Essential Pain Management

Introduction

Why EPM?

Why EPM?

- Pain is common.
- Pain is often poorly managed.
- We need a better system.

EPM is a *system*

For managing pain
For teaching others

A System?

Trauma	Pain
Multiple causes	Multiple causes
Team management	Team management
ABC system	No system
ATLS, PTC training	?

Overall EPM Aims

Better recognition

Better assessment

Better treatment

Workshop Objectives
You will be able to:

- Recognize pain
  - Define pain
  - List benefits of treating pain
- Assess pain
  - Measure severity
  - Classify types of pain
  - Assess other factors

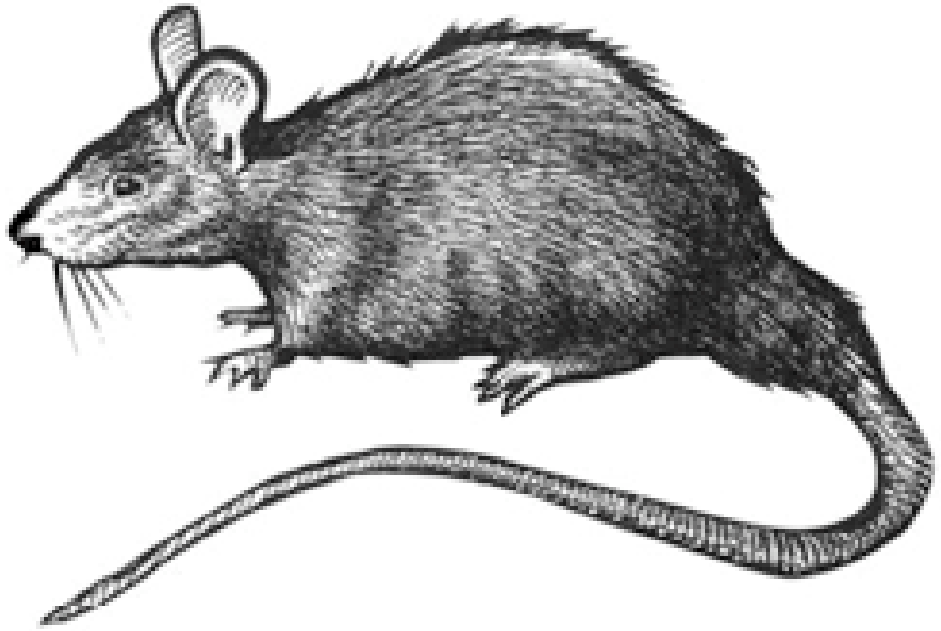
Workshop Objectives
You will be able to:

- Treat pain
  - List non-pharmacological treatments
  - List pharmacological treatments
- Devise an action plan to address local barriers.

Workshop Plan

- Short, interactive lectures
- Discussions on barriers and solutions
- Case discussions

Untreated Pain

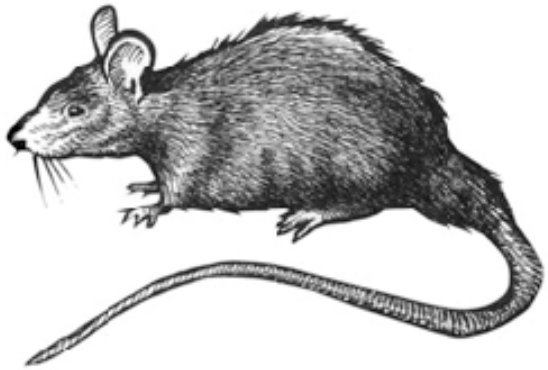


Untreated Pain

- Often hidden (not recognized)
- Causes a lot of suffering
- But … can often be treated simply and cheaply

RAT System

- Recognize
- Assess
- Treat



Recognize

- Does the patient have pain?
- Do other people know the patient has pain?

Assess

- How severe is the pain?
- What type of pain is it?
- Are there other factors?

Treat

- What non-pharmacological treatments can I use?
- What pharmacological treatments can I use?

?

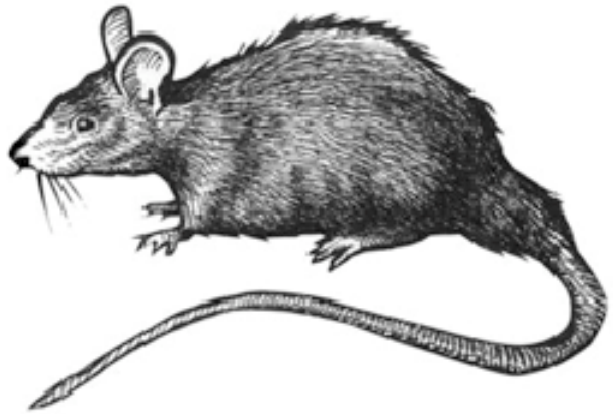
Introduction
Summary

- Pain is common.
- Pain is often poorly treated.
- We need a better system.
- RAT provides this system.

Recognize

Assess

Treat



Recognize

R

- Does the patient have pain?
- Do other people know the patient has pain?

A

- The next lectures will cover:
  - The definition of pain
  - The benefits of treating pain

T

What is Pain?

R

A

T

What is Pain?
Objectives

R

A

T

You will be able to:

- Define pain
- Use this definition to recognize pain

Group Discussion

R

- *Think of a patient who has or had pain.*
- *How did he or she describe the pain?*

A

T

Does this person have pain?

R

A

T

What is Pain?

- International Association for the Study of Pain (IASP)
  - Pain is ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage’.
- *Are there any other definitions?*

R

A

T

What is Pain?

- Pain is unpleasant.
- Emotions are important.
- The cause is not always visible.

R

A

- 'Pain is what the patient says hurts.’

T

Does this person have pain?

R

A

T

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R

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T

What is Pain?
Summary

R

A

T

- Pain is an unpleasant sensory and emotional experience.
- Remember to ask!

Why Should We Treat Pain?

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Why Should We Treat Pain?
Objectives

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A

T

You will be able to:

- List the benefits of treating pain:
  - For the patient
  - For the family
  - For society

Case Discussion 1

- Mrs T is a 33-year-old woman with uterine cervical cancer. The cancer has spread to her spine and she has disabling pain. The surgeons do not have any other options to treat her cancer. She is married with two children, aged 11 and 8.
- *Why should we treat her pain?*

R

A

T

Case Discussion 2

- Mr G is a 54-year-old man who has just had a laparotomy for bowel obstruction. You see him on the surgical ward soon after the operation. He complains of severe pain.
- *Why should we treat his pain?*

R

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Benefits of Treating Pain

- For the patient
  - Physical
    - Better sleep, improved appetite
    - Fewer medical complications
      (e.g. heart attack, pneumonia)
  - Psychological
    - Reduced suffering
    - Less depression, anxiety

R

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T

Benefits of Treating Pain

- For the family
  - Improved function as part of the family (e.g. as a father / mother)
  - Able to keep working
- For society
  - Reduced health costs (e.g. shorter hospital stay)
  - Able to contribute to the community

R

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What are the benefits for this child?

