LOW BACK PAIN

Matt Woronczak

Emergency Physiotherapy Practitioner

Dandenong Hospital

OVERVIEW

- Assessment of any area:
  - Subjective
  - Physical / Objective
  - Further Tests / Imaging
  - Diagnosis
  - Treatment
    - Pharmaceuticals
    - Other Interventions
    - Education

OVERVIEW

- Expectations for both Clinician and Patient:
  - Clinician to be able to:
    - Diagnose
    - Treat accordingly
  - Patient to
    - Want diagnosis
    - Manage vs “Cure” / Quick fix

CASE STUDIES

CASE #1

- 29 yr old female with acute LBP without radicular pain, mother has Hx of LBP which she had lumbar surgery for.
- Pt apprehensive about movement, activity. Pt's mother not wanting to discuss alternative methods of pain relief, mobilisation or conservative management; DEMANDING MRI

CASE #2

- 65 yr old male with acute LBP without leg pain after lifting a bag of potting mix
- Non smoker, fit (runs, rides and goes to gym) and healthy
- Pt on no regular medications
- Pt travelling overseas in a few weeks

CASE #3

- 40 yr old male with acute exacerbation of 5/12 Hx chronic LBP with radicular pain from work-related injury – hasn't worked since
- CT essentially normal. MRI mild disc bulges at 3 levels
- Pt on Panadol Osteo, Tramadol, Nurofen, Naproxen, Aspirin, Lyrica (as well as Duramine, Nodoze).
- No regular regime – taking tablets ad hoc
- Pt obese, heavy smoker, no physical activity
- Presents to ED post collapse due to pain in R leg in corridor on way to visit wife in maternity
- Pt vague++

OVERVIEW

LOW BACK PAIN

Overview

- Low back pain affects at least 70% of population at some stage during their life
- In Australia, LBP is the single most frequent presentation to GPs
- At DDH, there are approximately 1000 LBP presentations (based on diagnosis code) per year

LOW BACK PAIN

Overview

- The cause of pain is non-specific in 95% of patients
- Serious conditions are rare (but obviously need to be identified)
- Most episodes are self limiting :
  - 90%+ substantially better within 2 weeks; episodes > 2 weeks affect only 14% of the population at some stage during their lifetime
  - Majority of people with LBP make full recovery within 3/12

ANATOMY

LOW BACK PAIN

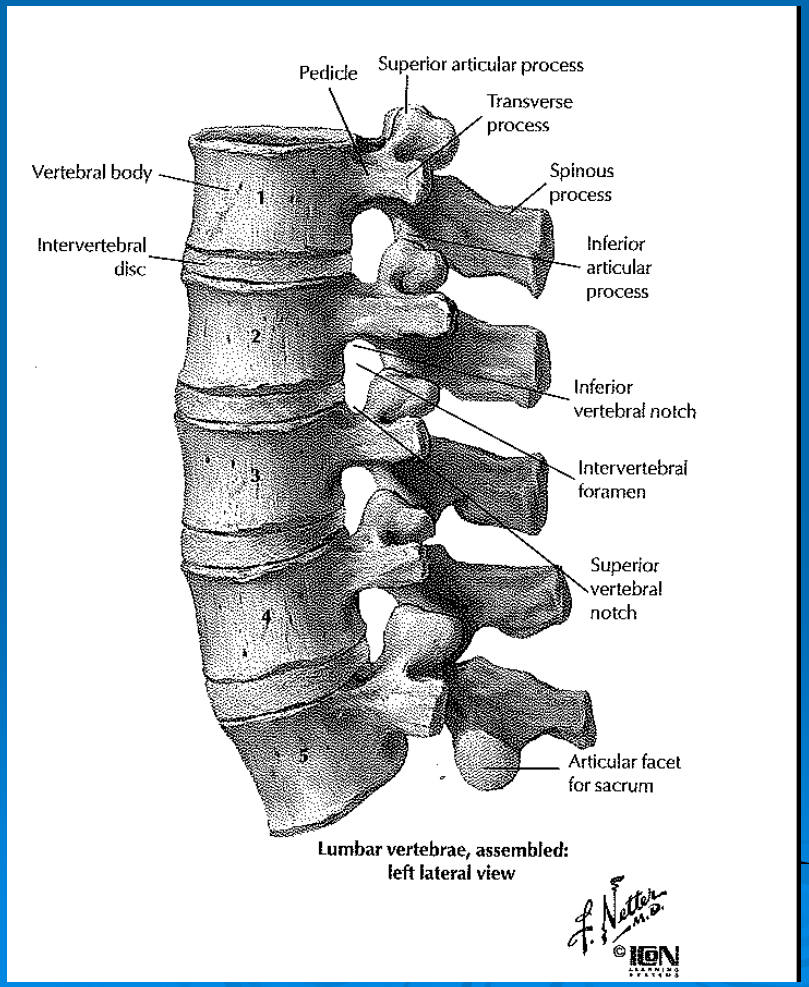
Anatomy

- Vertebrae
- Zygopophyseal / Facet joints
- Intervertebral discs
- Various ligaments
  - Anterior and Posterior Longitudinal ligaments
  - Interspinous ligaments
  - Intertransverse ligaments etc
- Complex of muscles – short and long
- Spinal cord and nerve roots

