HISTORY TAKING IN NEUROLOGY

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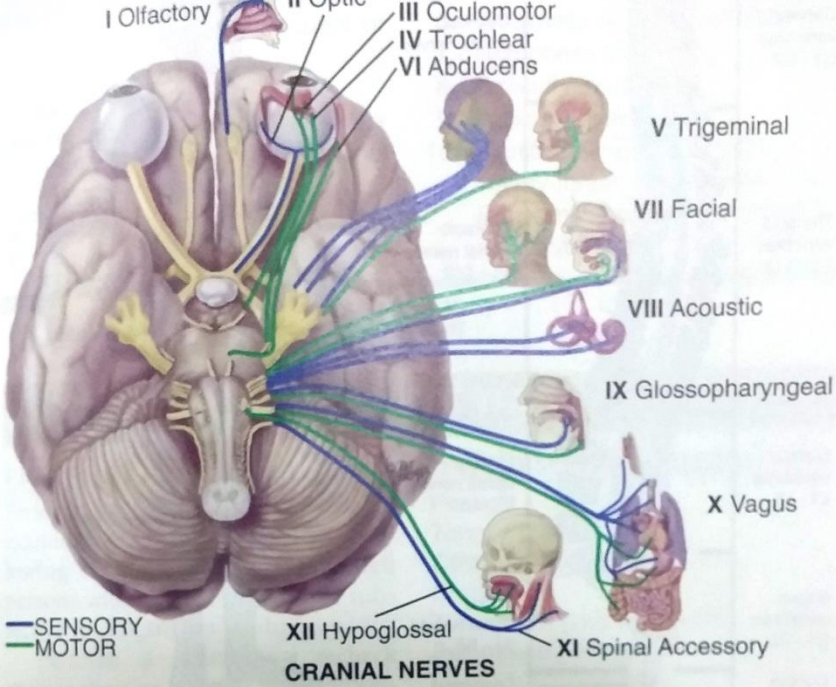
Anatomy of nervous system

- Central nervous system

  Brain and spinal cord
- Peripheral nervous system
- 12 pairs of cranial nerves
- 31 pairs of spinal nerves
- Peripheral nervous system carries sensory messages to the CNS from sensory receptors and motor messages

  from CNS out of muscle and glands as well as Autonomic messages to internal organ and blood vessels



CRANIAL NERVES

Cranial Nerve	Type	Function
I: Olfactory	Sensory	Smell
II: Optic	Sensory	Vision
III: Oculomotor	Mixed*	Motor—most EOM movement, opening of eyelids Parasympathetic—pupil constriction, lens shape
IV: Trochlear	Motor	Down and inward movement of eye
V: Trigeminal	Mixed	Motor—muscles of mastication Sensory—sensation of face and scalp, cornea, mucous membranes of mouth and nose
VI: Abducens	Motor	Lateral movement of eye
VII: Facial	Mixed	Motor—facial muscles, close eye, labial speech, close mouth Sensory—taste (sweet, salty, sour, bitter) on anterior two-thirds of tongue Parasympathetic—saliva and tear secretion
VIII: Acoustic	Sensory	Hearing and equilibrium
IX: Glosso-pharyngeal	Mixed	Motor—pharynx (phonation and swallowing) Sensory—taste on posterior one-third of tongue, pharynx (gag reflex) Parasympathetic—parotid gland, carotid reflex
X: Vagus	Mixed	Motor—pharynx and larynx (talking and swallowing) Sensory—general sensation from carotid body, carotid sinus, pharynx, viscera Parasympathetic—carotid reflex
XI: Spinal	Motor	Movement of trapezius and sternomastoid muscles
XII: Hypoglossal	Motor	Movement of tongue

**Mixed* refers to a nerve carrying a combination of fibers: motor + sensory; motor + parasympathetic; or motor + sensory + parasympathetic.

SUBJECTIVE DATA

1. Headache (unusually frequent or severe)
2. Head injury
3. Dizziness (feeling lightheaded or faint)/vertigo (feeling a rotational spinning)
4. Seizures
5. Tremors
6. Weakness or incoordination
7. Numbness or tingling
8. Difficulty swallowing
9. Difficulty speaking
10. Significant neurologic past history (brain attack, spinal cord injury, meningitis or encephalitis, congenital defect, alcoholism)

Headache

- Headache is pain in any part of the head, including the scalp, face (including the orbitotemporal area), and interior of the head. Headache is one of the most common reasons patients seek medical attention.