R

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Group Discussion

R

- *Are there any reasons for NOT treating pain?*

A

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Why Should We Treat Pain?
Summary

R

- Treating pain is the ‘humane’ thing to do!
- Treating pain has many benefits:
  - For the patient
  - For the family
  - For society

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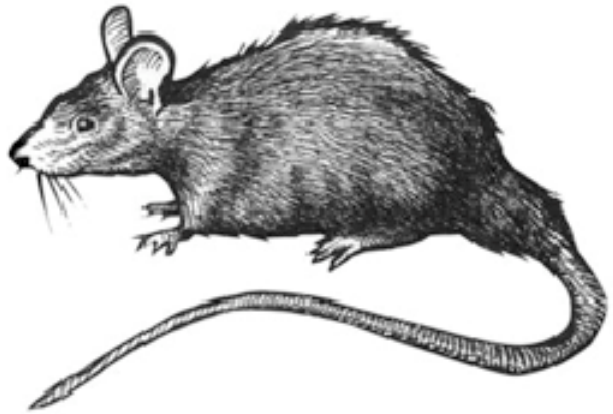
Recognize

Assess

Treat



Assess

- How severe is the pain?
- What type of pain is it?
- Are there other factors?

R

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T

Assess

R

A

T

- How severe is the pain?
  - What is the pain score?
  - How is the pain affecting the patient?

Assess

R

A

T

- What is the pain type?
  - Acute or chronic?
  - Cancer or non-cancer?
  - Nociceptive or neuropathic?

Assess

- Are there other factors?
  - Physical?
  - Psychological?

R

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Assess

R

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- The next lectures will cover:
  - Assessment of severity
  - Classification of pain
  - Underlying physiology and pathology

Assessment of Severity

R

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T

Assessment of Severity
Objectives

R

A

T

You will be able to:

- Understand the reasons for assessing severity
- Use different methods to assess severity

Assessment of Severity

R

- Guides choice of treatment
- Measures response to treatment

A

- ‘Pain is the 5th vital sign.’
  - Measure and *record* severity

T

Assessment of Severity

- What is the pain score?
  - At rest?
  - With movement?
- How is the pain affecting the patient?
  - Can the patient move, cough?
  - Can the patient work?

R

A

T

Methods

- Verbal Rating Scale
  - Mild, moderate, severe
  - 0 (no pain) to 10 (worst pain imaginable)
- Visual
  - Visual Analogue Scale (VAS)
  - Faces Pain Scale (FPS)
- Other
  - Functional Activity Score (FAS)
  - More specialised methods

R

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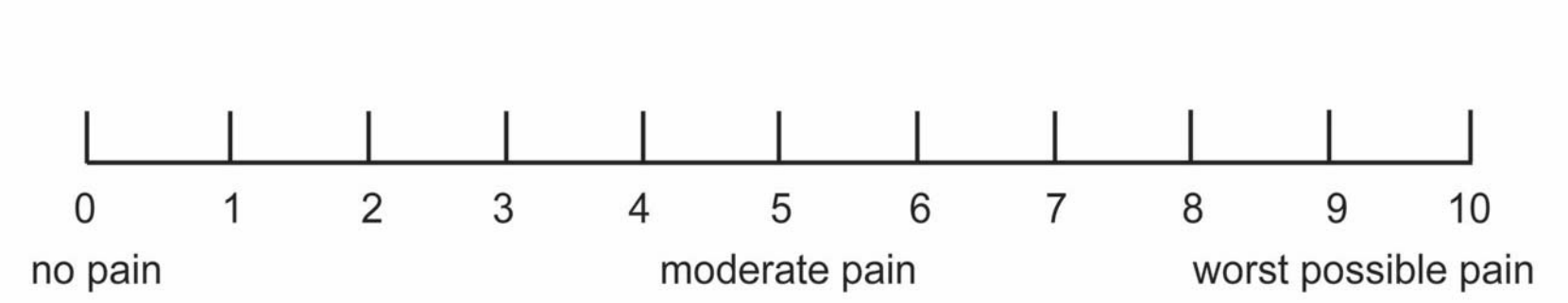
Visual Analogue Scale

R

Ask the patient to show what his/her pain is on a scale of 0 to 10.

A



T

Faces Pain Scale

R

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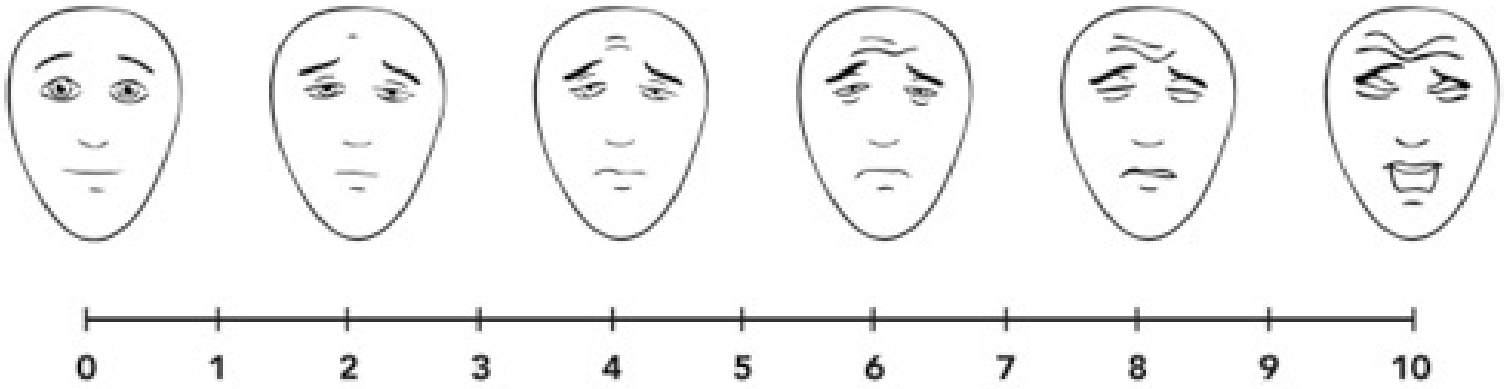

Faces Pain Scale – Revised, ©2001
International Association for the Study of Pain
[www.iasp-pain.org/FPSR]

Functional Activity Score

- Is pain limiting function? R
- Steps
  - Pain at rest (0 to 10)
  - Pain during activity (0 to 10), e.g. deep breathing, getting out bed A
- Score T
  - A: No limitation
  - B: Mild-moderate limitation
  - C: Severe limitation

?

R

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4.9

Assessment of Severity
Summary

R

- Assessment of severity guides treatment and measures response.
- Common methods include:
  - Verbal Rating Scale
  - Visual Analogue Scale
  - Faces Pain Scale

A

T

Classification of Pain

R

A

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Classification of Pain
Objectives

R

A

T

You will be able to:

- Classify types of pain
- Give examples of types of pain
- Understand that treatment depends on the pain type

Classification of Pain

- Not all pain is the same!
- Three main questions:

1. How long has the patient had pain?
2. What is the cause?
3. What is the pain mechanism?

R

A

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Classification of Pain

Duration	Acute Chronic
Cause	Cancer Non-cancer
Mechanism	Nociceptive (physiological) Neuropathic (pathological)

R

A

T

Acute versus Chronic

- Acute
  - Pain of recent onset and probable limited duration
- Chronic
  - Pain lasting for more than 3 months
  - Pain lasting after normal healing
  - Sometimes no identifiable cause

R

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T

Cancer versus Non-Cancer

R

A

T

Cancer versus Non-Cancer

- Cancer pain
  - Progressive
  - May be mixture of acute and chronic
- Non-cancer pain
  - Many different causes
  - Acute or chronic

Can you give examples of non-cancer pain?

