



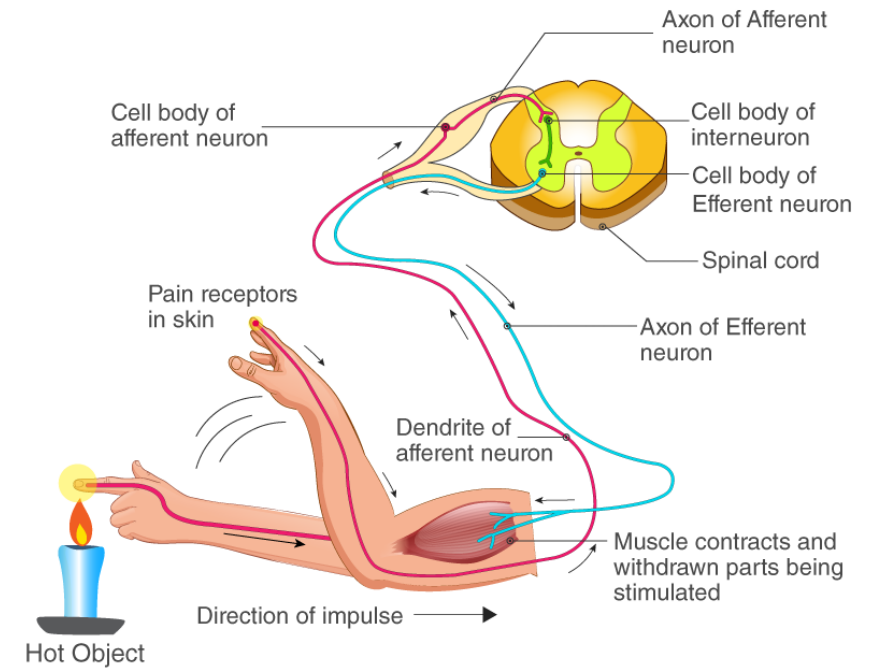
SUPERFICIAL REFLEXES

REFLEX ACTION

- A **reflex**, or **reflex action**, is an **involuntary** and nearly instantaneous response to a stimulus **without the intervention of will**

REFLEX ACTION

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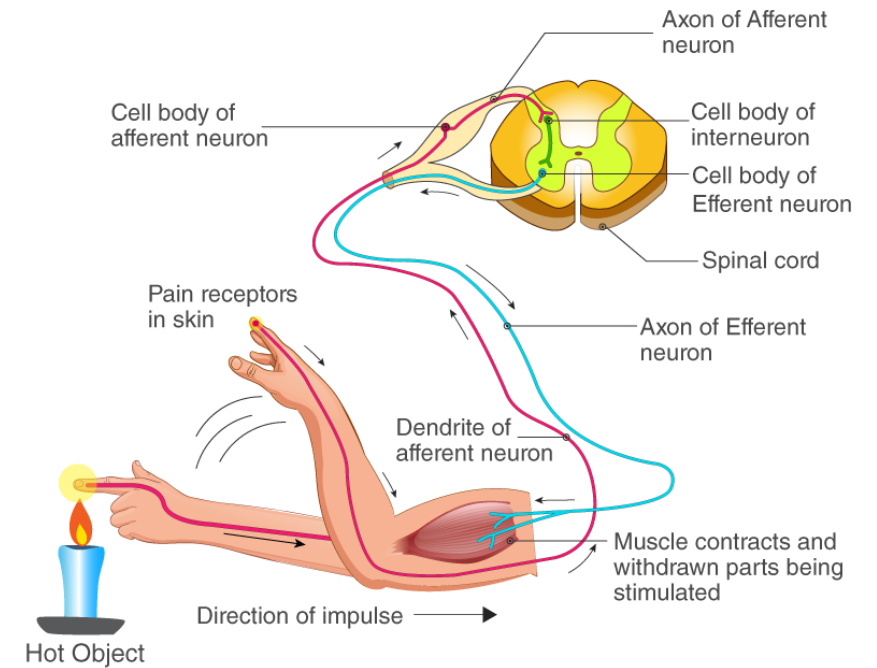
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REFLEX ARC

- Basic unit of integrated reflex activity
- It has 5 components:
 1. Receptor
 2. Afferent Limb
 3. Centre
 4. Efferent Limb
 5. Effector