= LOTS THAT CAN GO WRONG

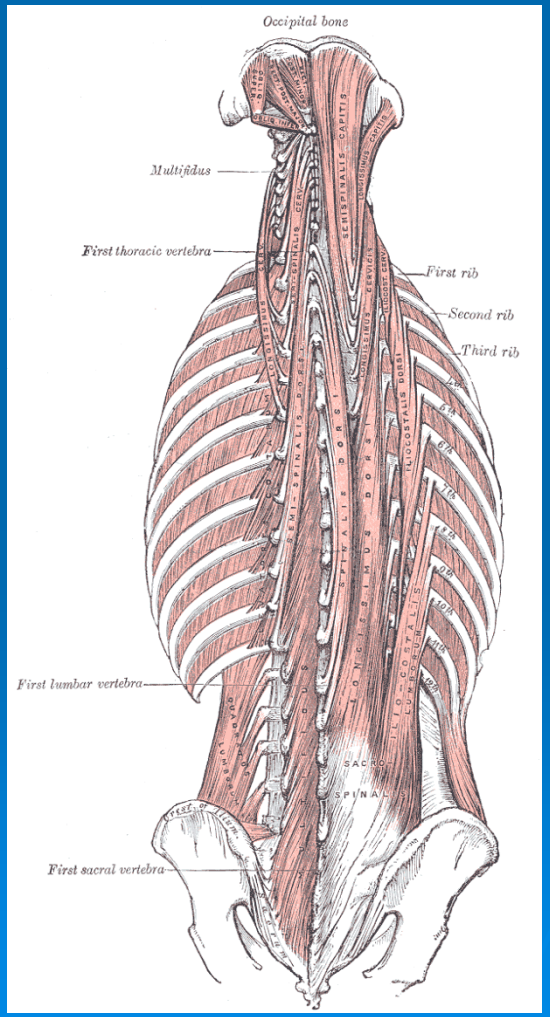
LOW BACK PAIN

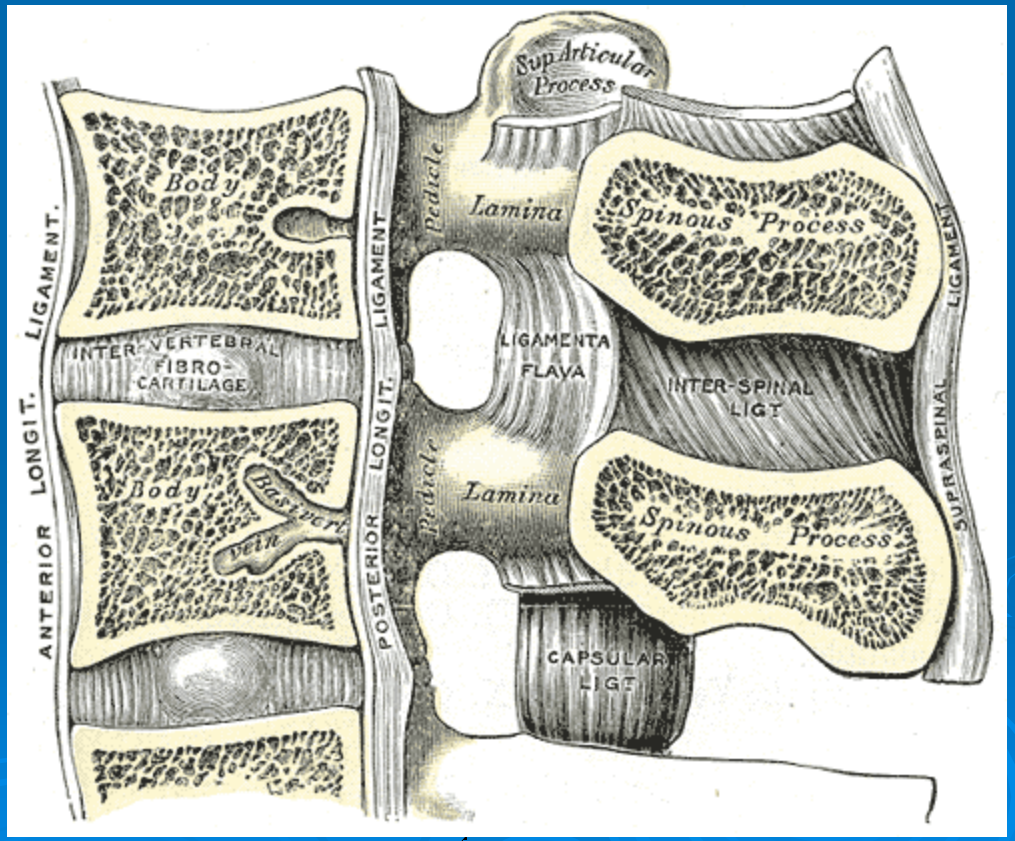
Anatomy



LOW BACK PAIN

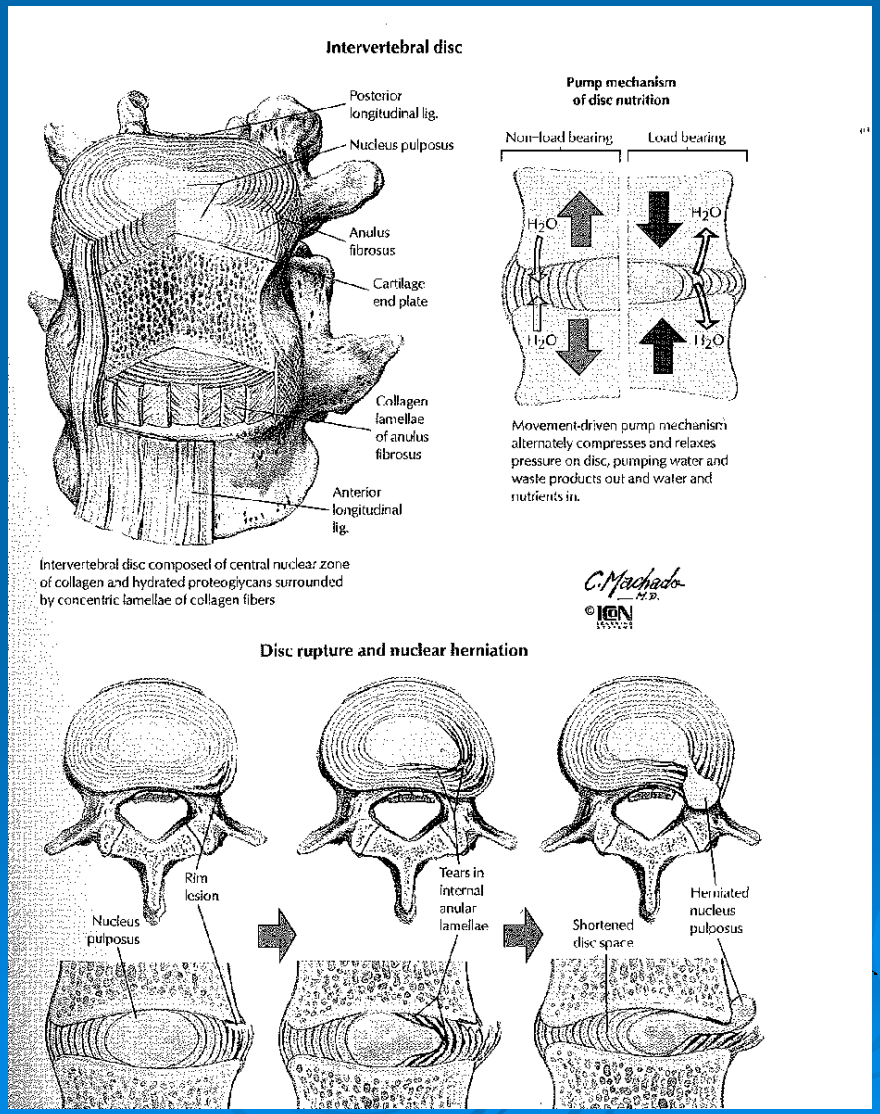
Anatomy





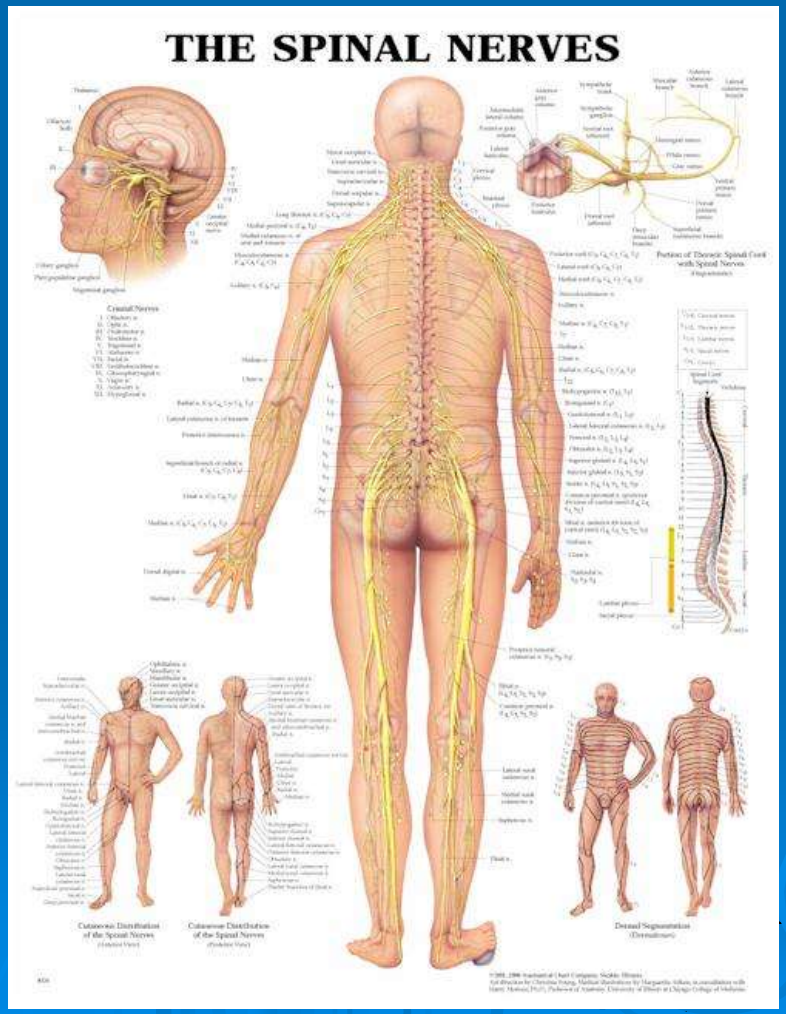
LOW BACK PAIN

Intervertebral Disc



LOW BACK PAIN

Anatomy



LOW BACK PAIN

- Referred pain from other structures vs Radicular pain from nerve compression

ASSESSMENT

LOW BACK PAIN

ASSESSMENT

LOW BACK PAIN

SUBJECTIVE ASSESSMENT

- MECHANISM OF INJURY (IF ONE)
- Initial Symptoms
  - Region of Pain
  - Presence of Lower Limb Symptoms – Pins and Needles, Numbness, Pain, Weakness
  - Initial dysfunction and management
- Progression of Symptoms
- Specifics NOW:
  - Aggravating and Easing Factors
  - Pain behaviour (ie progression during day, presence of resting pain)

SPECIAL QUESTIONS

- Bowel / Bladder Dysfunction (Incontinence, retention, offensive urine, constipation)
- Unexplained Loss of appetite, loss of weight
- History of recent or current illness
- History of IV drug use

LOW BACK PAIN

SUBJECTIVE ASSESSMENT

- **SOCIAL HISTORY**
  - Smoker?
  - Activity Level ?
  - Occupation?

LOW BACK PAIN

Yellow Flags

YELLOW FLAGS

Yellow Flags indicate psychosocial barriers to recovery. They include:

- Belief that pain and activity are harmful
- 'Sickness behaviours' (like extended rest)
- Low or negative moods, social withdrawal
- Treatment that does not fit best practice
- Problems with claim and compensation
- History of back pain, time-off, other claims
- Problems at work, poor job satisfaction
- Heavy work, unsociable hours
- Overprotective family or lack of support

LOW BACK PAIN

OBJECTIVE ASSESSMENT

- Observations – HR, BP, TEMP (IF INDICATED)
- Neurovascular status
- Local changes (?dermatomal rash)
- Bed Assessment:
    - SLR / PKB
    - Neurological Ax (If Indicated) – Tone, Power, Reflexes, Sensation
    - Palpation
- Standing Assessment
    - Posture / presence of list (pelvic shunt to side)
    - Lumbar Range Of Motion (If Not Particularly Irritable)
        - Flexion / Extension / Lateral Flexion / Rotation
- Special Tests
    - Waddell's Signs

NEUROLOGICAL EXAMINATION

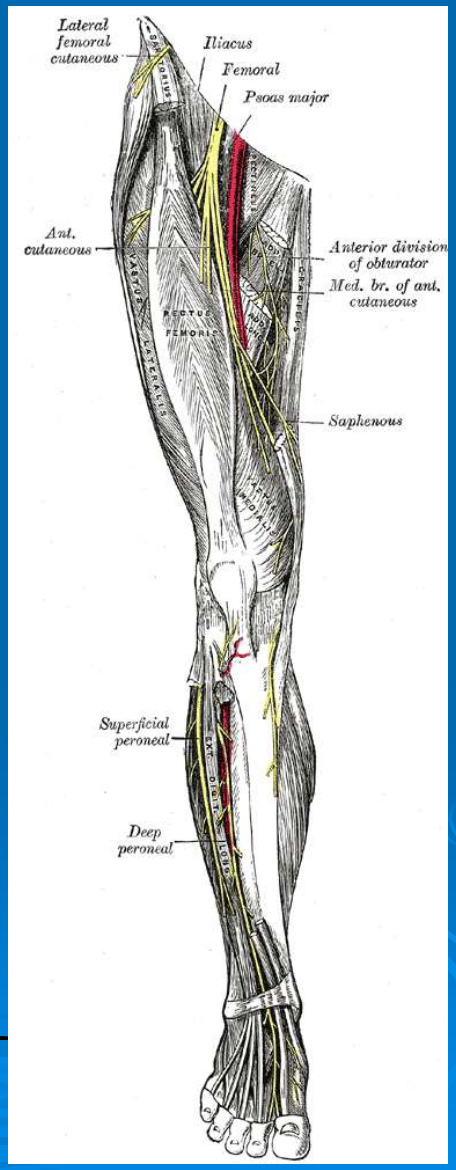
NEUROLOGICAL EXAMINATION
NEUROMENINGEAL TESTING

- This involves stretching the tissues that protect the central and peripheral nervous system
- If there is tethering of neural structures (eg from a nerve root compression, scar tissue from an injured muscle or laceration sticking to peripheral nerves), stretching of these structures usually reproduces pain
- A positive test does not necessarily mean that the pain is coming from compression of nerve roots – it merely indicates that SOME component of the pain is relating to the neuromeningeal structures