R

A

T

Nociceptive Pain

- Obvious tissue injury or illness
- Sometimes called physiological pain
- Protective function
- Description
  - Sharp and/or dull
  - Well localised

R

A

T

Can you give examples?

Neuropathic Pain

- Caused by a lesion or disease of the sensory nervous system
- Tissue injury may not be obvious
- Does not have a protective function
- Description
  - Burning, shooting, pins and needles, or numbness
  - Not well localised

R

A

T

Can you give examples?

Examples of Pain Types

R

A

T

Acute Non-Cancer Pain

- Examples
  - Fracture, appendicitis
- Symptom of tissue injury or illness
- Usually nociceptive
- Occasionally neuropathic (e.g. sciatica)

R

A

T

How would you classify low back pain?

R

A

T

5.12

Chronic Non-Cancer Pain

- Examples
  - Chronic back pain, arthritis
- Cause may not be obvious
- Complex, may be mixed nociceptive and neuropathic
- Different pharmacological treatments may be needed

R

A

T

Cancer Pain

- Examples
  - Uterine cervical cancer, breast cancer
  - Metastases in bone
- Features of acute and chronic pain
  - May be acute on chronic
- Often mixed nociceptive and neuropathic pain
- Usually gets worse over time if untreated

R

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5.15

Classification of Pain
Summary

R

A

T

- Deciding on the type of pain is important.
  - Acute / chronic
  - Cancer / non-cancer
  - Nociceptive / neuropathic
- Treatment depends on the pain type.

Pain Physiology and Pathology

R

A

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Pain Physiology and Pathology
Objectives

R

A

T

You will be able to:

- Understand normal pain physiology
  - Nociceptive pathway
  - Factors affecting pain perception
- Understand the basis of neuropathic pain (pathology)

Why is pain physiology important?

R

- Many factors affect how we feel pain.
  - Psychological factors are very important.

A

- Different treatments work on different parts of the pathway.
  - More than one treatment is usually needed.

T

Nociception and Pain

- Nociception
  - How pain signals get from the site of injury to the brain.
- Pain
  - How we perceive or feel pain.

- Nociception is not the same as pain!

R

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R

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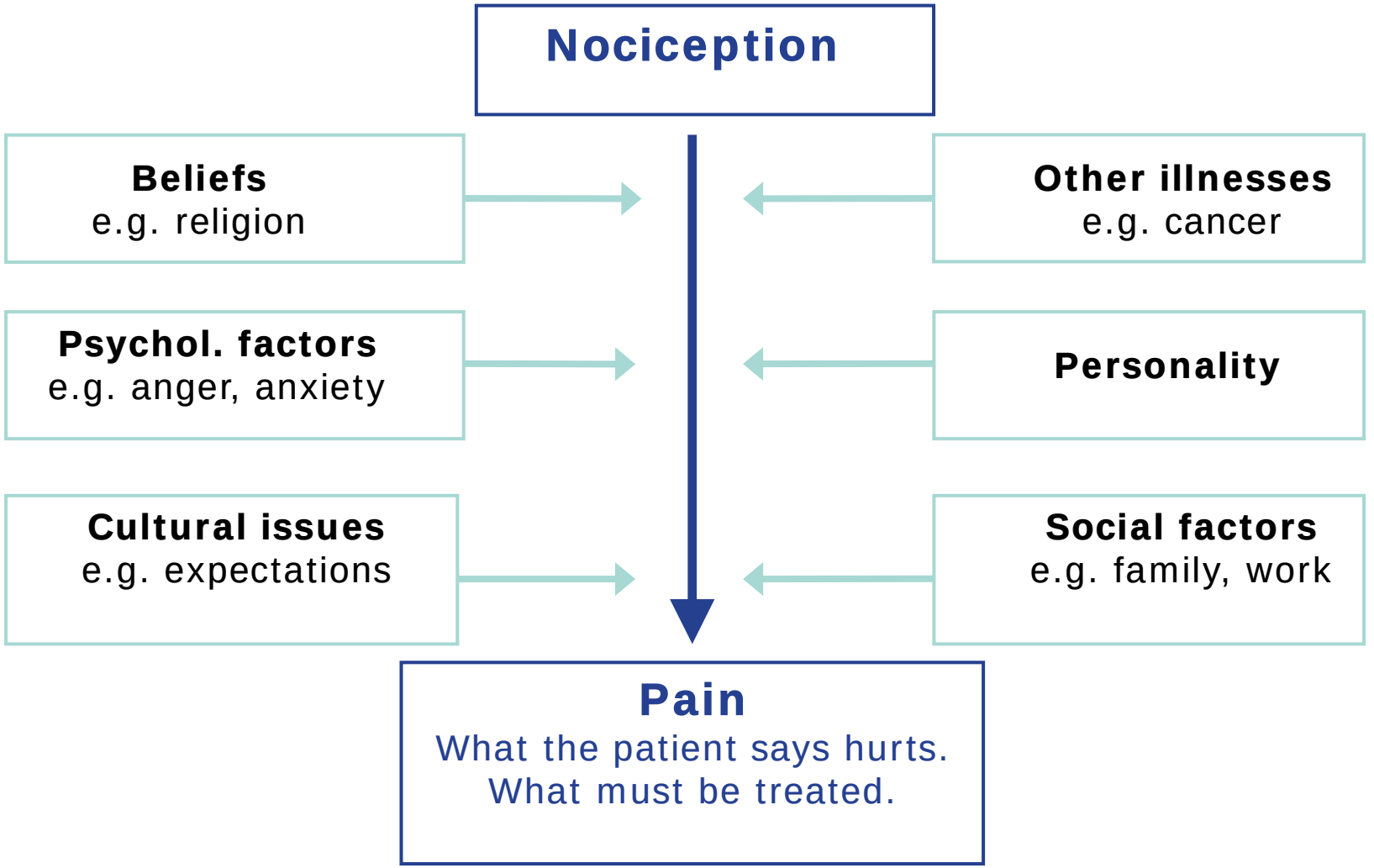
Is this man feeling pain?

6.5

Nociception is not the same as pain!



