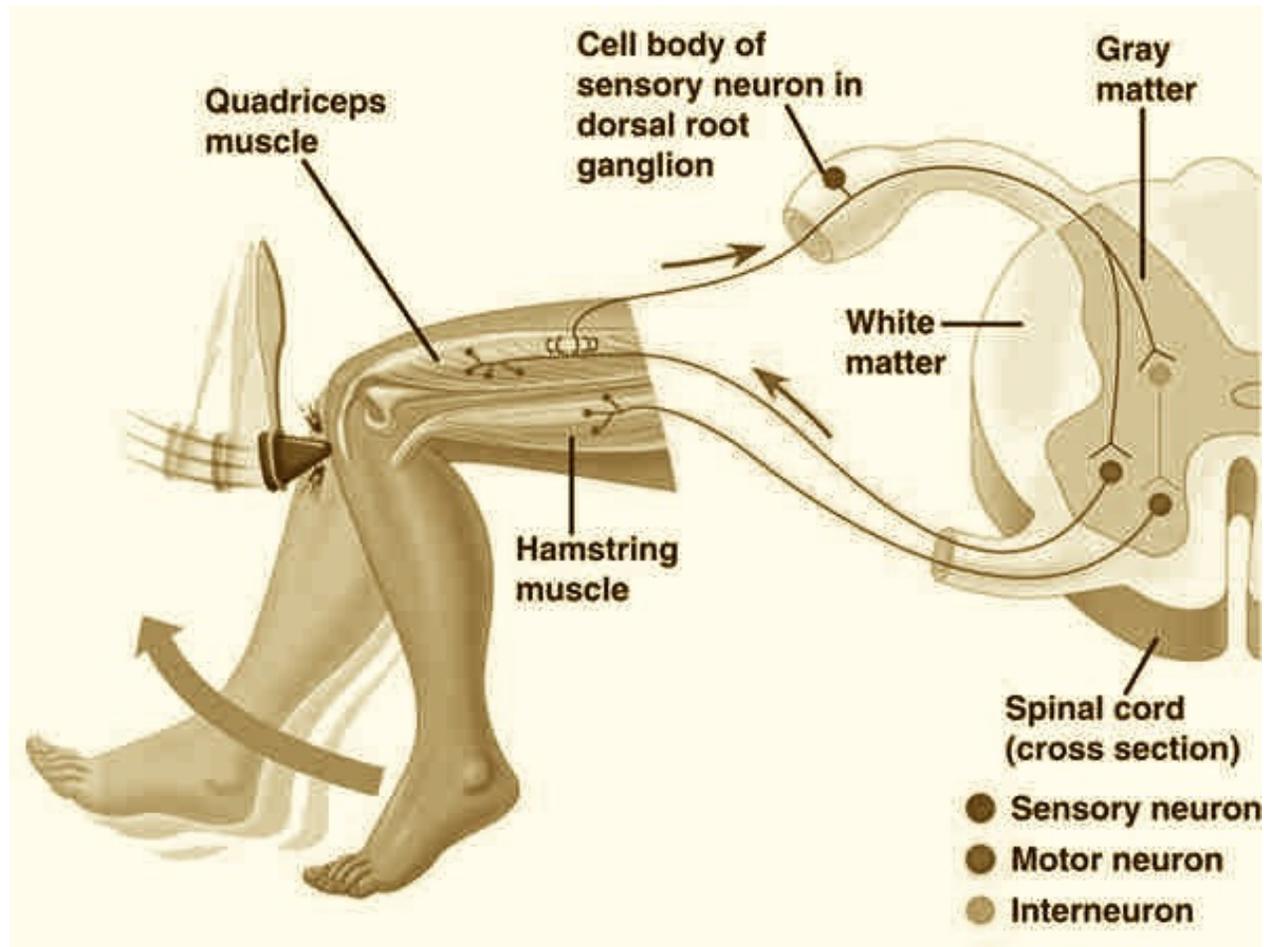
# What is most likely to be wrong?