NEUROLOGICAL EXAMINATION
NEUROMENINGEAL TESTING

PRONE KNEE BEND

- Prone knee bend stresses the anterior travelling nerve fibres

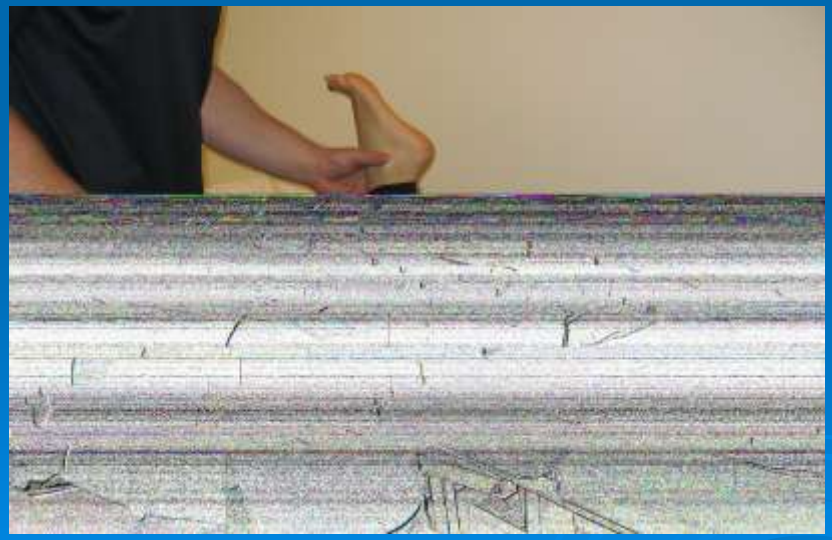


NEUROLOGICAL EXAMINATION

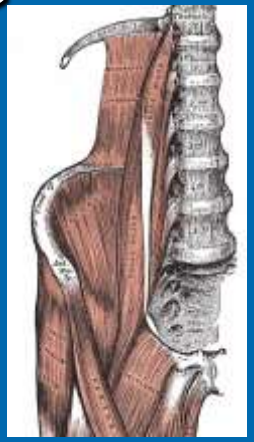
NEUROMENINGEAL TESTING

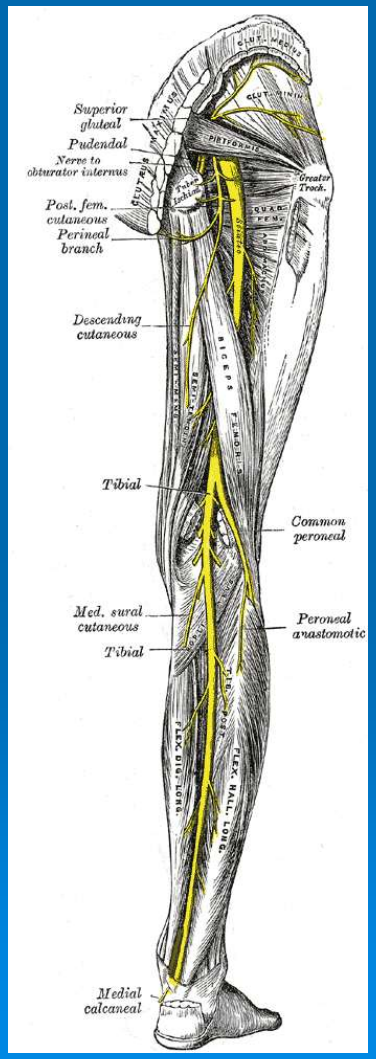
PRONE KNEE BEND

- Begin by flexing the patient's knee to 90 degrees
- Extend the patient's hip from the bed until they tell you to stop, significant pain is elicited or there is no further range possible
- A strong stretch is normal – reproduction of the patient's pain is abnormal
- Measure the angle at which symptoms are first produced



NEUROLOGICAL EXAMINATION
NEUROMENINGEAL TESTING





STRAIGHT LEG RAISE

- The straight leg raise test for LBP is PASSIVE (active straight leg raising pulls anteriorly on the lumbar spine via Psoas and will reproduce lower back pain in most patients).
- Straight leg raise stresses the posteriorly travelling nerves (which terminate in the sole of the foot)
- SLR is highly sensitive for herniated discs (0.92), but of variable specificity (0.1 to 1)
- Crossed SLR (eg SLR on L causes pain on R) shows high specificity (0.9) but low sensitivity (0.28)

* Surgical population

NEUROLOGICAL EXAMINATION

NEUROMENINGEAL TESTING

STRAIGHT LEG RAISE

- Begin by dorsiflexing the patient's foot
- Keeping the knee straight, lift the patient's leg from the bed until they tell you to stop, significant pain is elicited or there is no further range
- A strong stretch is normal – reproduction of the patient's pain is abnormal
- Measure the angle at which symptoms are first produced
- Move the ankle into plantarflexion and note any changes in pain

NEUROLOGICAL EXAMINATION

POWER

- When testing power, instruct the patient that you need them to push as hard as they can (even if it is painful) against your resistance.
- Use your body positioning to make it as easy as possible for yourself – resist as distally as possible
- For scoring, use the Oxford grading system :

Oxford Grading	Descriptor
0/5	No signs of activity
1/5	Flicker of activity, no movement
2/5	Full range of active movement, across gravity
3/5	Full range of active movement, against gravity
4/5	Moderate resistance
5/5	Maximal resistance (ie normal)

NEUROLOGICAL EXAMINATION
POWER

MYOTOMES

Movement	Segments tested
Hip flexion	L2/3
Knee extension	L3/4
Knee flexion	L5/S1
Ankle Dorsiflexion	L4/5
Great Toe Extension	L5
Ankle Plantarflexion	S1/S2

NEUROLOGICAL EXAMINATION
REFLEXES

Technique
- Patient must be relaxed
- Grip on hammer should be loose (hammer should bounce when striking tendon)
- Compare to normal side (or knowledge of “normal”)

Abnormalities
- Hypoactive (nerve root)
- Hyperactive (cord / CNS)

Grading
- No response
- + lower than normal
- ++ normal
- +++ brisk
- ++++ very brisk
- Clonus

NEUROLOGICAL EXAMINATION
REFLEXES

- KNEE JERK (L3/4)
  - Knee bent, strike patellar tendon
- ANKLE JERK (L5/S1/S2)
  - Ankle dorsiflexed +/- knee bent, strike achilles tendon

Amplify response by having patient grit teeth or for upper limb reflexes, cross legs and squeeze them together.

NEUROLOGICAL EXAMINATION
REFLEXES

Babinksi sign ("Plantars")

- Non painful stroke on lateral border of plantar surface of foot (running from heel to toes)
- Response:
  - Abnormal (↑) = Dorsiflexion of the great toe with fanning of the other toes
  - Normal (↓) = plantarflexion of the toes
  - No response