R

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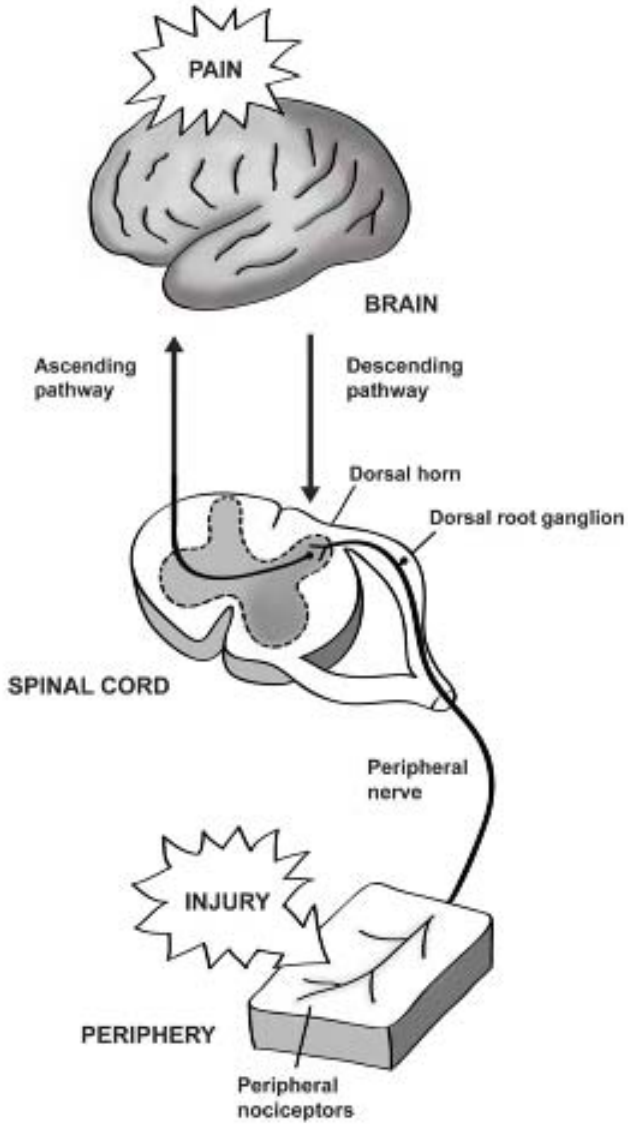
Modified from Analgesic Expert Group. Therapeutic Guidelines 2007

Physiology

- 4 steps:
  - Periphery
  - Spinal cord
  - Brain
  - Modulation
- We will look at each step.



R

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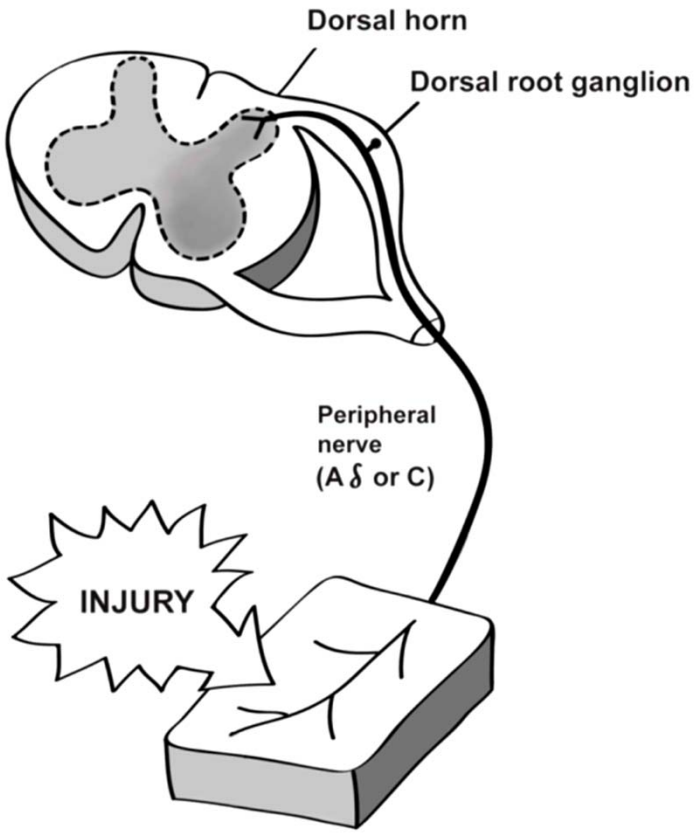
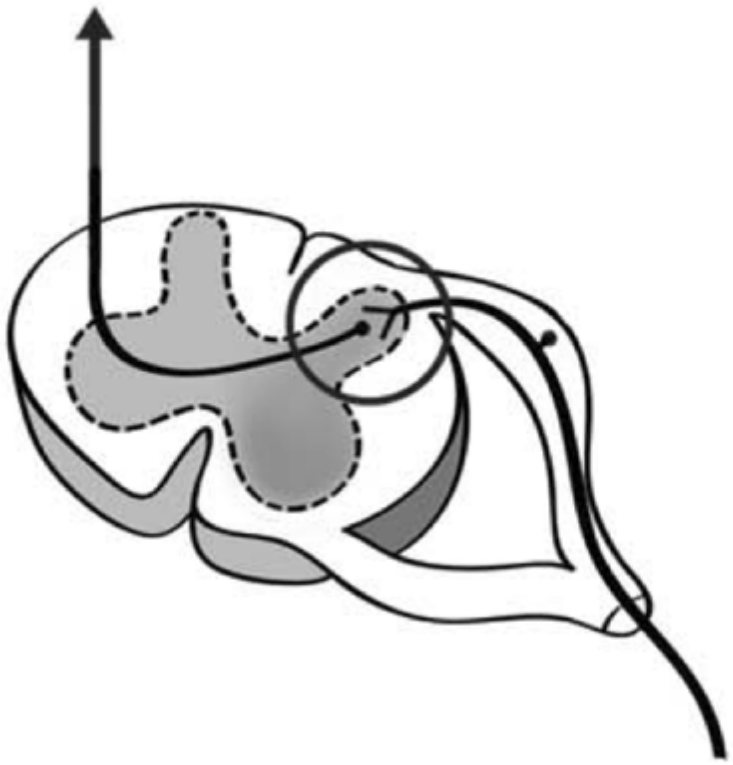
Periphery



- Tissue injury — R
- Release of chemicals — A
- Stimulation of pain receptors (nociceptors) — T
- Signal travels in Aδ or C nerve to spinal cord.

Spinal Cord



- Dorsal horn is the first relay station.
- Aδ or C nerve synapses (connects) with second order nerve.
- Second order nerve travels up opposite side of spinal cord.

R

A

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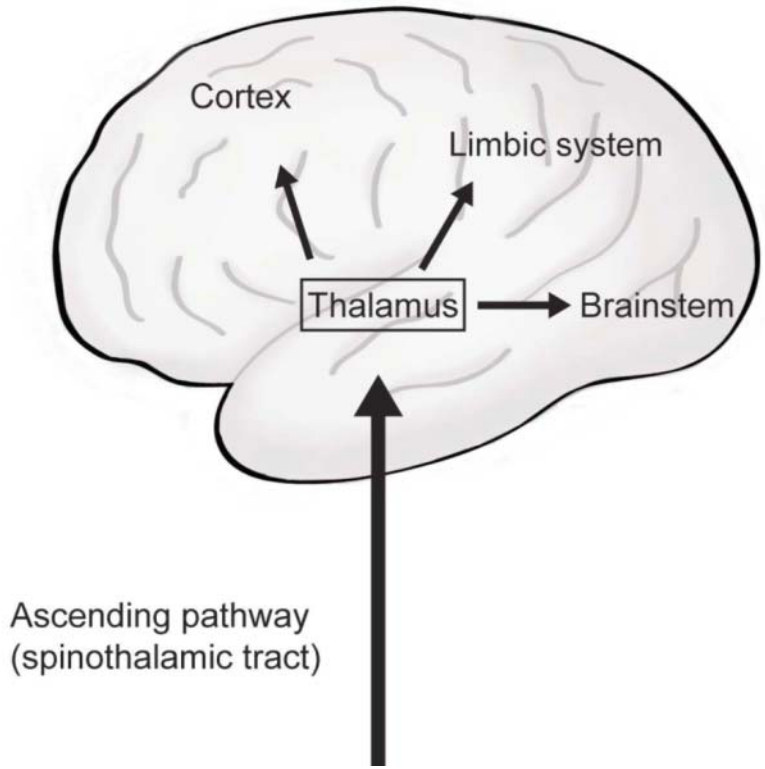
Brain