- Knee arthritis
  - A pulled muscle
  - Hip arthritis
  - It doesn't matter, just walk it off
  - Cancer???!!!
- 
- Answer: Hip arthritis often referred down the front of the leg to the knee

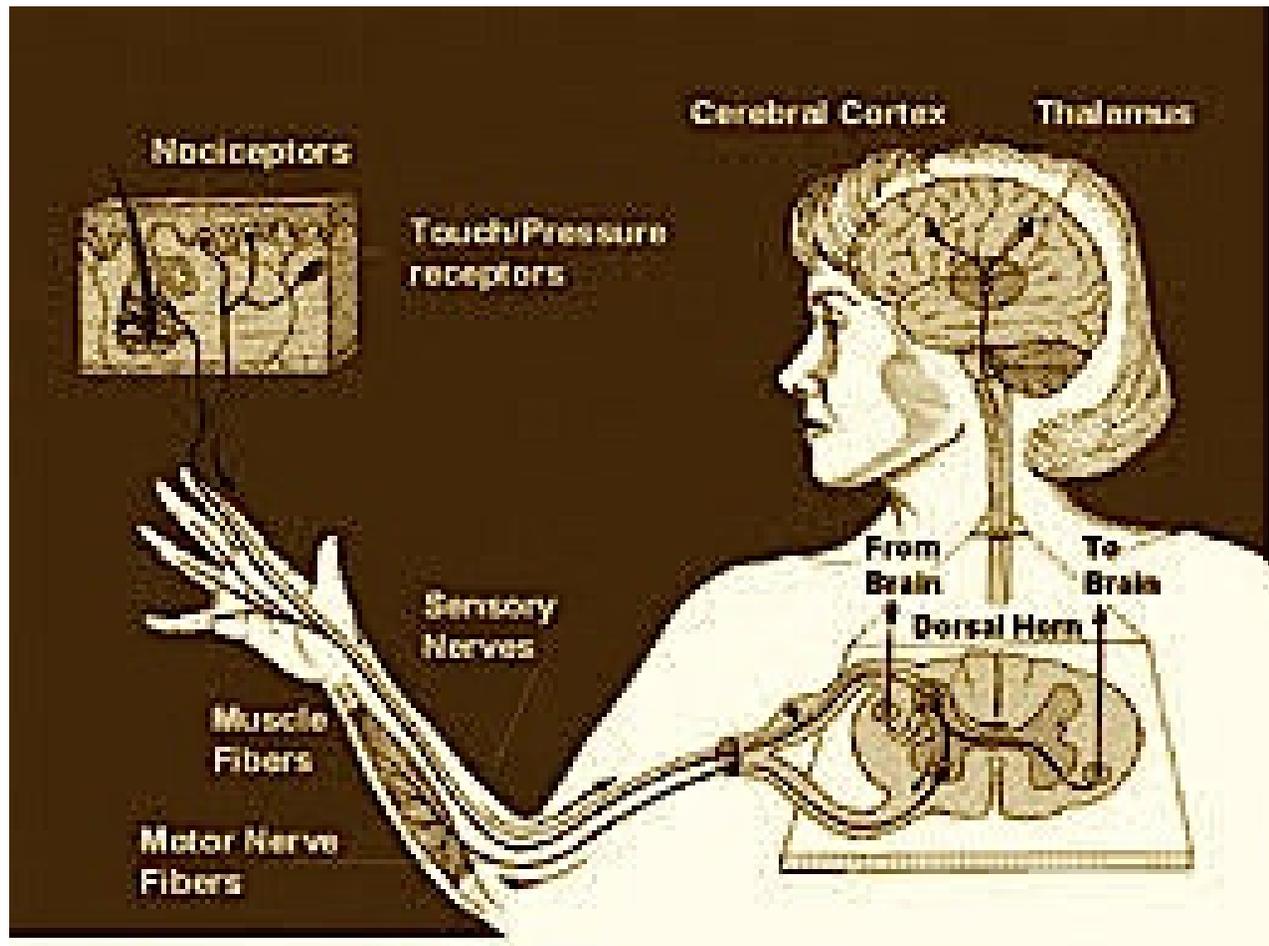
# Acute Somatic Pain



# Acute Somatic Pain



# At a higher level



## Back to Grandma...What could be wrong?

- Grandma goes to the doctor, and he asks her what her pain feels like (*whatever the patient says it is???*). She says, “I don’t know. what do you want to know?”. He is frustrated and asks her what it feels like in regards to the worst pain she has ever had. She replies “I’ve given birth to 6 children. It’s not as bad as that.”

# What does the doctor wants to know?

- Ideally, the doctor should ask an opened ended question about the pain, and then guide you with the important questions to TRY TO diagnose type of pain
- Different types of pain have different qualities. We usually ask questions dealing with “what, when, where, why, and how” (and sometimes even “who”)

# Qualifiers of pain...remember this slide when you go to the doctor!

- When, where, why, what and how...
- how does it feel? Has this ever happened before?
- Where is it exactly? Any pinpoint tenderness? Where does it go? When does it happen?
- How did it happen and why did it happen?
- How long does it last? How long has it been there?
- Does it change? What helps? What makes it worse?
- What is it on a scale from 1 to 10 (10 being the worst)?
- How does this affect your daily living and quality of life?