- Headache may occur as a primary disorder or be secondary to another disorder. Primary headache disorders include:

1. migraine,
2. cluster headache
3. tension-type headache.

- **Disorders Causing Secondary Headache**

Extracranial disorders	Dental disorders (eg, infection, temporomandibular joint dysfunction) Glaucoma Sinusitis
Intracranial disorders	Brain tumors and other masses Hemorrhage (intracerebral, subdural, subarachnoid) Idiopathic intracranial hypertension
Systemic disorders	MENINGITIS Acute severe hypertension Fever Hypercapnia Hypoxia Viral infections
Drugs and toxins	Analgesic overuse Caffeine withdrawal Hormones (eg, estrogen) Nitrates

Type of headache

- TENSION HEADACHES

Pain usually bilateral, fronto-occipital

Throbbing in nature

Mild to moderate pain

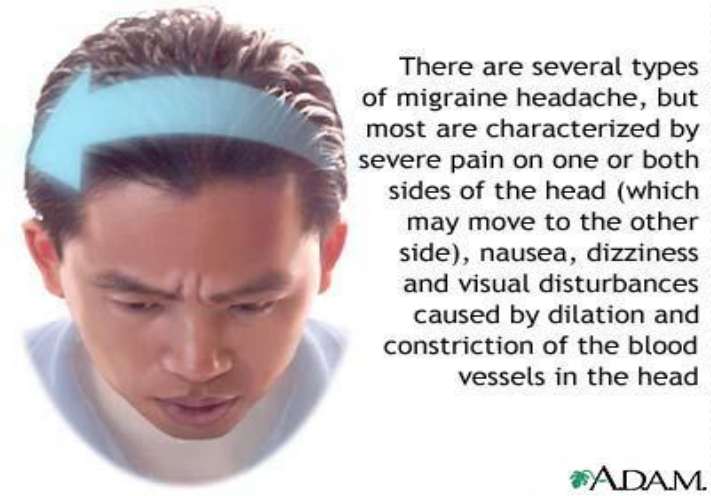
Tight band sensation

Pressure behind eyes

Precipitants: worry, stress, noise, etc

MIGRAINE

- More common in women
- Usually one sided
- Throbbing
- Mild to severe pain
- Nausea and vomiting
- Photophobia/phonophobia
- Visual aura or photopsia
- Lasts for several hours



Aura (It often manifests as the perception of a strange light, an unpleasant smell, eye roll)

CLUSTER HEADACHES

- More common in men
- Excruciating unilateral pain around one eye
- Drooping eyelid
- Redness or tearing of one eye
- Nasal stuffiness

Cluster headaches may involve pain around one eye, along with drooping of the lid, tearing and congestion on the same side as the pain

A.D.A.M.

- Pain is brief, occurring repeatedly for weeks (in clusters) followed by a few months rest before another cluster occurs

Headaches

Sinus:	Cluster:	Tension:	Migraine:
pain is usually behind the forehead and/or cheekbones	pain is in and around one eye	pain is like a band squeezing the head	pain, nausea and visual changes are typical of classic form

ADAM.

MENINGITIS

- Headache
- Stiff neck
- Fever
- Nausea and vomiting
- Photophobia
- Drowsiness
- Confusion

- Location of pain
- Type of pain: Continuous, pulsating, stabbing, sharp, throbbing, dull, thunderclap pain

- Onset and duration of headaches:

  Acute: minutes to hours – vascular problem such as subarachnoid hemorrhage, migraine

  Subacute: hours to days – infective/ inflammatory cause eg meningitis, cerebral abscess

  Chronic: weeks to months - neoplastic

  months to years – degenerative process

- Frequency of headaches

- Patterns of headache: recurrent, intermittent with pain-free intervals, continuous, progressively increasing
- Time of occurrence of headache (diurnal or seasonal variation)
- Precipitating factors (stress, menses, allergens, sleep deprivation, coughing, straining, bending forwards,etc)
- Relieving factors (sleep, stress management, etc)
- Radiation of pain
- Associated symptoms: photophobia, phonophobia, sensory or motor complaints, GIT symptoms, other

HISTORY OF SEIZURES

- Any clinical event caused by abnormal electrical discharge in the brain

- Epilepsy is the tendency to have recurrent seizures (fits)