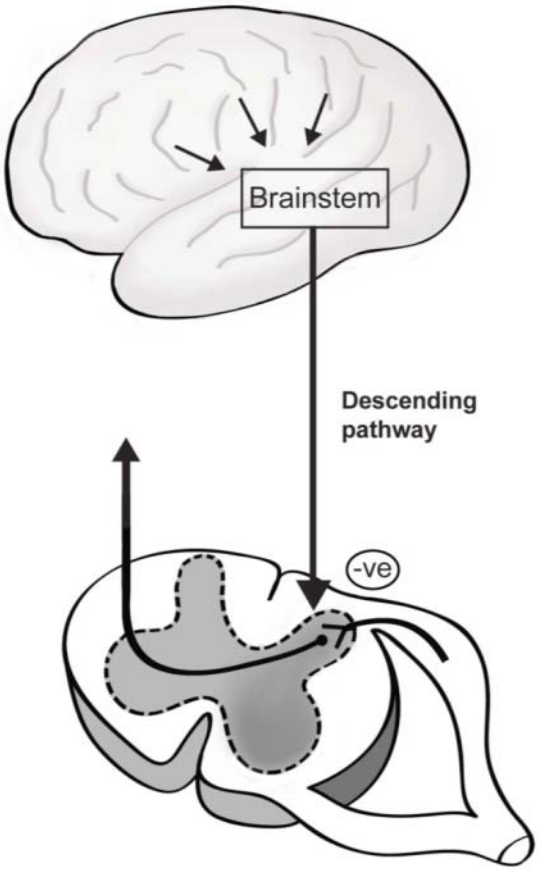
- Thalamus is the second relay station.
- Connections to many parts of the brain.
  - Cortex
  - Limbic system
  - Brainstem
- Pain perception occurs in the brain.

R

A

T

Modulation



- Descending pathway from brain to dorsal horn.
- Usually inhibits pain signals from the periphery.

R

A

T

Neuropathic Pain

- Pathological pain
- Abnormality of nociceptive pathway
  - Peripheral nerves
  - Spinal cord or brain
- Needs different pharmacological treatments

How do patients describe their pain?

R

A

T

Neuropathic Pain - Mechanisms

- Abnormal nerve tissue, e.g. amputation neuroma
- Abnormal firing of pain nerves
- Changes in chemical signalling in the dorsal horn
- Abnormal nerve connections in the dorsal horn
- Loss of normal inhibitory function

R

A

T

?

R

A

T

Pain Physiology and Pathology
Summary

R

A

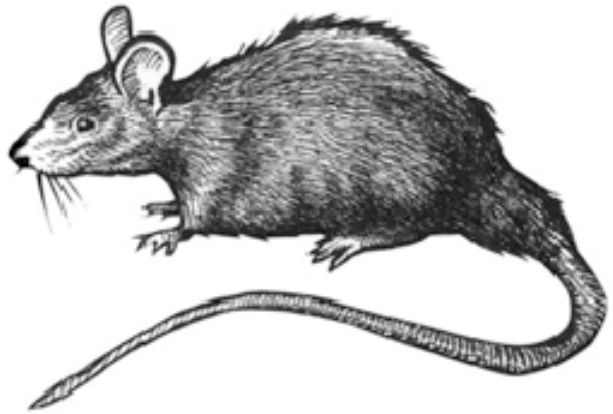
T

- Nociception is not the same as pain.
- Physical and psychological factors affect how we feel pain.
- Different treatments work on different parts of the nociceptive pathway.
- Neuropathic pain needs different pharmacological treatments.

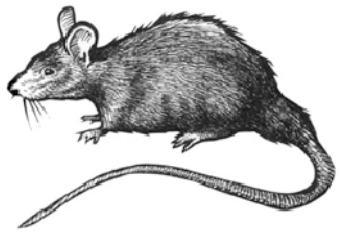
Recognize

Assess

Treat



Treat



- Non-pharmacological treatments?
- Pharmacological treatments?

- The next lectures will cover:
  - Non-pharmacological and pharmacological treatments
  - Pharmacology of common pain medications

R

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Pain Treatment Overview

R

A

T

Pain Treatment Overview
Objectives

R

A

T

You will be able to:

- Describe the non-pharmacological and pharmacological treatments that are available
- Classify pain treatments
- Understand the role of placebo treatment

Group Discussion

R

- *What non-pharmacological treatments are available?*
- *What pharmacological treatments are available?*

A

T

Non-Pharmacological Treatments

- Physical
  - Rest, ice, compression, elevation
  - Surgery
  - Acupuncture, massage, physiotherapy
- Psychological
  - Explanation
  - Reassurance
  - Counselling

R

A

T

Pharmacological Treatments

- Simple analgesics — R
  - Paracetamol (acetaminophen)
  - Anti-inflammatory medicines, e.g. ibuprofen — A
- Opioids — T
  - Mild, e.g. codeine, tramadol
  - Strong, e.g. morphine, pethidine, oxycodone

Pharmacological Treatments

- Other analgesics
  - Tricyclic antidepressants, e.g. amitriptyline
  - Anticonvulsants, e.g. carbamazepine, gabapentin
  - Local anaesthetics
  - Others, e.g. ketamine, clonidine

R

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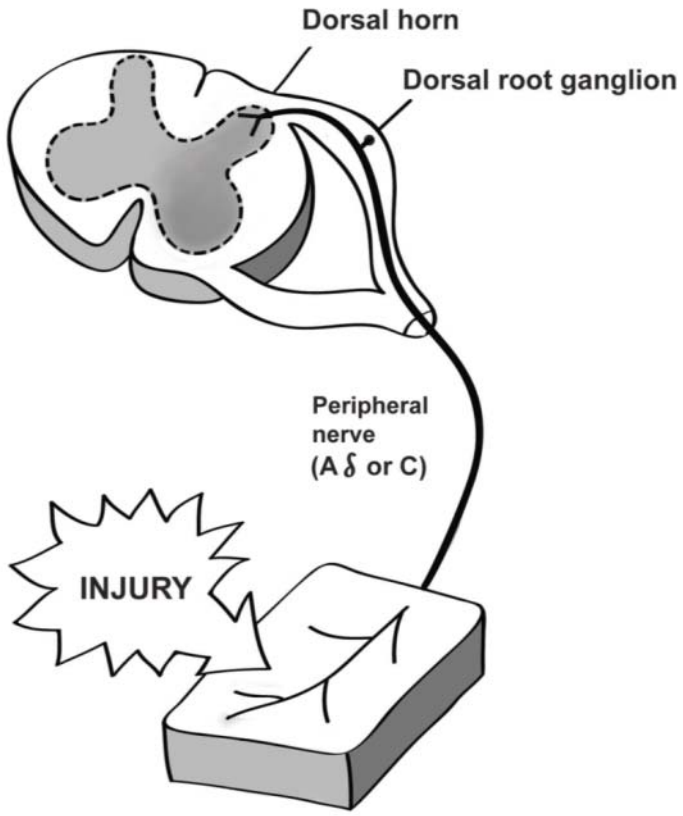
Treatments - Periphery