**Differentiate from being ticklish to upward going response.

- When present, suspect CNS pathology

NEUROLOGICAL EXAMINATION
RADICULAR PAIN

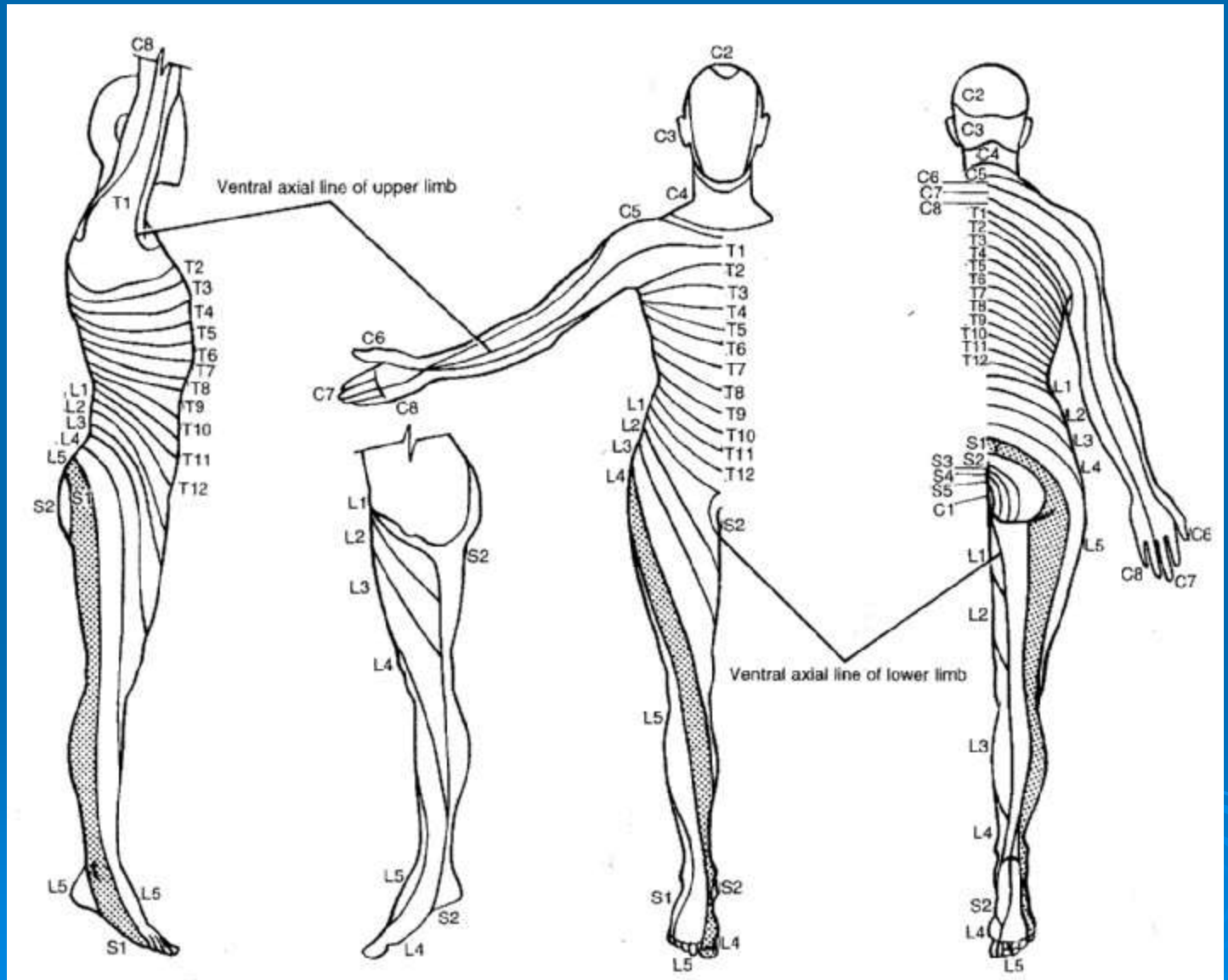
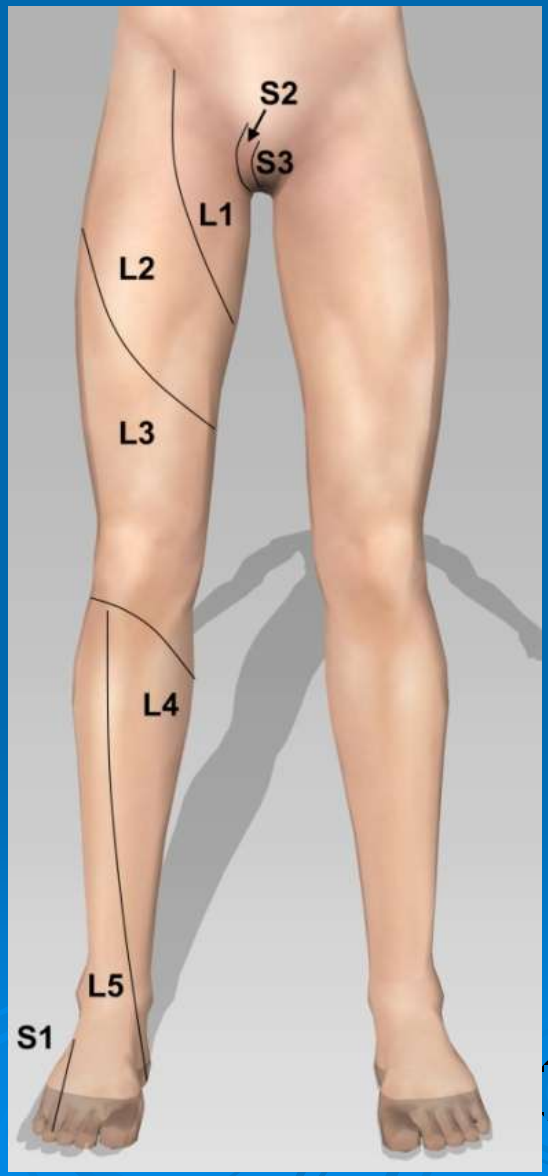


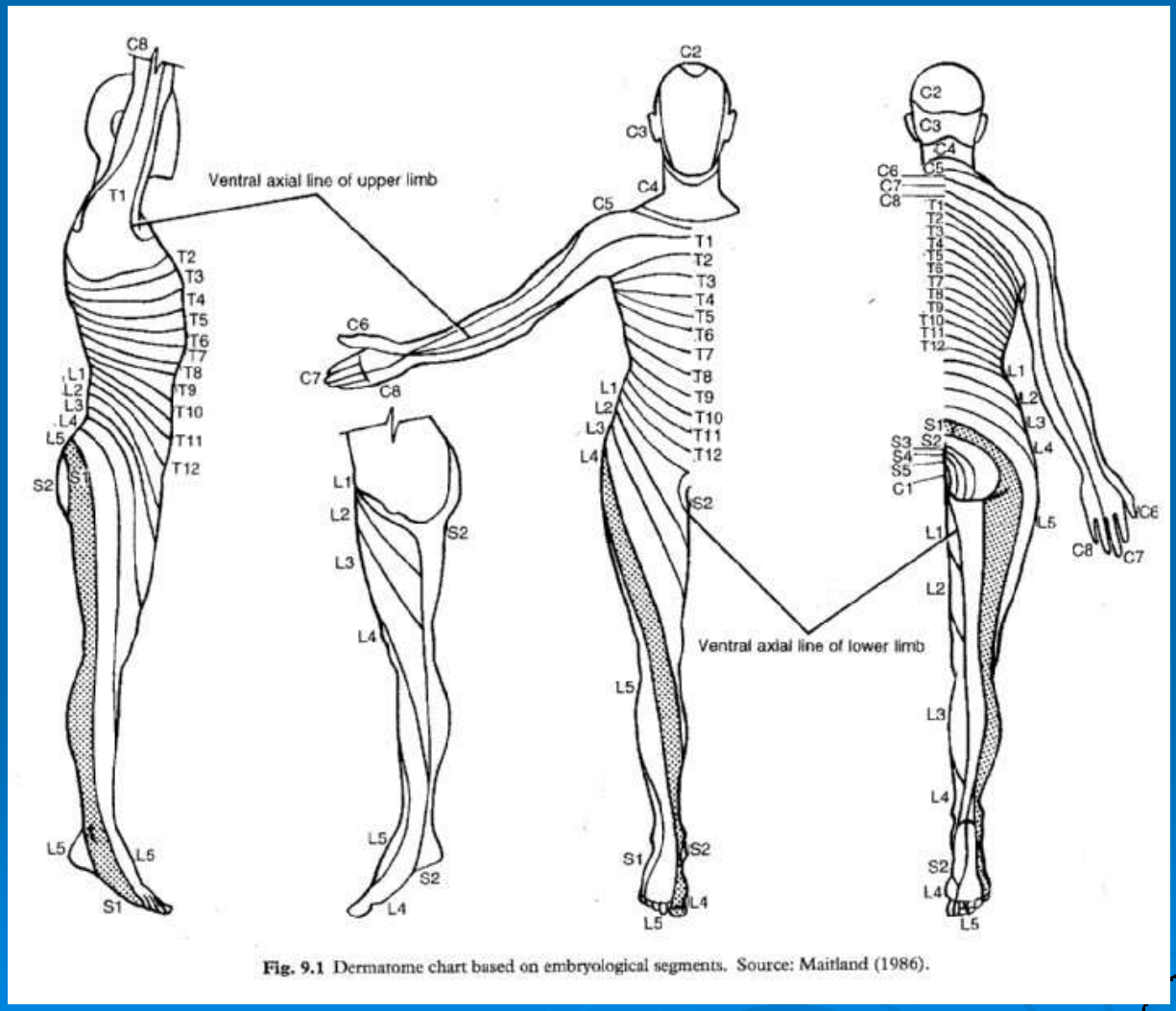
Fig. 9.1 Dermatome chart based on embryological segments. Source: Maitland (1986).