SEIZURE CLASSIFICATION

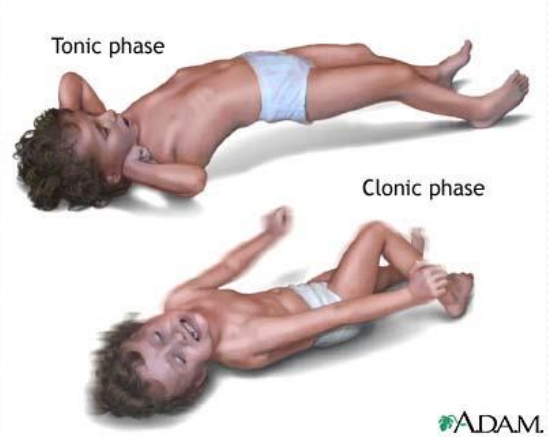
Localized – Partial - seizures

- Simple partial - if consciousness not affected
- Complex partial - if consciousness is affected

Generalized seizures

- All involve loss of consciousness

Generalised seizure



- Tonic-clonic phases
- fall
- Tongue biting
- Frothing at the mouth during the clonic phase
- Cyanosis
- Urinary/faecal incontinence
- Rhythmic jerking movements of limbs
- LOC (+ drowsiness + post-ictal confusion, amnesia and headache)

Dr. Devinsky and I created this list of tips regarding what to do if someone near you is having a seizure:

1. **Stay calm**.

2. **Call 911** if the person is having her first seizure or is pregnant.

3. **Try to time the seizure**. Seizures usually do not last longer than 60 to 120 seconds. If the seizure lasts longer than 3 minutes, call 911.

4. **If the person is standing, prevent her from falling** by holding her in a hug, or try to help her gently to the floor.

5. **Move away furniture or other objects** that might injure the person during the seizure.

6. **If the person having a seizure is on the ground when you arrive, try to position her on her side** so that any saliva or vomit can leak out of her mouth rather than be swallowed or go down the windpipe.

7. **Do not put anything, including your fingers, into the person's mouth** while she is seizing. You could chip the person's tooth, or your finger could be bitten.

8. **Do not try to hold the person down** because this can cause injury, such as a dislocated shoulder.

After the seizure:

1. **Check the person for injuries**.

2. **If you could not turn the person onto her side during the seizure, do so when the seizure has ended** and the person is calm.

3. **If the person is having trouble breathing, use your finger to gently clear her mouth** of any saliva or vomit. If this does not work, call for emergency help.

4. **Loosen tight clothing** around the person's neck and waist.

5. **Provide a safe area** where the person can rest.

6. **Do not give the person anything to eat or drink** until she is fully conscious and aware of her surroundings.

7. **Stay with the person until she is awake and any confusion wears off**. Most people feel sleepy or confused after a seizure.

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SYNCOPE

- Fainting or LOC resulting from recoverable loss of adequate blood supply to the brain
- Vaso-vagal syncope - provoked by emotionally charged event e.g venepuncture
- Cardiac syncope - sudden decline in cardiac output and hence cerebral perfusion e.g severe aortic stenosis or heart block

SEIZURE AND SYNCOPE

- Features helpful in distinguishing the two:

	Seizure	Syncope
1) Aura	+	-
2) Cyanosis	+	-
3) Tongue-biting	+	-
4) Post-ictal confusion, headache and amnesia	+	-
5) Rapid recovery	-	+

History of seizure

- Obtain a description of the seizure/s:
- From patient and witness (NB blackouts, faints, fits, loss of consciousness)
- What happens at the onset of the fit?
- What happens during the fit?
- Does the patient fall or remain standing or sitting?
- How does the fit end?
- Confusion or other post-ictal symptoms

- Is there incontinence, any injury or tongue biting?
- Frequency of seizures?
- When do the seizures occur?
- What medication is taken?
- History of past/ current medication, compliance and response to medication
- Change in seizure pattern
- Family history of seizures
- Head trauma or brain illness