- Non-pharm treatments
  - Rest, ice, compression, elevation
- Anti-inflammatory medicines
- Local anaesthetics

R

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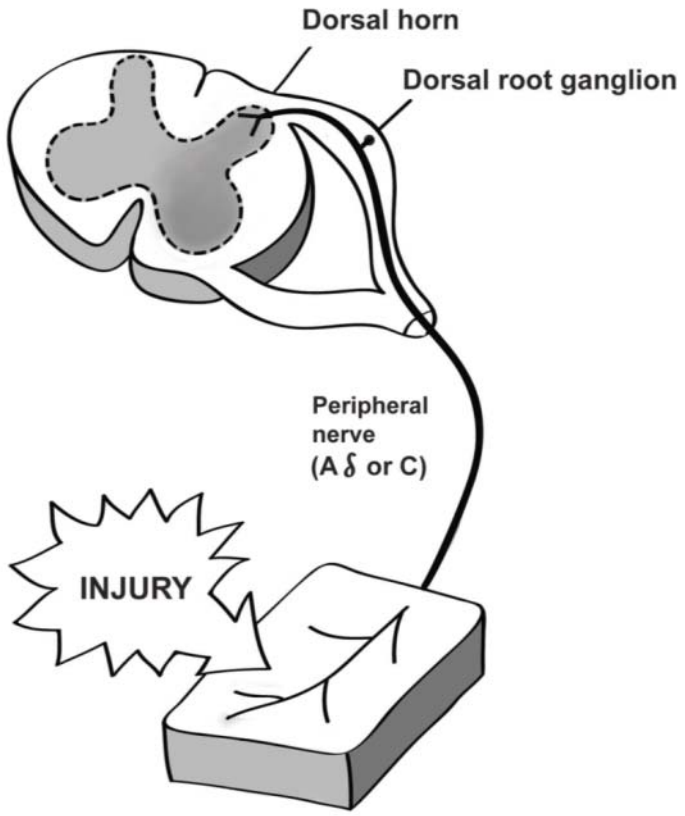
Treatments - Spinal Cord



- Non-pharm treatments
  - Acupuncture, massage
- Local anaesthetics
- Opioids
- Ketamine

R

A

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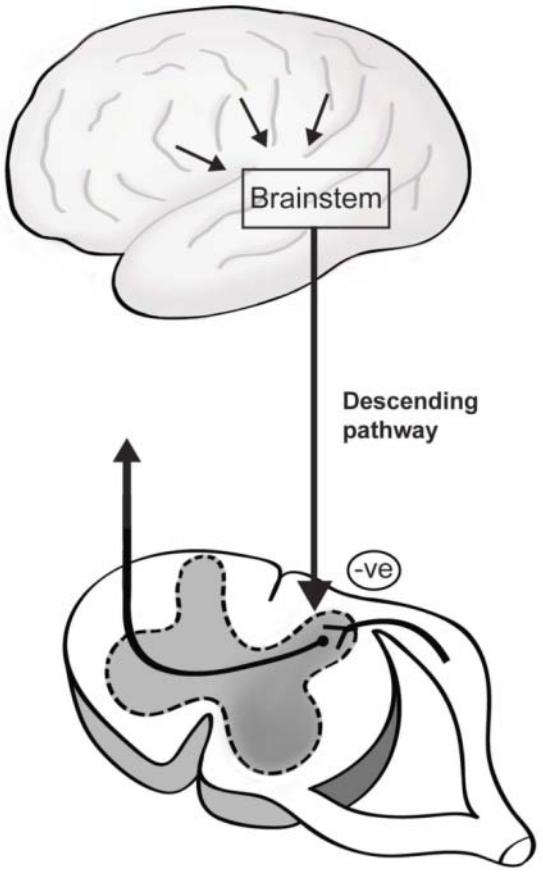
Treatments - Brain



- Non-pharm treatments
  - Psychological
- Pharmacological treatments
  - Paracetamol
  - Opioids
  - Amitriptyline

R

A

T

Group Discussion

R

- *What is a placebo treatment?*
- *Is it helpful or unhelpful?*

A

T

Placebo Treatment

R

A

T

- Psychological factors are important.
- If a placebo treatment works, this does not mean that the patient did not have pain or was telling lies!

?

R

A

T

7.12

Pain Treatment Overview
Summary

R

A

T

- Both non-pharmacological and pharmacological treatments are important.
- Different treatments work on different parts of the nociceptive pathway.
- Pain medications can be classified into simple analgesics, opioids and other analgesics.

Pain Medications

R

A

T

Pain Medications
Objectives

R

A

T

You will be able to:

- Outline broad principles of pharmacological treatment
- Summarise the major advantages and disadvantages of important medications
- Address concerns about opioid addiction

Broad Principles

- This lecture:
  - Gives a broad overview of pharmacological treatment in common situations
  - Gives examples of medications
- For more detail, including doses:
  - Case discussions
  - EPM manual and EPM app

R

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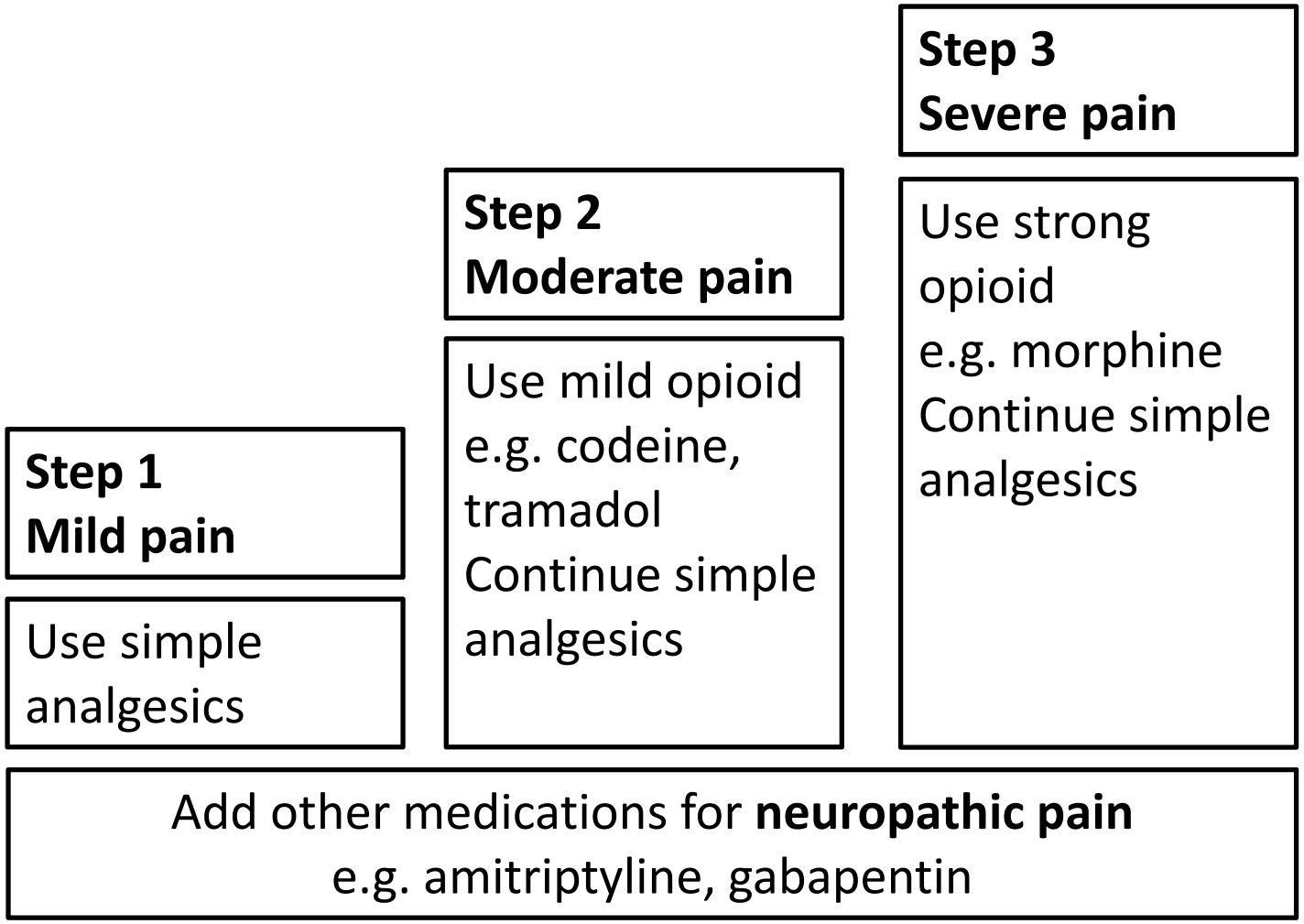
Treatment of Cancer Pain
WHO Ladder*