NEUROLOGICAL EXAMINATION

SENSORY CHANGES



NEUROLOGICAL EXAMINATION
DERMATOME MAPS



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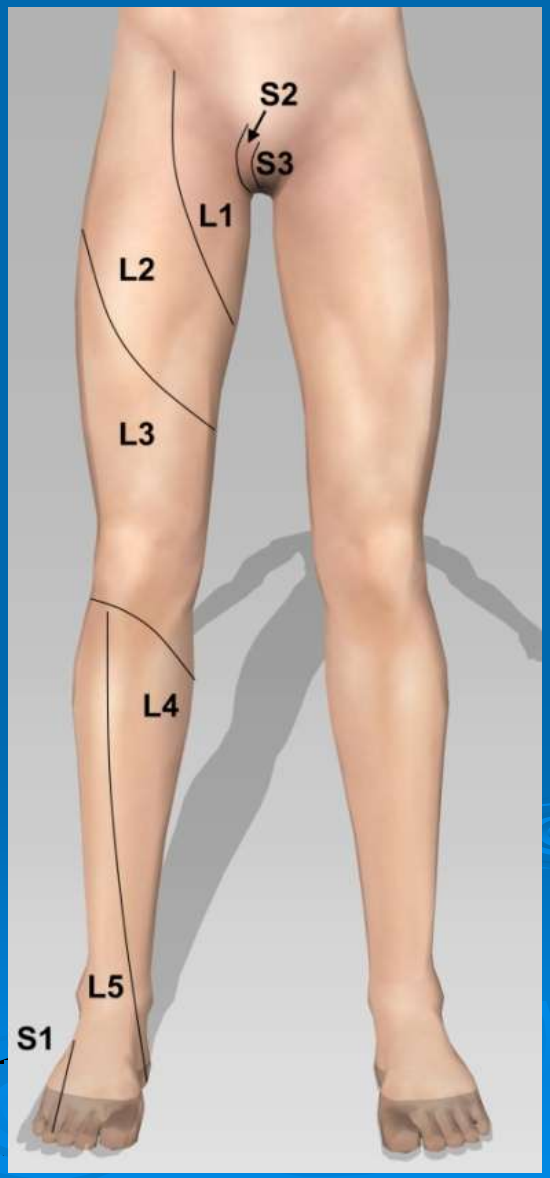


YELLOW FLAGS

WADELL'S SIGNS

(3 or more are considered diagnostic of non-organic pathology)

Table.
Waddell's Nonorganic Signs[a]

Type of Nonorganic Sign	Nonorganic Sign	Description
Tenderness		Tenderness not related to a particular skeletal or neuromuscular structure; may be either superficial or nonanatomic.
	Superficial	The skin in the lumbar region is tender to light pinch over a wide area not associated with the distribution of a posterior primary ramus.
	Nonanatomic	Deep tenderness, which is not localized to one structure, is felt over a wide area and often extends to the thoracic spine, sacrum, or pelvis.
Simulation tests		These tests give the patient the impression that a particular examination is being carried out when in fact it is not.
	Axial loading	Low back pain is reported when the examiner presses down on the top of the patient's head; neck pain is common and should not be considered indicative of a nonorganic sign.
	Rotation	Back pain is reported when the shoulders and pelvis are passively rotated in the same plane as the patient stands relaxed with the feet together; in the presence of root irritation, leg pain may be produced and should not be considered indicative of a nonorganic sign.
Distraction tests		A positive physical finding is demonstrated in the routine manner, and this finding is then checked while the patient's attention is distracted; a nonorganic component may be present if the finding disappears when the patient is distracted.
	Straight leg raising	The examiner lifts the patient's foot as when testing the plantar reflex in the sitting position; a nonorganic component may be present if the leg is lifted higher than when tested in the supine position.
Regional disturbances		Dysfunction (eg, sensory, motor) involving a widespread region of body parts in a manner that cannot be explained based on anatomy; care must be taken to distinguish from multiple nerve root involvement.
	Weakness	Demonstrated on testing by a partial cogwheel "giving way" of many muscle groups that cannot be explained on a localized neurologic basis.
	Sensory	Include diminished sensation to light touch, pinprick or other neurologic tests fitting a "stocking" rather than a dermatomal pattern.
Overreaction		May take the form of disproportionate verbalization, facial expression, muscle tension and tremor, collapsing, or sweating; judgments should be made with caution, minimizing the examiner's own emotional reaction.

[a] Adapted from Waddell G, McCulloch JA, Kummel E, Venner RM. Nonorganic physical signs in low-back pain. *Spine*. 1980;5:117–125.

RED FLAGS

LOW BACK PAIN

Red Flags

INFECTION

- Fever / other signs of infection
- Underlying disease process, immunosuppression, penetrating wound
- History of IV drug use

FRACTURE

- History of Trauma (or minor trauma if >50 and with history of OP +/- prolonged steroid use)

LOW BACK PAIN

Red Flags

TUMOUR

- Past History of malignancy
- Age >50
- Failure to improve with Rx
- Unexplained LOW
- Pain at multiple sites +/- resting pain

AAA

- Absence of aggravating factors

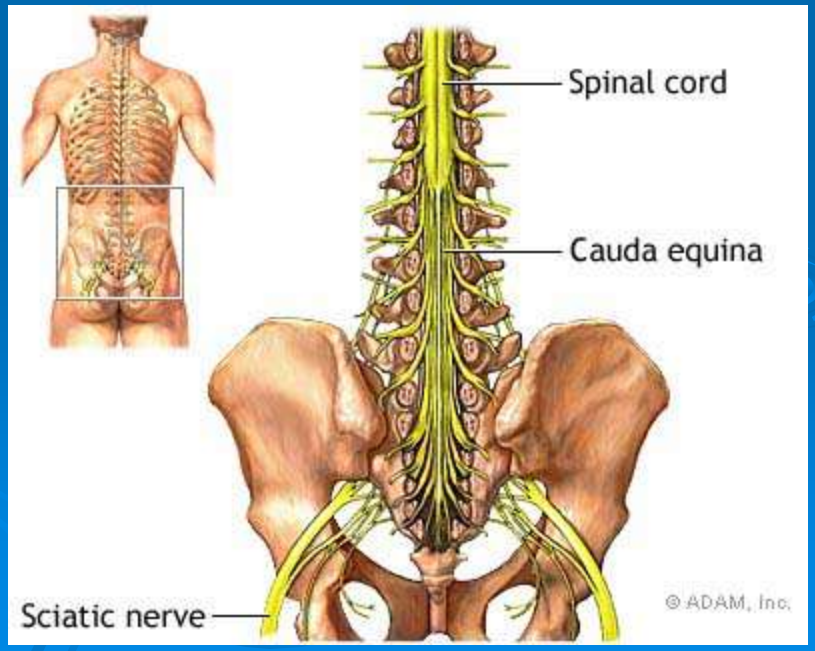
CAUDA EQUINA SYNDROME

LOW BACK PAIN

CAUDA EQUINA SYNDROME

- The spinal cord terminates at the level of T12 / L1 and the cauda equina continues distally

- The cauda equina ("horse's tail") is the collection of lumbar and sacral nerve roots (lower motor neurones)



LOW BACK PAIN
CAUDA EQUINA SYNDROME

•Compression of the cauda equina can lead to Cauda Equina Syndrome, which is a medical emergency

•Features of Cauda Equina Syndrome include some or all of the following:

- Urinary retention, faecal incontinence, lax anal sphincter, saddle area numbness
- Widespread neurological symptoms and signs in the lower limb, including gait abnormality

LOW BACK PAIN

CAUDA EQUINA SYNDROME

- Cauda equina syndrome results from a herniated lumbar disk in 1-15% of cases.

- Seventy percent of cases of herniated disks leading to cauda equina syndrome occur in people with a history of chronic low back pain and 30% develop cauda equina syndrome as the first symptom of lumbar disc herniation.

LOW BACK PAIN
CAUDA EQUINA SYNDROME

- Males in their 30s and 40s are most prone to cauda equina syndrome caused by disc herniation.

- Most cases of cauda equina syndrome caused by disc herniation involve large particles of disk material that have completely separated from the normal disk and compress the nerves (extruded disk herniations).

- In most cases, the disk material takes up at least one-third of the canal diameter.

LOW BACK PAIN
CAUDA EQUINA SYNDROME

- Other causes include:
  - Spinal Canal stenosis
  - Spondylolisthesis (severe)
  - Tumour
  - Infection
  - Severe trauma / swelling
  - Infectious disease
  - Failed surgery

IMAGING

* Source Imaging Guidelines – 4th edition (ANZCR)

LOW BACK PAIN

"More and more patients are going to the Internet for medical advice. To keep my practice going, I changed my name to Dr. Google."

LOW BACK PAIN

IMAGING

- A large volume of people expect imaging following injury, believing that finding the cause of the pain will allow more accurate and treatment

- Many people without symptoms show abnormalities on X-rays and MRI

LOW BACK PAIN

IMAGING

- The chance of finding coincidental disc prolapse increases with age. It is important to correlate MRI findings with age and clinical signs

- In those who have NEVER experienced LBP:
  - 65% over 50 years of age will show abnormalities on plain x-rays, 33% will show evidence of disc abnormality on MRI
  - 20% under 60 showing evidence of a herniated disk.

LOW BACK PAIN
IMAGING

LBP <u>WITHOUT</u> RADICULAR PAIN

- Most patients with LBP generally do not require imaging

- Patients with LBP who MAY require imaging include
  - significant trauma
  - history of malignancy
  - osteoporosis or long term corticosteroid use
  - > 70 years
  - unexplained LOW
  - unexplained fever
  - IV drug use
  - immunosuppression

LOW BACK PAIN

IMAGING

LBP <u>WITH</u> RADICULOPATHIC PAIN

- Most patients with radicular pain generally do not require imaging UNLESS:
  - No improvement after 6-12 weeks
  - If surgery is being considered
  - Presence of motor signs or bladder dysfunction
  - Recurrent or persistent back pain and radiculopathy post surgery

**Bladder dysfunction, usually retention (post void residual volume >150mls), is usually an indication for urgent imaging

LOW BACK PAIN
IMAGING OPTIONS

PLAIN FILMS

- The option of choice for patients > 70, with a history of osteoporosis or prolonged corticosteroid treatment, or recent significant trauma.