  (especially in adult onset epilepsy)
- Birth history

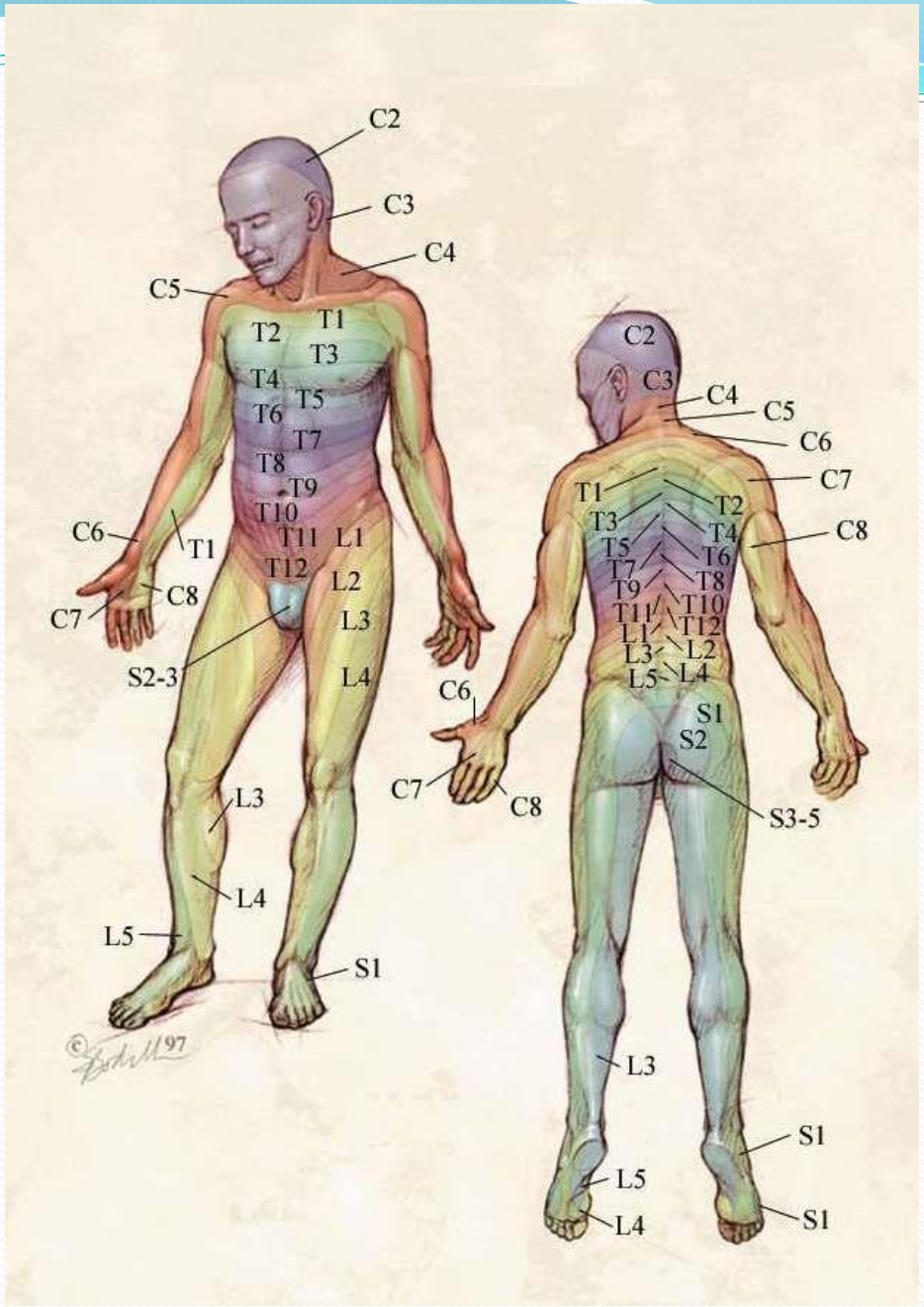
  (especially in early onset seizures)

Symptoms of Motor Dysfunction

- Weakness – ask about ability to lift arms / objects, grip strength, getting up from a chair / bed, going upstairs
- Wasting / loss of muscle bulk
- Stiffness of limbs