# What is 10 out of 10 pain?

- Any suggestions?
- Let me tell you my father's story...

# Pain can be confusing

- Acute vs. chronic
- Somatic
- Visceral
- Neuropathic

# Types of pain

- Somatic pain
  - Dr. Grey's foot pain
  - Grandma's hip pain
- Visceral Pain (organs)
  - Gallbladder attack
  - Heart attack

# Neuropathic pain

- Sciatica
- Herniated disc
- MD's have many medicines to attempt to treat this type of pain with medications, procedures, and surgery, but we have been scientifically proven to do a poor job of treating it (usually) without other modalities of therapy being involved (physical therapy, chiropractics, Yoga, and simple stretching) .

## Back to Grandma, The first step in treating inflammatory pain (acute vs chronic?)

- The doctor prescribes Ibuprofen (a type of NSAID) 600 mg three to four times a day. He also prescribed Tylenol (acetaminophen) 1000 mg three times a day.
- What is an NSAID? (answer is non steroidal anti-inflammatory drug)
- Name some types of ibuprofen (Advil, Motrin)

# Other methods?

- What else should the doctor NOT ask Grandma to try other than these medicines?
- Bed rest for 3 days to allow her leg to recover
- Physical therapy immediately
- See the orthopedist about other options, such as surgery
- Yoga
- (Answer is bed rest)

# What is the maximum dose of ibuprofen?

- 600 mg a day
- 1200mg a day
- 2400 mg a day
- 4800 mg a day
- Answer for most people is 2400 mg in 24 hours. But if you have kidney problems or issues with bleeding easily, especially from your gastrointestinal tract, you should talk to your doctor about it

# What are the side effects of ibuprofen?

- If not taken correctly, kidney damage or failure.
- Ulcers/ GI bleeding
- Interactions with other medicines (depending on the type of NSAID)
- Depending on the age and whether a person has heart disease, they can increase the risk of congestive heart failure.

# What is the maximum dose of tylenol?

- 1000 mg a day
- 2000 mg a day
- 3000 mg a day
- 4000 mg a day
- Answer: 4000 mg in 24 hours, unless if you have liver problems, drink alcohol daily, or take other drugs that can affect the liver. You should probably talk to your primary doctor and/or pharmacist before taking it daily
- Can Tylenol interact with Coumadin? Yes or No? Answer is yes, it makes your blood thinner and easier to bleed
- Is it ok to drink alcohol with Tylenol? No!

# What is the most common drug that is fatally overdosed in the USA?

- Aspirin
- Tylenol
- Ibuprofen
- Derivatives of opiates (oxycodone, percocet, vicodin, morphine, etc)
- (Hint, it has two L's, to remind you that it can really hurt your liver) Answer: tylenol

# Grandma 3 months later

- The ibuprofen and Tylenol were taken correctly, and she still has pain affecting her daily activities. The doctor recommends oxycodone. She asks what this is, and he tells her “it is stronger, kind of like morphine.” She tells me that she won’t take it because “I don’t want to get addicted to that. People sell that on the street here in (NY Neighborhood removed so I won’t offend anyone)!”

# What are opioids?

- Any derivative or byproduct of opium. Some are natural (codeine and morphine) and some are synthetic (oxycodone, hydrocodone, hydromorphone).
- They bind to natural opiate receptors in the body to decrease the sensation of pain.
- It is actually the next **DRUG-OF-CHOICE** after Tylenol for wear-and-tear arthritis, or osteoarthritis (but don't forget complimentary and alternative methods like **Physical Therapy**, massage, ultrasound, heat and/or ice, and other alternative therapies)

# The stigma of opioids (oxycodone from the last slide is an opioid)

- The opium wars (lasted about 20 years)
- The junky/ heroine addict
- The news (My state, West Virginia, usually abuses more opioids per capita than any other state)
- Famous people in history who were addicted to opioids
- “I don’t want to get addicted!!!”

# Who is this?



I am asked about him all the time when prescribing pain meds, but he did not die from an opioid overdose.

# What is addiction?

- is a primary, chronic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.
- **In Layman's terms:** You will miss work, leave your wife or husband and family, spend your savings, and commit crimes to get the feeling that the drug you are addicted to creates. This is more **PSYCHOLOGICAL**

# What is dependence?

- a state of adaptation that is manifested by drug-class specific withdrawal **PHYSICAL** symptoms that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist
- **In Layman's terms:** You are **HOPEFULLY** taking this drug for a reason. After time, your body expects it to be there, like many other medicines that you might take (Blood pressure, thyroid, antidepressants). Stopping it can cause physical symptoms, but you are not necessarily **PSYCHOLOGICALLY** addicted to them.
- These medicines are for pain. When taken by doctor's orders for pain, addiction is rarely a problem.

