



Clinical Weekly - 139th Edition

#JOURNALTUESDAY - by Abi Peck

Rheumatoid Arthritis [Download here](#)

1. What is rheumatoid arthritis?

An autoimmune polyarticular arthritis characterised by progressive joint destruction and deformity, which usually involves the peripheral joints.

2. What are the symptoms of rheumatoid arthritis?

-Joint pain, swelling and stiffness commonly in proximal interphalangeal, metacarpophalangeal, and metatarsophalangeal joints.

-Morning stiffness over 30 minutes

-Systemic symptoms: weight loss, feeling generally unwell and fatigue

3. What does this paper suggest is the timeframe from the onset of symptoms to delay disease progression?

3 months

4. What blood tests should be carried out for rheumatoid arthritis according to this paper?

-Rheumatoid factor

-ESR

-C reactive protein

-Anti-CCP antibodies

5. What are the NICE guidelines for rheumatoid arthritis referral?

-Refer on to rheumatology for suspected persistent synovitis of undetermined cause, even if the blood tests are negative.

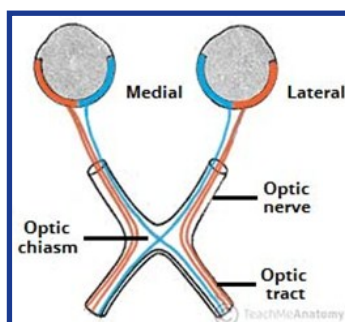
-Refer urgently if: small joints of hands/feet are affected, more than one joint is affected, delay of 3 months or longer between onset of symptoms and seeking medical advice.

#CLINICALSKILLSFRIDAY - by Josh Featherstone

Cranial nerve 2 – The optic nerve

General anatomy and visual processing

Known as 'binocular vision' your eyes have their own visual field and due to their location being very close to one another the visual fields overlap. Therefore light from the right side of your visual field will be focused on the left of your retina and vice versa. Due to each eye looking upon the environment at slightly different angles to the other the end result of what you'll see will depend on the visual cortex's perception of both images.



The optic nerve is responsible for transporting impulses that are generated from light that reaches both the rods and cones at the retina within the eye. It is there that an action potential will transmit an impulse along the optic nerve which partially splits to the opposing side at the optic chiasm.

The impulse synapses further up the chain upon the lateral geniculate nucleus (a thalamic relay point for an electrical stimulus from the optic nerve to reach the visual cortex) before ending at the visual cortex where the electrical stimulus will be processed and an image will occur.





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#CLINICALSKILLSFRIDAY - by Josh Featherstone

The optic nerve is also partially responsible for two reflexes:

- Accommodation reflex
- Light reflex also known as the pupillary reflex

The Accommodation reflex is responsible for visual acuity of near and far objects by altering lens shape, pupil size and vergence (the ability for both eyes to engage together on areas in your environment). Whereas, the light reflex is the control of pupil size which will allow certain amount of light to reach the optic nerve.

Disturbances to vision that can lead to partial or full losses in sight.

- Malignancies
- Malignant Gliomas (cancer of the glial cells in brain tissue).
- Compression neuropathies
- Optic nerve compression secondary to tumour growth in the pituitary gland.
- Trauma
- Acquired or traumatic brain injuries
- Contusion to the occipital lobe
- Cerebral infarcts
- Homonymous hemianopia – considering the 'binocular vision' as mentioned above and partial splitting of the optic nerve at the optic chiasm; an infarct or trauma to an area of the brain responsible for vision will cause that half of vision to be lost at the eye.

Visual assessments for therapists

If visual disturbances are reported following trauma than an appropriate onward referral is indicated however there are two visual assessments than can be done in clinic.

Visual acuity test

Ask the patient to describe images or read signs 6m in front of them. Both eyes should be tested by covering one at a time.

Confrontation test

Sitting in front of your patient, ask them cover their left eye and focus upon your nose. You, the therapist will cover your right eye using your visual field as the control.
Present 1, 2 or 3 fingers to your patient in all four diagonals of their visual field whilst the patient maintains gaze upon your nose. Any failure in repeated testing therefore requires further testing.

Similarly this can be done by wiggling your fingers at the corners of a patient's visual field whilst they maintain their gaze upon your nose. Again, failure to respond correctly warrants further investigations.

Visual reflexes

Place your palm between both eyes and shine a light into one eye at a time. You are looking for pupillary constriction to be even bilaterally.

References:

Butler DS (2000) 'The sensitive nervous system' Australia: Noigroup publications
Chan JW (2014) Optic nerve disorders: Diagnosis and management Springer: London
Jeremic B, Pitz S (2008) 'Primary Optic Nerve Sheath Meningioma' Springer: London
Lowrie P, Goodger B (2009) 'A2 Human Biology' Cheltenham: Nelson Thornes Ltd





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#NEWSOFTHEWEEK - by Liz Wright

1. Spinal manipulative therapy (SMT): a summary of a very messy topic

SMT is an extremely controversial topic, partly because of its connection to subluxation theory, and partly in its own right. This article covers topics thoroughly; such as the pros and cons of SMT as it relates to the treatment of neck pain, back pain, headaches, and muscle pain. There has been little high quality scientific research to determine whether or not SMT really “works,” but what little does exist is discouraging indeed. Major reviews of that literature published in recent years came to “underwhelming” conclusions. Thus, SMT fails to impress— it might work, but it can’t possibly work particularly well. Surely an effective therapy should have no problem passing fair tests with flying colours? Though some clinicians believe that some forms of SMT can be helpful to some of their patients, some of the time and have no doubt that there is something of therapeutic interest going on in SMT. The debate continues...