- If normal, there is usually no need for further imaging

LOW BACK PAIN
IMAGING OPTIONS

MAGNETIC RESONANCE IMAGING

MRI is the investigation of choice for:

- Patients with LBP and radiculopathy requiring radiological investigation
- Suspected spinal infection
- Suspected metastatic disease with normal RNI
- Post operative lumbar spine

NEUROLOGICAL EXAMINATION

IMAGING OPTIONS

COMPUTERISED TOMOGRAPHY

- Plain CT is an alternative to MRI and is useful for patients with suspected spinal canal stenosis, spinal fractures requiring further evaluation or bone abnormalities on plain film

- CT myelography is the investigation of choice for patients who should have MRI but contraindicated (eg pacemaker)

NEUROLOGICAL EXAMINATION

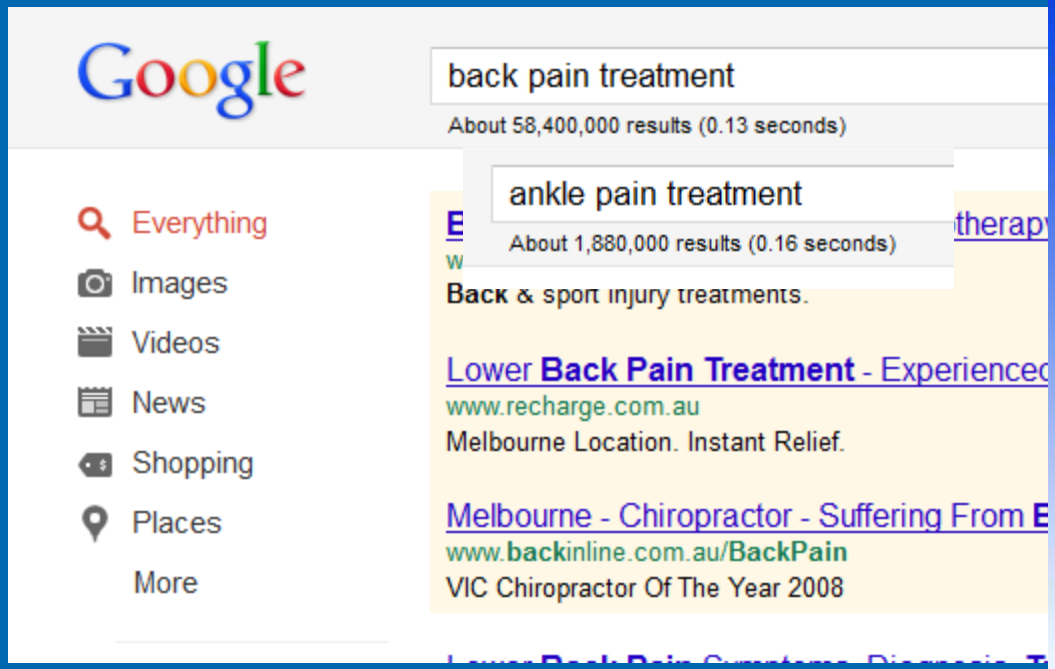
IMAGING OPTIONS

BONE SCAN

- Most useful in screening patients with known malignancy for metastases.

TREATMENT OF NON-SPECIFIC LOW BACK PAIN

TREATMENT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BACK PAIN
TENSION HEADACHE

TREATMENT

"A Doctor's Confession to Brigham City…"

And why, despite all, I still do what I do…

Dear Friend

Confessions are tough. Real tough. But, sometimes a
and I want to give credit where credit is due. Before I tal
say a few other things first.

Let me start by explaining the photo in this letter. You k

"A Doctor's Confession to the Public…

And why, despite all, I still do what I do…

Dear friend,

Confessions are tough. Real tough. But, sometimes a confession can set the record straight, and I want to give credit where credit is due. Before I talk about my confession, though, let me say a few other things first.

A DOCTOR'S CONFESSION TO APACHE COUNTY

And why, despite all, I still do what I do

Dear Friend,

Confessions are tough. Real tough. But, sometimes a confession can set th

Years ago something hap

Back then I was going t
fame). I was hit in the h
it felt like it was on fir
strength in my right arr

A Doctor's Confession to the Town of Bedford

And why, despite all, I still do what I do …

Dear Friend,

I want to give credit where credit is due. So, perhaps a confession can help clear the air so there's no misunderstanding. Before I talk about my confession though, let me say a few other things first.

As things go, other people are coming to us with similar things to help them with their health. Also, they come to us with their headaches, migraines, chronic pain, neck pain, shoulder/arm pain, whiplash from car accidents, backaches, ear infections, asthma, allergies, numbness in limbs, athletic injuries, just to name a few.

important if you are self-employed. And, a
entire week of care in my office may cost wh
you could pay for <u>one visit</u> elsewhere.

You Benefit from an Amazing Offer — Loc
it shouldn't cost you an arm and a leg to corre
your health. You are going to write a check
someone for your health care expenses, y

TREATMENT

(NO FRACTURE, NO SIGNIFICANT NEUROLOGICAL SIGNS REQUIRING ATTENTION)

WHAT THE RESEARCH SAYS

A panel of experts recently reviewed the scientific studies on the effectiveness of treatments for acute low back pain and found that not all treatments have been studied in detail.

The findings of this review are published in the report *Evidence-Based Management of Acute Musculoskeletal Pain* available at www.nhmrc.gov.au. The results are summarised below.

Effective

Measures that are effective for relieving acute low back pain are: staying active (relieves pain better than resting in bed), having written information (it is helpful to discuss written information with your health practitioner) and heat wrap therapy (a treatment not routinely available in Australia).

Mixed results*

There are mixed results from scientific studies on the use of muscle relaxants, anti-inflammatory drugs (NSAIDs) and spinal manipulation. Some studies show these measures relieve acute low back pain and some do not.

Inconclusive*

Studies on acupuncture, back exercises, back schools, bed rest, cognitive behavioural therapy, injection therapy and topical treatments for acute low back pain have not tested these treatments against placebo.

No studies done*

There are no studies that have looked at: pain-relieving medication (analgesics), electromyographic biofeedback, lumbar supports, massage, multi-disciplinary rehabilitation in the workplace, traction and TENS for the treatment of acute low back pain.

*** It is important to note that these findings do not mean that these measures will not help you; they indicate that more research is needed.**

ANALGESIA


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Pharmacy
GLASBERGEN
"Each capsule contains your medication,
plus a treatment for each of its side effects."

ANALGESIA

-Usually, the primary reason a patient with LBP seeks assistance is for pain relief

-To treat a patient with acute LBP and expect to have them pain-free on discharge is as unrealistic as for a patient with an acute ankle sprain

- We need to reinforce that relief of pain should not be exclusively limited to pharmaceuticals = posture, positioning, relative rest and non-pharmaceutical methods of pain relief should also be utilised

- All drugs have unwanted side effects and ultimately the body has to heal itself, so general health behaviours are also important

SHORT TERM GAIN VERSUS POTENTIAL FOR LONGER TERM PROBLEMS

ANALGESIA

Levels of evidence

- Level 1 Evidence obtained from systematic review of relevant randomised controlled trials
- Level 2 Evidence obtained from one or more well-designed, randomised controlled trials
- Level 3 Evidence obtained from well-designed, non-randomised controlled trials; or from well designed cohort or case control studies
- Level 4 Opinions of respected authorities based on clinical experience, descriptive studies, reports of expert committees

Medication Provide clear guidance to patient and use regular rather than *prn* dosing. Adjust dosing frequency to observed effect. Use step-wise approach with maximum doses for 24 hours before considering a move to the next step. If unable to mobilise or tolerate medication consider combination therapy.	First Line	Paracetamol 500-1000mg every four hours (max 4g parcetamol/day)	Level 4
	Second Line	Non-steroidal anti-inflammatory agent Short course, less than 2 weeks. Avoid NSAIDs, including COX-2 inhibitors, in patients who are volume depleted, elderly or have renal dysfunction. Avoid conventional NSAIDs in patients with a history of peptic ulcer disease.	Level 2
	Third Line	Paracetamol 1000mg and codeine 30-60mg every six - eight hours (max 4g paracetamol/day) Short course, less than 2 weeks. Patient should be told of the potential for side effects (especially constipation) and that codeine is being used short term to assist early mobilisation. **OR** Aspirin 600mg and codeine 30-60mg every four to six hours **OR** Tramadol 50-100mg (standard release capsules) every four to six hours or 100-200mg SR (sustained release tablets) twice daily Beware of potential for interactions, particularly with antidepressants. SR preparation is potentially useful but evidence for long term use is limited.	Level 2 Level 2 Level 2
There is no place for injectable opioids. Use oral route and long-acting drugs wherever possible. Use immediate release preparations to assess responsiveness to opioids.	Fourth Line	Oral oxycodone (immediate release) 5-10mg every six hours. If satisfactory response: Oxycodone SR 12 hourly (titrate dose) **OR** Morphine SR every 12 or 24 hours (depending on formulation - titrate dose) Short course (usually less than 1 week). If ongoing, reassess after 2-3 weeks. If response unsatisfactory, taper dose and discontinue. Referral may be necessary. Use SR preparations in preference once effective daily dose is determined. Explain about potential physical dependence and other side effects (especially constipation) and that it is being used short term to assist early mobilisation.	Level 3