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8.4

*Modified

WHO Ladder

- Developed for cancer pain
- Emphasises oral treatment
- Treats nociceptive pain
- May need other medications for neuropathic pain

- Don’t forget non-pharmacological treatments!

R

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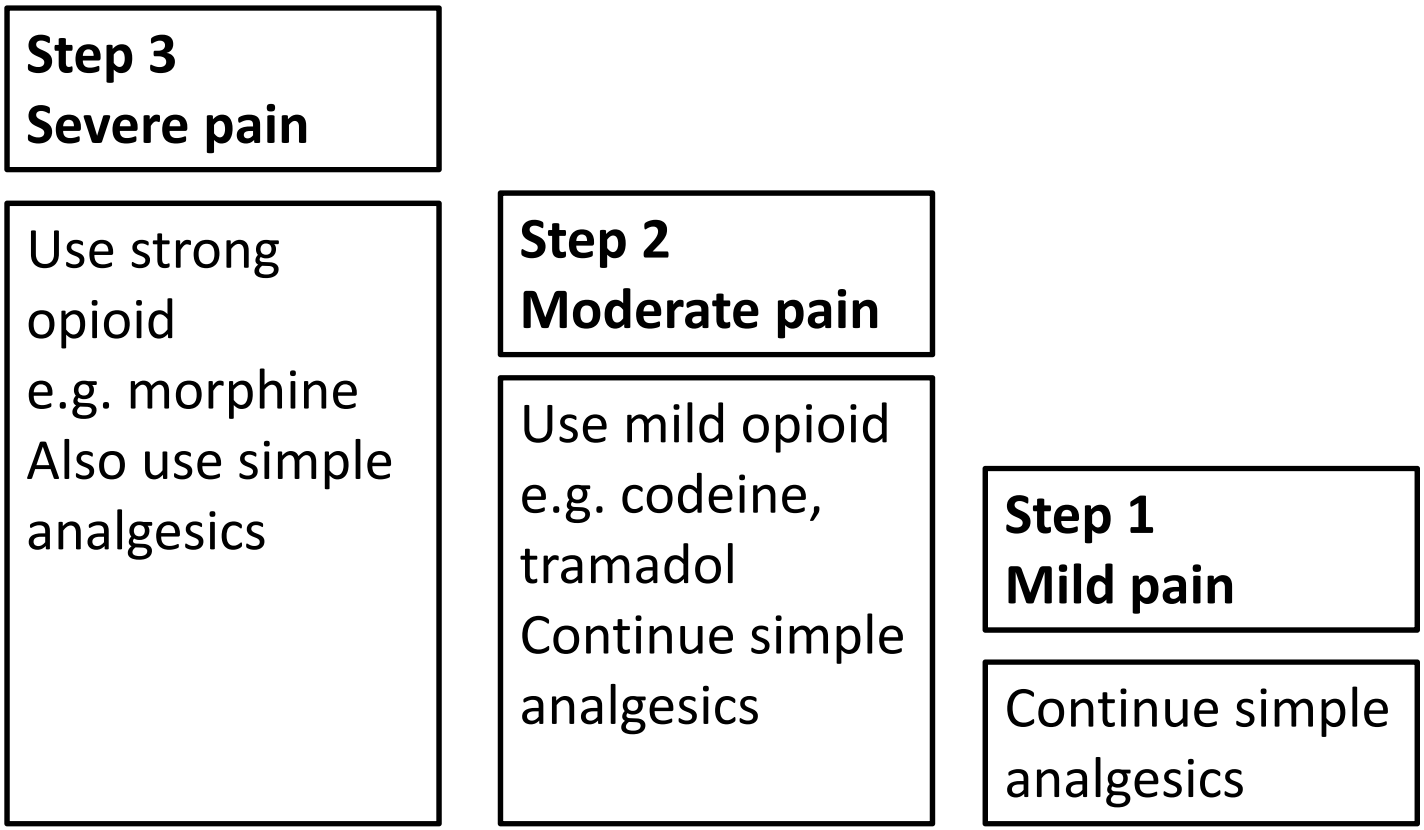
Treatment of Acute Nociceptive Pain

Reverse WHO Ladder



R

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Reverse WHO Ladder

- Mainly useful for severe acute nociceptive pain
  - Trauma pain
  - Post-operative pain
- Start at the top and ‘step down the ladder’ as the pain improves.

R

A

T

Chronic, Non-Cancer Pain

- Non-pharmacological treatments very important — R
- May need treatment for neuropathic pain — A
  - Antidepressants, e.g. amitriptyline
  - Anticonvulsants, e.g. gabapentin — T
- Opioids are usually not helpful and may cause harm.

R

A

T

Examples of Pain Medications

Paracetamol (Acetaminophen)

- Indications
  - Mild nociceptive pain
  - Moderate to severe nociceptive pain (with other medications)
- Advantages
  - Cheap, safe
  - PO, PR, IV
- Disadvantages
  - Liver damage in overdose

R

A

T

Ibuprofen

- Indications
  - Mild, moderate or severe nociceptive pain
- Advantages
  - Cheap
  - Usually safe if given short-term
- Disadvantages
  - Gastric and renal side effects
  - Interferes with blood clotting

R

A

T

Tramadol

- Indications
  - Nociceptive and neuropathic pain
- Advantages
  - Safe
  - Useful for different pain types
  - Can be used with morphine
- Disadvantages
  - Nausea and vomiting
  - Confusion

R

A

T

Morphine 1

- Indications
  - Moderate to severe, acute, nociceptive pain
  - Cancer pain
- Advantages
  - Very effective
  - Cheap
  - Usually safe
  - PO, IV, IM, SC

R

A

T

Morphine 2

- Disadvantages
  - Nausea and vomiting
  - Respiratory depression in high dose
  - Constipation
  - Misunderstandings about addiction
  - Legal controls

R

A

T

Morphine Dosing

- Oral dose is 2-3 times IV / IM / SC dose.