<https://www.painscience.com/articles/spinal-manipulation.php>

2. Morphine for neuropathic pain in adults: A Cochrane Review

A Cochrane review concludes there is very low quality evidence that morphine taken by mouth has any important effect on pain in people with moderate or severe neuropathic pain. In February 2017, a search for clinical trials in which morphine was used to treat neuropathic pain in adults was performed. 5 studies (lasting from 4-7 weeks) satisfied the inclusion criteria, randomising 236 participants to treatment with morphine, placebo, or other drugs. Few studies reported beneficial outcomes that would be regarded as clinically relevant. Side effects (drowsiness, dizziness, constipation, feeling sick, dry mouth, and decreased appetite) were poorly reported, but were more common with morphine than with placebo. The very low quality evidence and the lack of any important benefit mean that we need new, longer-lasting, large trials before we will know if morphine is useful for the treatment of neuropathic pain.

http://www.cochrane.org/CD011669/SYMPT_morphine-neuropathic-pain-adults

3. New blog: are the days of assessing movement over?

- Interesting piece addressing the above question. Key points include:
- Specific movement ideals are generally unsupported, especially linking them to pain
- The role of movement screening is highly debatable
- Movement is variable, and this should be embraced! This means it is tough to assume causative link with pain
- Low load assessment tells little about high load behaviour
- A movement does not simple equal the force applied to the tissue
- Look at the individual
- Be prepared that altering movement may have no effect or a very positive one – a different perspective needed?

<https://cor-kinetic.com/days-assessing-movement/>

Ben Cormack
@CorKinetic

Following

Want to make a great rehab program that is likely to get DONE?

Keys to a great rehab program

- Minimal/easily available equipment
- As few exercises as possible
- Fits in with work and family life
- Instills confidence and sense of self efficacy
- Takes into account preferences
- Utilises best available evidence
- Can easily be regressed or progressed
- Is meaningful and relevant
- Can be performed in an easy location

#TWEETOFTHWEEK

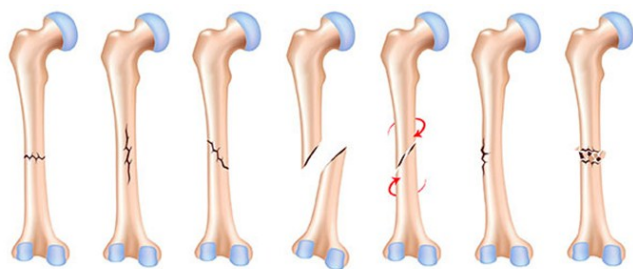
Incredibly relevant points which should be at the forefront of our minds when creating a programme



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#FRACTUREOFTHEWEEK BY SAM ACKERLEY

Types of fractures



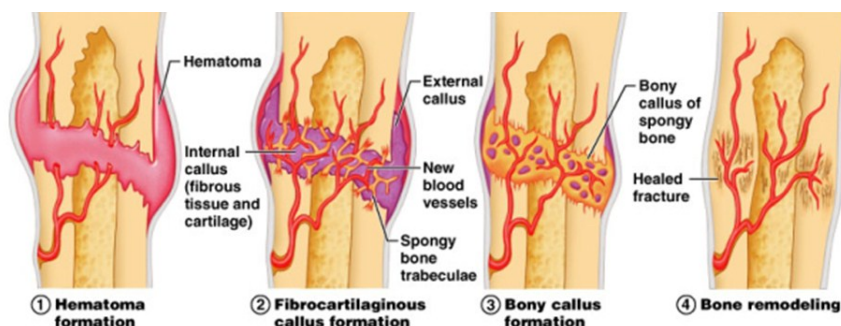
Transverse Linear Oblique, nondisplaced Oblique, displaced Spiral Greenstick Comminuted

http://www.newhealthadvisor.com/images/1HT0513/fracture_types.jpg

Inflammation Stage Day 0-5

Begins the moment the bone is broken, with a massive disruption to blood supply resulting in large scale bleeding. This causes the immediate swelling and bruising known as a haematoma.

Damaged bone tissue at the edges of the fracture fragments die and release cytokines which initiating the healing process. Osteoclasts work to remove the dead bone cells.



Within hours of the fracture, a mesh of clotted blood forms, which creates the link between the two fragments.

<http://purelynutritious.com/wp-content/uploads/2015/09/Bone-Healing.jpg>

Soft Callus formation 4 Days – 3Weeks

Fibroblasts within the mesh, lay down granulation tissue (days 4 -10) forming a 'scaffold' between the two fragments, from which the formation of a soft callus can begin.

Fibroblast cells form "spongy" cartilage and fibrocartilage, which fills the gap between the two fracture fragments. This remains quite weak to external stresses for around 6 weeks therefore fracture site movement should be avoided.

The soft callus provides sufficient stability at the fracture site for new blood vessels to begin forming and for Osteoblasts at the Periosteum to begin laying down Woven bone.

Hard callus weeks 2/3 to 12weeks

Soft callus is transformed into woven bone, this generally takes 6 weeks for the upper limb and 12 weeks for the lower limb.

Hard callus formation is a complex process that is guided by the release of mineral compounds such as calcium and phosphate into the cartilage tissue. Once the hard callus has formed at the former fracture site, then fracture union is said to have occurred. Gentle weight bearing exercise during this stage encourages hard callus formation.

Bone Remodelling (Years)

The body will lays down more hard callus than is needed initially to unite the fracture fragments- site looks enlarged when viewed on x-ray. Over time, the normal shape of the bone is restored where bone is laid down where it is needed by Osteoblasts and removed by Osteoclasts, depending on the stresses that are placed on the bone during every day and sports activities.