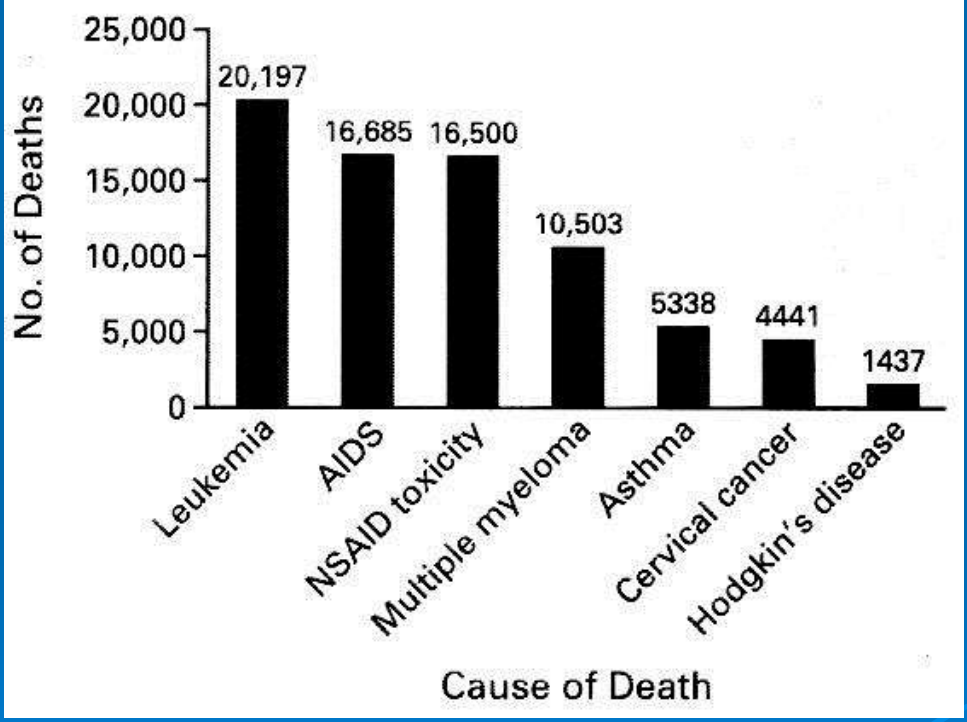
PRESCRIBING GUIDELINES FOR PRIMARY CARE CLINICIANS
NSW THERAPEUTIC ASSESSMENT GROUP (2003)

SIDE EFFECTS

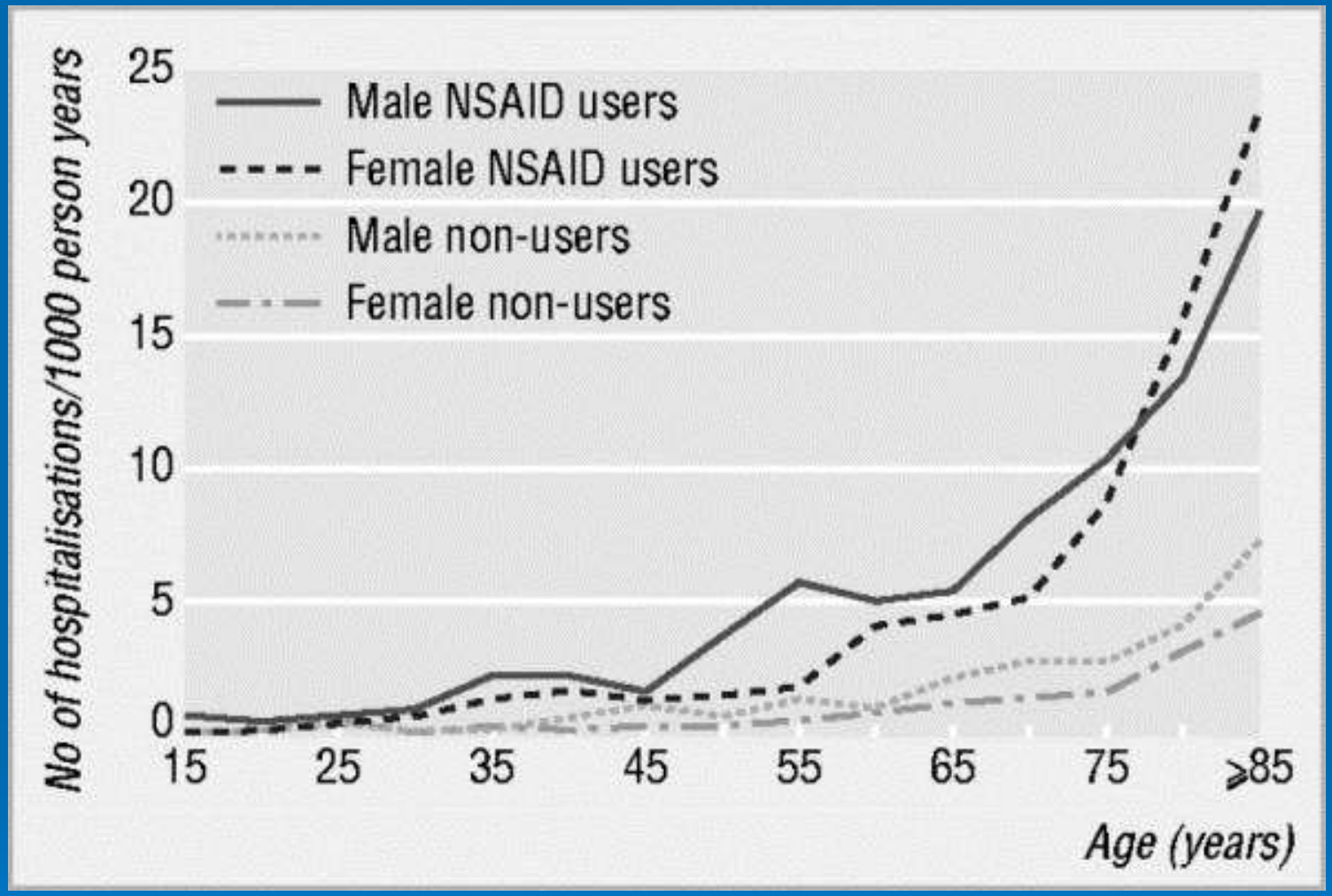
- Relative Risk of GI complications from NSAIDS
  - Mean ranking in meta-analysis
    - Ibuprofen 1.0
    - Diclofenac 2.3
    - Naproxen (Naprosyn®) 7.0
    - Indomethacin 8.0
    - Piroxicam (Mobilis®) 9.0

    BMJ 1996;312:1563-6
  - Mode of delivery does not change potential problems (action is systemic)

NSAID toxicity - not insignificant



U.S. Mortality Data for Seven Selected Disorders in 1997. A total of 16,500 patients with rheumatoid arthritis or osteoarthritis died from the gastrointestinal toxic effects of NSAIDs. Data are from the National Center for Health Statistics and the Arthritis, Rheumatism, and Aging Medical Information System



Hospitalisations due to complications associated with NSAID use are a problem in elderly patients

LOW BACK PAIN

NSAIDs

- Renal toxicity
- Interaction with other drugs (eg Warfarin, Corticosteroids, Diuretics, Antihypertensives, ACE inhibitors, Digoxin, Lithium, Aminoglycosides, Phenytoin, High dose methotrexate)
- NSAIDs have been shown to delay fracture, wound and soft tissue healing (Paracetamol shown to have similar effect as well, thought to work on similar COX pathways)

LOW BACK PAIN
"MUSCLE RELAXANTS"

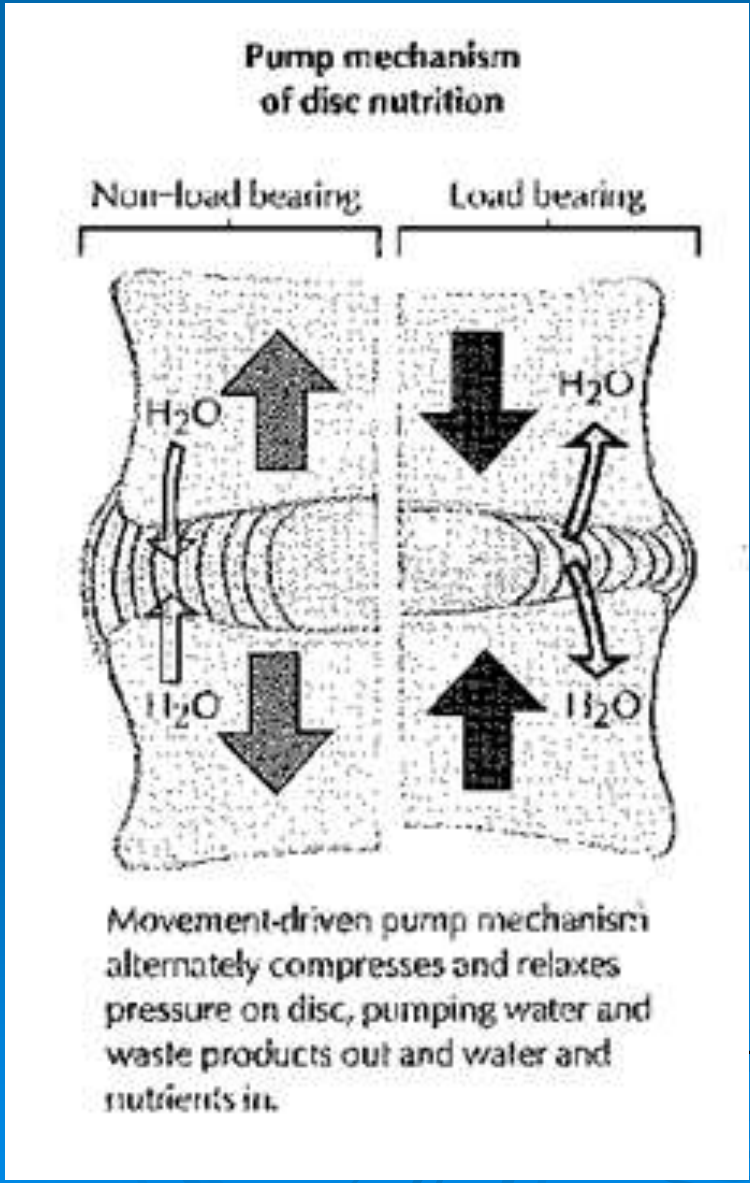
- BZDs often used for "muscle spasm" in LBP patients
- Lumbar muscle spasm not a defined pathology, usually a reaction to injury (body's way of splinting self to avoid bending / twisting).
- Side effects = sedation (which sometimes is a good thing in anxious patients), decreased coordination, ataxia, memory impairment, amnesia, confusion, tolerance, dependence, addiction and withdrawal
- Long half lives (5-200 hours) – consider this especially in elderly
- Some evidence to suggest that is helpful compared to placebo or paracetamol in patients with LBP, but adverse events were signifcantly more prevalent.