Symptoms of Sensory Dysfunction

- Numbness
- Loss of feeling
- Altered feeling eg paraesthesia dysaesthesia (tingling, pins-and-needles)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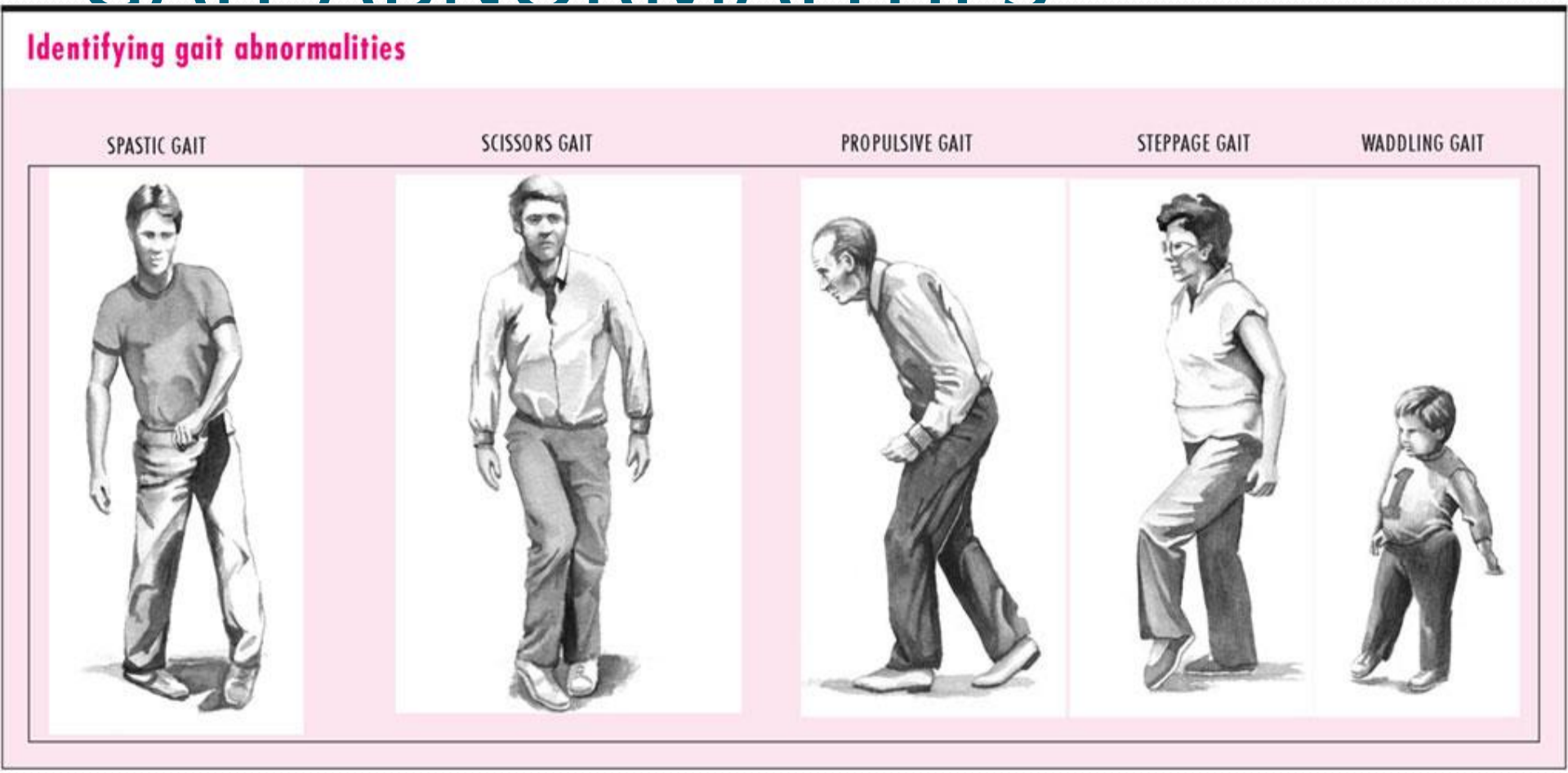
MGM Year 2

Symptoms of Co-ordinatory Dysfunction or Balance disturbance

- Difficulty in walking
- Unsteadiness
- Falls
- Staggering
- Loss of balance in the dark

GAIT ABNORMALITIES



Symptoms of changes in mental state or cognitive decline

- Changes in memory
- State of alertness / drowsiness
- Changes in mood
- Loss of orientation
- Language changes
- Diminished ability to carry out routine activities of daily living

Components of Neurological History (cont)

- Enquiry re other systems – co-existing disease, risk factors for cerebro-vascular disease eg HT, DM, atrial fibrillation, hyperlipidaemia –
- Cardiovascular
- Respiratory
- Gastro-intestinal
- Genito-urinary

Components of Neurological History (cont)

- Past medical and surgical history - e.g meningitis, encephalitis, head or spinal injury, epilepsy
- Medications and allergies - past and current medications
  e.g anti-convulsants, OC, steroids
  anti-hypertensives, anti-coagulants
- Family History
  Neurological (CVA)
- Social and Occupational History
  - habits, alcohol, tobacco/drug use,