# Side effects of opioids

- Pupil constriction (harder to see in the dark)
- Nausea
- Sleepiness
- Itchiness
- Constipation (the most persistent, all others above constipation on this slide should resolve or improve in about a week).
- You should also reconsider driving. Maybe someone else can drive?

# Seminal event

- Grandma breaks a hip. She is in the ER for over 24 hours and during that time, she never has adequate pain control. She asks for pain medicine and it takes an hour to come. When it does come, it is not strong enough to help her pain. The following day, she has her surgery, and she has pins put in her hip to help it heal. Geriatrics is consulted to help with pain management.

# Acute becomes Chronic?

- The beautiful machine becomes a dumb animal
- The cerebral cortex becomes more and more involved in what used to be a simple response to pull away from a noxious stimulus
- Chronic pain is likely a misfiring of neurons intended to turn on pain receptors leading to signals we never wanted and probably never needed
- Better control of acute pain (with opiates and possibly nerve blocks) may actually prevent chronic pain 6 months later. Sinai has research to prove it.

# Marijuana and a role in Chronic pain?

- It's illegal basically everywhere but in California
- Good studies support its use in HIV related neuropathy, muscle spasms related to multiple sclerosis, and suboptimal studies show it to be useful in chronic back pain/ spasms
- Decreases intraocular pressure in glaucoma (known for many years)
- Marinol is the pill form of THC (the active chemical in marijuana) but it is mainly used to help with nausea and poor appetite during chemotherapy

# Marijuana and the placebo effect

- Drugs used to help pain and for psychiatric problems (like depression) have the highest placebo effect
- The placebo effect is when a drug isn't any better than the sugar pill
- If a sugar pill can work, then a drug like marijuana is probably hard to prove to be superior to other drugs, simply because of other effects it has on the brain (i.e. happy)
- Isn't your pain less bothersome when you are really happy?

# Beautiful machine or dumb animal?

- A friend loses his arm below the elbow after a car accident. After a few days, he senses the limb is still there, but frozen. After about a week, he is experiencing pain that feels nothing like what he has felt before. No position helps. This pain awakens him at night, every night. The sleep loss and the loss of his arm leads to depression.

# What is a promising treatment for treating phantom limb pain?

- Nerve blocks before surgery
- Reamputation
- Removal of nerves in the stump years after surgery
- Imagining the limb there and moving
- Seeing the limb moving with mirrors and virtual reality
- Opioids

Answer: seeing the limb move with  
the mirror box



# Mirror box treatment for phantom limb pain

- Almost all previous treatments had no effect on the sensations in the phantom limb of pain and being frozen (i.e. can't move it)
- Seeing it move in a mirror helps correct the rewiring that the brain has incorrectly done to make up for the missing limb
- This is a good example of how doctors have approached a problem incorrectly for years, and that mind over matter is important.

# Takatsubo (Octopus trap)

- A 48 year old healthy woman just found out that her son committed suicide after a break-up with his girlfriend. She comes into the ER with crushing chest pain and she is found to have EKG changes that doctors call an STEMI!!! They proceed with a cardiac catheterization to find completely normal coronary arteries. Her Echocardiogram shows a 20% ejection fraction (normal is 60%).

# Is a broken heart real?

- There was no heart disease to explain this woman's pathology
- Her ejection fraction (amount of blood pushed forward by the heart) and heart motility returned to almost normal in about 8 months.
- Mind over matter???
- The stress from the loss of a child almost killed this woman. There is no drug to help this.

# Take home points

- We all experience pain, but you may experience it differently from the person next to you
- Think hard about your pain before you go to the doctor. The information you give is vital for the correct diagnosis, testing, and treatment
- Ask your doctor QUESTIONS about medicines when they suggest or prescribe them. Don't wait until you get home, then read the possible side effects and never try them. A side effect is not common just because it is listed in the drug information.

# Take home points

- Always ask what other methods other than medicines might help your pain, alone or along with medication
- Over the counter drugs need to be taken carefully and according to instructions on the bottle

# Take home points

- Stronger medicines such as different opioids have an important purpose. When taken correctly, they may help alleviate and even suppress possible future chronic pain.
- Find a pharmacy you like and get to know your pharmacist. It has been shown that asking your pharmacist questions can decrease the number of medications and help prevent mistakes on prescriptions (even small mistakes)

# Take home points

- If a specialist such as an orthopedist or neurologist starts you on a new medication, you need to let your primary care doctor know. Don't assume that your primary doctor got the memo from the other doctor