LOW BACK PAIN
OPIATES

- Drugs of dependence
- Have some sedatory effect (respiratory depression in high doses)
- Constipation
- Postural hypotension
- Nausea / vomiting
- Miscellaneous CNS effects: euphoria, hallucinations, dysphoria

“There still remains little evidence in the medical literature to address the concerns of physicians and patients regarding the effect of opioids on pain intensity, improved function and risk of drug abuse. The trials that do exist suggest that a weak opioid reduces pain but has minimal effect on function” – Cochrane Review 2007

LOW BACK PAIN EXERCISE



Movement-driven pump mechanism alternately compresses and relaxes pressure on disc, pumping water and waste products out and water and nutrients in.

LOW BACK PAIN
EXERCISE

EXERCISE vs BED REST

- Acute LBP without radicular pain = small benefits in pain relief and functional improvement from advice to stay active compared to advice to rest in bed

- LBP with radicular pain = little or no difference

EXERCISE

- Little or no difference comparing advice to stay active, exercises or physiotherapy

LOW BACK PAIN

EXERCISE ON PREVENTION OF RECURRENCE

- Evidence that exercises were more effective than no intervention in reducing rate of recurrence at one year, and 18-24 months
- Some low quality evidence that days on sick leave reduced at 18-24 months

LOW BACK PAIN
OTHER

TRACTION

- Strong evidence of no difference between traction and placebo, sham or no treatment
- Moderate evidence that traction is no more effective than other treatments
- Limited evidence of no difference in outcomes between standard PT +/- traction

MANIPULATION

- No evidence that better than any other treatment

LOW BACK PAIN

HEALTH BEHAVIOURS

DIET, EXERCISE, OBESITY, LACK OF SLEEP, REPETITIVE OR DANGEROUS ACTIVITIES

- Need to consider general health

LOW BACK PAIN
HEALTH BEHAVIOURS

SMOKING

- Human smokers approx 30% more likely to develop acute LBP and if have LBP, approx 30% more likely to progress to chronic LBP

- Rat studies show that even in passive smoking (2/52 of 5 mins of smoke exposure every hour during daylight hours), the nucleus pulposus exhibited fibrosis and hyalinization with disorganisation, cracking and breaking beginning to appear.
  - After 7 weeks, histological changes were observed in 70% of nuclei pulposi and 75% of annuli fibrosi
  - No changes at all were observed in the control rats

LOW BACK PAIN
EDUCATION

- Patients receiving an in-person education session (2 hrs !!) in addition to their usual care had better outcomes.
- Shorter education sessions, or providing written information without an explanation did not seem to be as effective.
- Patients with chronic LBP were less likely to benefit than acute LBP

LOW BACK PAIN

TREATMENT

GENERAL PRINCIPLES

- Avoid activities which stress injured structures and aggravating factors (bending, twisting, sitting, driving / car travel)

- Keep straight for at least the first few days (lie, walk) but avoid prolonged bed rest

- Keep as active as possible (within limits) – walk frequently (may need to use crutches to assist in mobilisation) and gradually return to normal activity as able.

LOW BACK PAIN

TREATMENT

GENERAL PRINCIPLES

- RICE, avoid HARM in the acute stage (ice vs heat later; little in literature about ice for LBP, some evidence for heat wraps which provides short term relief)

- Regular analgesia (pharmaceutical and non-pharmaceutical) until pain settles – don't expect to be pain free with medications (NB NSAIDs including paracetamol slow / delay healing, steroids are catabolic)

LOW BACK PAIN TREATMENT

LBP SPECIFICS

- Reassure patient
  - Most LBP resolves quickly and without the need for surgery
  - Provide education – evidence suggests that longer duration face to face education is significantly more effective than simply providing a pamphlet or brief verbal education
  - Address Yellow Flags
- Avoid smoking – causes disc degeneration, increases likelihood of any injury (bony, skin, soft tissue) healing slowly or not at all

LOW BACK PAIN
TREATMENT

LBP SPECIFICS

- Physiotherapy if persisting
  - Large role in education
  - Research shows that deep abdominals switch off and don't function well without specific intervention to restore strength and timing
  - Encouragement / support to be active with specific Lx as well as general exercises
  - Can help to loosen stiff joints

- Encourage regular exercise

TREATMENT

(NO FRACTURE, NO SIGNIFICANT NEUROLOGICAL SIGNS REQUIRING ATTENTION)

Lower back pain

What is back pain?

Irritation or damage to any area of the back muscles, structures or spine can cause back pain. It commonly occurs in the lower back.

The spine consists of many bones called *vertebrae*, which are joined together. Each vertebrae has a bony joint called a *facet joint* and between each pair of vertebrae lies a disc, which acts as a cushion and provides shock absorption.

Muscles and ligaments assist to provide stability to the spine.

What causes back pain?

Back pain is usually caused by an injury to the back such as overstretching during lifting, bending or twisting. This may result in damage to muscles, ligaments or the discs.

Back pain is common and affects most people at some time in their life. Factors that can contribute to back pain include:

- bad work practices and lifting techniques
- poor posture
- being overweight
- lack of exercise
- pregnancy
- stress
- smoking.

Treatment

Treatment depends on the cause. Your doctor or health care professional will have examined you to check for any nerve damage and rule out more serious problems.

X-rays are helpful only in certain cases as they show only bones, and not the soft tissues such as ligaments, discs and nerves. If significant nerve damage is suspected, tests such as a CT scan or MRI might be ordered. Patients with severe injuries may need to see an *orthopaedic* surgeon or *neurosurgeon* for further treatment. This may include injections or, in extreme cases, surgery (an operation).

Most back pain tends to improve within a few days to a few weeks, and a therapist such as a physiotherapist, chiropractor or osteopath can assist with exercises, advice and treatment. Bulging discs and pinched nerves may take longer to heal. Few people require surgery.

Home care

In the first two to three days you should aim to minimise pain and assist healing.

- Wrap ice cubes in a damp tea towel, use frozen peas or a sports ice pack (never apply ice straight onto the skin) and apply to the back for 20 minutes, every one to two hours when awake.
- Avoid 'HARM" – Heat, Alcohol, Re-injury and Massage for the first few days as this will increase inflammation and swelling (even though it may feel good at the time).
- Avoid activities you do not really need to do.
- Sit as little as possible until the pain settles. Avoid extended car travel unless absolutely necessary.
- When resting, lie on your back, stomach, or on your side, supported by pillows.
- Keep moving. Walk as much as you feel comfortable doing. Initially this may not be far and may require the use of crutches or a walking frame. Walk regularly and gradually increase the distances.
- Take painkillers when necessary. Do not expect medications to get rid of the pain completely.

Most back pain improves with time. Do not let pain rule your life. Find otherways to do things that are causing you pain.

How can I prevent back pain?

- Stay active, control your weight, and keep a good posture at all times.
- Do not smoke.
- Do back exercises to keep your back flexible and strong.
- Speak to a physiotherapist.
- When lifting, use your legs and not your back. Hold objects as close to your body as possible and use both arms.
- If working at a desk, make sure it is set up properly so you have a good posture – do not twist, do not look up or down at the computer screen.

CASE #1

- 29 yr old female with acute LBP without radicular pain, mother has Hx of LBP which she had lumbar surgery for.
- Pt apprehensive about movement, activity. Pt's mother not wanting to discuss alternative methods of pain relief, mobilisation or conservative management; DEMANDING MRI

CASE #2

- 40 yr old male with acute exacerbation of 5/12 Hx chronic LBP with radicular pain from work-related injury. CT essentially normal. MRI mild disc bulges at 3 levels
- Pt on Panadol Osteo, Tramadol, Nurofen, Naproxen, Aspirin, Lyrica (as well as Duramine).
- No regular regime – taking tablets ad hoc
- Pt obese, smoker, no physical activity
- Presents to ED post collapse due to pain in R leg in corridor on way to visit wife in maternity
- Pt vague++

CASE #3

- 65 yr old male with acute LBP without leg pain after lifting a bag of potting mix
- Non smoker, fit (runs, rides and goes to gym) and healthy
- Pt on no regular medications
- Pt travelling overseas in a few weeks

USEFUL REFERENCES

New Zealand Guidelines Group Acute LBP Guide
http://www.nzgg.org.nz/guidelines/dsp_guideline_popup.cfm?guidelineCatID=9&guidelineID=72

Prescribing Guidelines for Primary Care Clinicians
http://www.ciap.health.nsw.gov.au/nswtag/publications/guidelines/LowBackPain41202.pdf

NHMRC Acute Pain Management Guidelines
http://www.nhmrc.gov.au/_files_nhmrc/file/publications/synopses/cp95.pdf

NHMRC Lumbar Imaging in Acute Non-Specific Low Back Pain
http://www.nhmrc.gov.au/_files_nhmrc/file/nics/material_resources/lumbar_imaging_acute_non_specific_low_back_pain.pdf

NHMRC LBP Handout
http://www.nhmrc.gov.au/_files_nhmrc/file/publications/synopses/cp94a.pdf

ED Factsheet on LBP
http://www.health.vic.gov.au/edfactsheets/lower-back-pain.pdf

Matt's Training Guide
http://www.nothinbutapeanut.com