  Why is this?

- Tolerance
  - Increased dose needed over time
  - Very high doses may be needed in cancer treatment

R

A

T

Amitriptyline

- Indication
  - Neuropathic pain
- Advantages
  - Cheap
  - Safe in low dose
  - Also treats depression, poor sleep
- Disadvantages
  - Harmful in overdose
  - Dry mouth, drowsiness
  - Urinary retention

R

A

T

Gabapentin

- Indication
  - Neuropathic pain
- Advantages
  - Safe and effective
- Disadvantages
  - Drowsiness
  - Dose needs to be increased slowly

R

A

T

Group Discussion

R

A

T

- *What is addiction?*
- *How common is opioid addiction in patients with pain?*
- *Would this stop you giving opioids to a patient who has pain?*

Opioids and Addiction

- Addiction – Three C's
  - Craving
  - Loss of control
  - Negative consequences (harm)
- Addiction is very rare in acute pain and cancer pain.
- Addiction may occur if strong opioids are used to treat chronic non-cancer pain.

R

A

T

Group Discussion

R

A

T

- *Name 3-5 other pain medications used to treat different types of pain.*
- *What are their:*
  - *Indications?*
  - *Advantages?*
  - *Disadvantages?*

Medication Effectiveness

	Acute noci mild	**Acute noci severe**	**Acute neuro**	**Chronic non-cancer**	**Chronic cancer**
Paracetamol	+++	++	+	+	+
NSAIMs	++	++	+	+/-	+/-
Codeine	++	+	-	-	+/-
Tramadol	++	++	++	+	+
Morphine	-	+++	++	--	+++
TCAs	-	-	++	++	++
Anticonvulsants	-	-	++	+	+

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Pain Medications
Summary

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- Pain can be treated with relatively cheap and safe drugs.
- Morphine is very effective for cancer pain and acute severe nociceptive pain.
- In general, strong opioids should be avoided in chronic non-cancer pain.

Pain Management Barriers

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Pain Management Barriers
Objectives

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You will be able to:

- Summarise local pain management barriers
- Develop a plan to address local barriers

Group Discussion

- *Pain is often poorly managed. What are some of the reasons for this?*
  - *Patient factors*
  - *Medications*
  - *Health workers*
  - *System issues*
- *What are the main barriers where you work?*

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Pain Management Barriers
Summary

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- Pain is often poorly managed.
- Barriers include lack of knowledge, health worker attitudes and lack of medications.
- You can help to address these barriers where you work!

Using the RAT System

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Using the RAT System
Objectives

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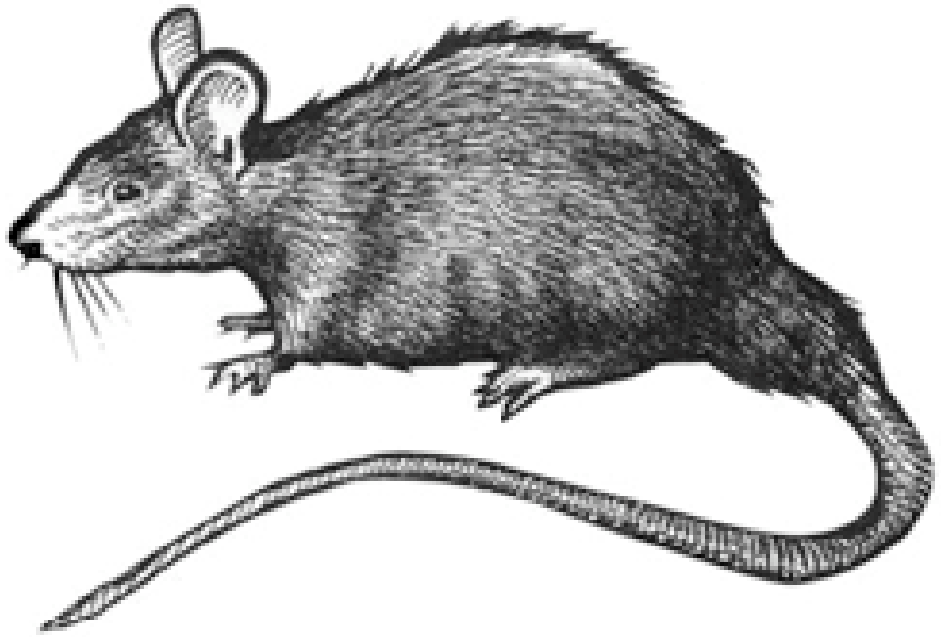
You will be able to:

- Summarise the RAT system
- Apply this system to different types of pain
- Understand the importance of reassessment

Using the RAT System



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Using the RAT System

- Recognize
- Assess
- Treat

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Using the RAT System

- Recognize
- Assess
  - Severity?
  - Type?
  - Other factors?
- Treat
  - Non-pharmacological treatments
  - Pharmacological treatments

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Using the RAT System

Recognize

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- Does the patient have pain?
  - Ask
  - Look
- Do other people know the patient has pain?
  - Other health workers
  - Patient's family

Using the RAT System

Assess

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- How severe is the pain?
  - Measure at rest
  - Measure with movement

Using the RAT System

Assess

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- What type of pain is it?
  - Acute or chronic?
  - Cancer or non-cancer?
  - Nociceptive or neuropathic?

Using the RAT System

Assess

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- Are there other factors?
  - Physical factors
    - Underlying illness
    - Other illnesses
  - Psychological and social factors

Using the RAT System

Treat

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- Non-Pharmacological Treatments
  - For both nociceptive and neuropathic pain
  - Physical

    (e.g. rest, ice, elevation, physiotherapy, massage)
  - Psychological

    (e.g. reassurance, explanation, counselling)

Using the RAT System

Treat

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- Pharmacological Treatments – Nociceptive Pain
  - Consider paracetamol, NSAIMs, tramadol, codeine, morphine
  - Use combinations

    (e.g. paracetamol + NSAIM + opioid)
  - Use IV morphine for acute, severe pain

Using the RAT System

Treat

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- Pharmacological Treatments – Neuropathic Pain
  - Consider using tramadol, tricyclic antidepressant (e.g. amitriptyline) or anticonvulsant (e.g. gabapentin)

Using the RAT System

Reassess

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- Repeat RAT
- Is your treatment working?
- Are other treatments needed?

Using the RAT System
Example 1

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- A 32-year-old man caught his right hand in machinery at work. He presents with a compound fracture of his hand.
- *How would you manage his pain using RAT?*

Using the RAT System
Example 2

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- A 55-year-old woman presents with a large breast tumour with spread to her spine. She has severe pain.
- *How would you manage her pain using RAT?*

Using the RAT System
Example 3

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- A 51-year-old man has a 2-year history of lower back pain which sometimes radiates down his right leg. He fell recently and is now having problems walking.
- *How would you manage his pain using RAT?*

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Using the RAT System
Summary

- Recognize
- Assess
  - Severity?
  - Type?
  - Other factors?
- Treat
  - Non-pharmacological treatments
  - Pharmacological treatments
- Reassess

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