REFLEX ACTION

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SUPERFICIAL REFLEXES

- Superficial reflexes are **motor responses** to scraping of the **skin** or touching **the mucus membrane**
- Stroking of the skin elicits muscle contraction
- The superficial reflexes are elicited by sensory afferents from skin, rather than muscle

GENERAL RULES WHEN APPROACHING A SUBJECT

- **PRIMUM NON NOCERE (First do no Harm)**
- 1. Always approach the subject from Right side
- 2. Introduce yourself
- 3. Take Consent
- 4. Thank the subject after you are done

CORNEAL REFLEX

- Afferent: CN V1
- Reflex centre: Pons
- Efferent: Bilateral CN 7

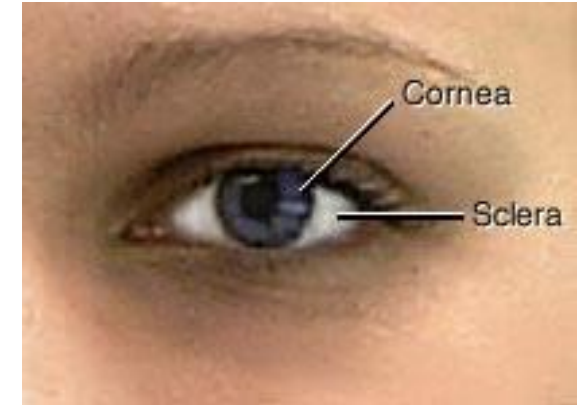
METHOD OF ELICITING:

Touch the cornea with wisp of cotton just below the pupil brought in from the side of the patient

RESPONSE:

Reflex blinking of both eyelids

Absent in brain death



CONJUNCTIVAL REFLEX

- Afferent: CN V1
- Reflex centre: Pons
- Efferent: Bilateral CN 7

METHOD OF ELICITING:

Performed similar to corneal reflex but conjunctiva is touched

RESPONSE:

Reflex blinking of both eyelids



PHARYNGEAL REFLEX

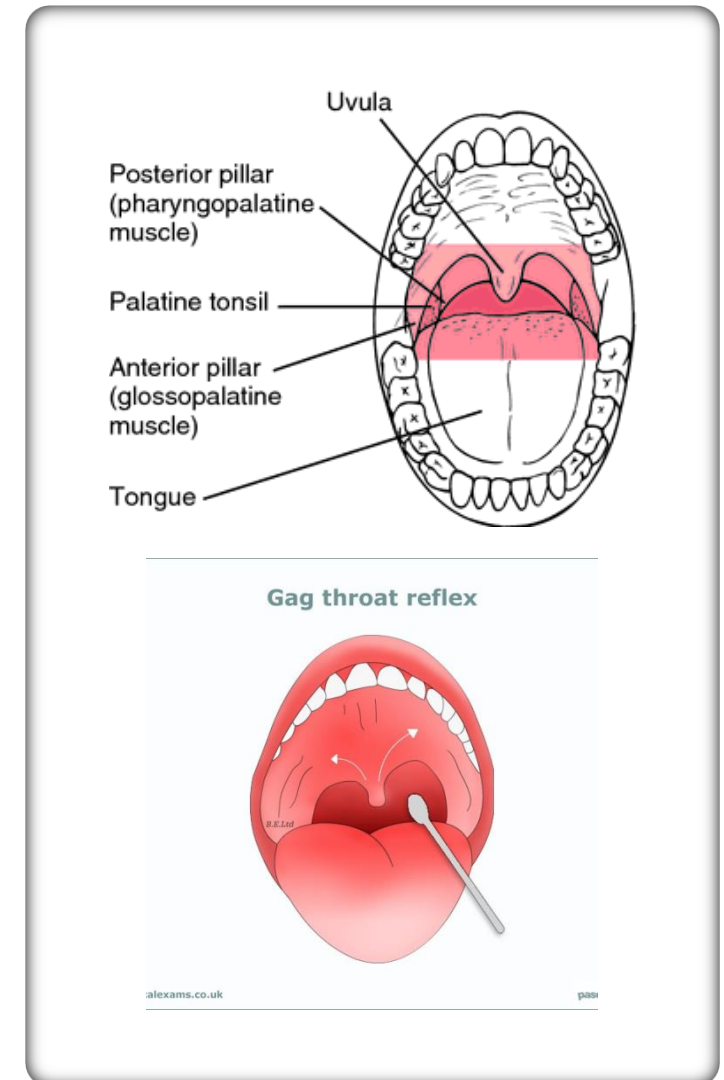
- Afferent: CN 9
- Efferent: CN 10

METHOD OF ELICITING:

Stimulating the posterior pharyngeal wall with a cotton stick

RESPONSE:

Contraction of the pharynx and elevation of the pharyngeal wall



SCAPULAR REFLEX

- Nerve: C5 – T1

METHOD OF ELICITING:

Stroking skin in interscapular area

RESPONSE:

Contraction of the scapular muscles

ABDOMINAL REFLEX

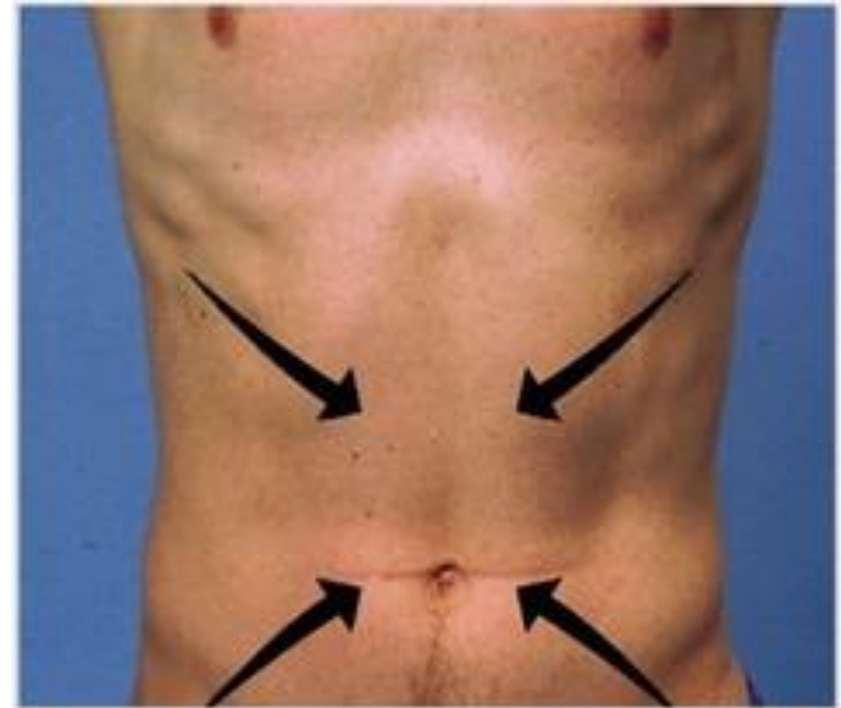
- Epigastric – T7-9
- Upper abdominal – T9-11
- Lower abdominal – T11-L1

METHOD OF ELICITING:

Lightly stroke the abdomen from out to inwards in all quadrants from both sides

RESPONSE:

Contraction of the abdominal muscles



CREMASTERIC REFLEX

- Afferent: Femoral nerve (L1 and L2)
- Efferent: Genitofemoral nerve

METHOD OF ELICITING:

Upper part of the inner thigh is lightly stroked downwards and inwards

RESPONSE:

Pulling up of the testis and scrotum on that side

Clinical Correlate: Absent in Testicular Torsion

ANAL REFLEX

- Afferent: Pudendal nerve (S3 and S4)
- Efferent: Pudendal nerve

METHOD OF ELICITING:

Lightly scratching the perianal skin

RESPONSE:

Contraction of the external anal sphincter

PLANTER REFLEX

- Nerve: Posterior tibial nerve (L5 and S1)

METHOD OF ELICITING:

Muscles of the lower limb should be relaxed

The outer end of the sole of foot is stimulated by using a key or a blunt object from the heel upto the ball of big toe

FLEXOR RESPONSE:

Flexion of the toes

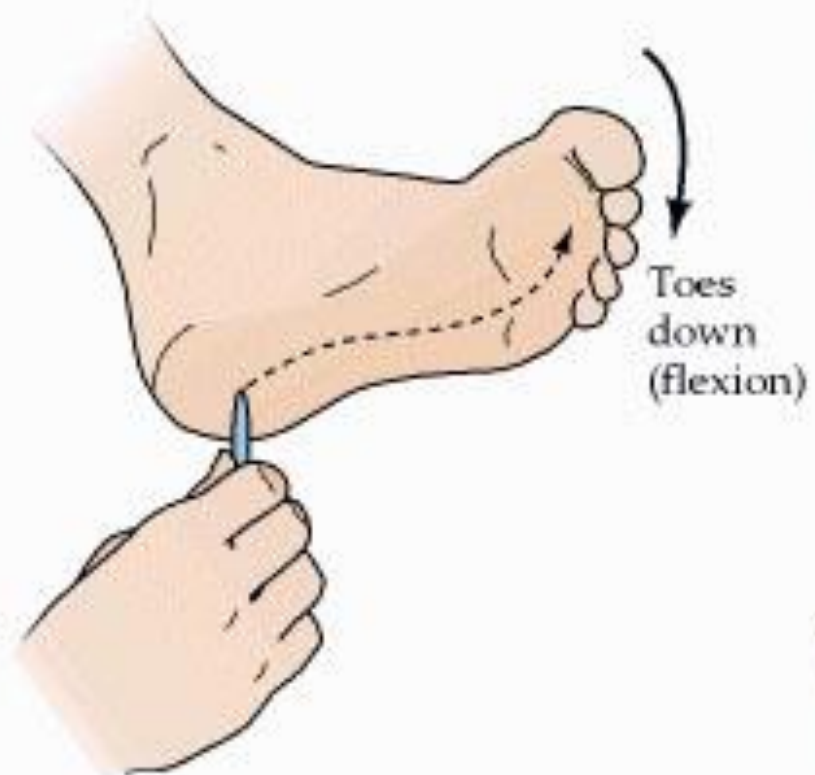
EXTENSOR RESPONSE:

Dorsiflexion of the big toe

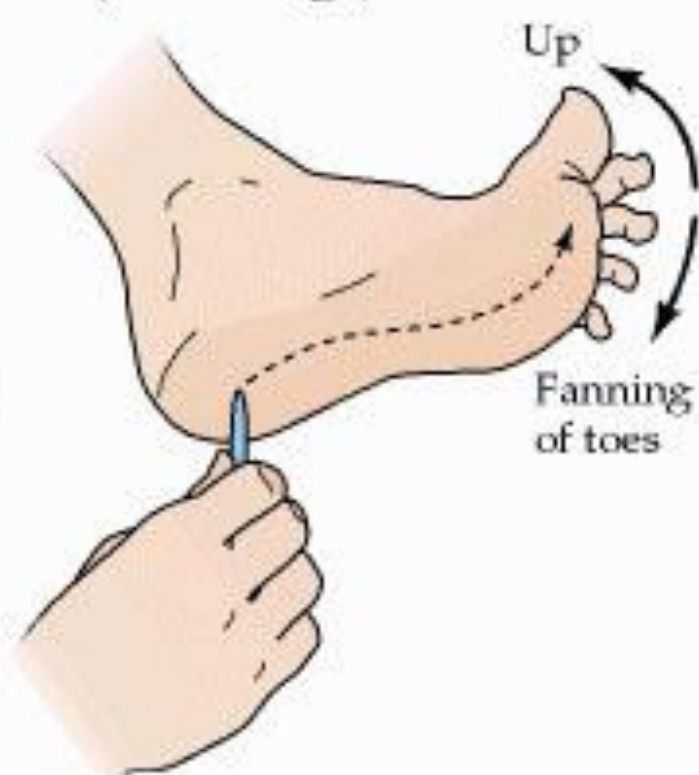
Fanning of the other toes



(A) Normal plantar response



(B) Extensor plantar response
(Babinski sign)



CONDITIONS IN WHICH BABINSKI SIGN IS POSITIVE

1. **UMN lesions**
2. Deep sleep
3. **Infants**
4. Coma
5. Post ictal state
6. Hypoglycemia
7. CNS depressants

PUPILLARY REFLEX

- assesses the reflex that controls the size of the pupil in response to light
- first dim the lights
- ask the subject to look at an object in the distance
- a light will be shone in his eyes by a torch from each side
- determine whether or not pupils constrict in response to the light

DIRECT

Pupil constriction on the same side

INDIRECT or CONSENSUAL

Pupil constriction of the opposite eye



QUESTION TIME



Can you name one physiological and one pathological condition in which there is extensor planter response?



THANK YOU

