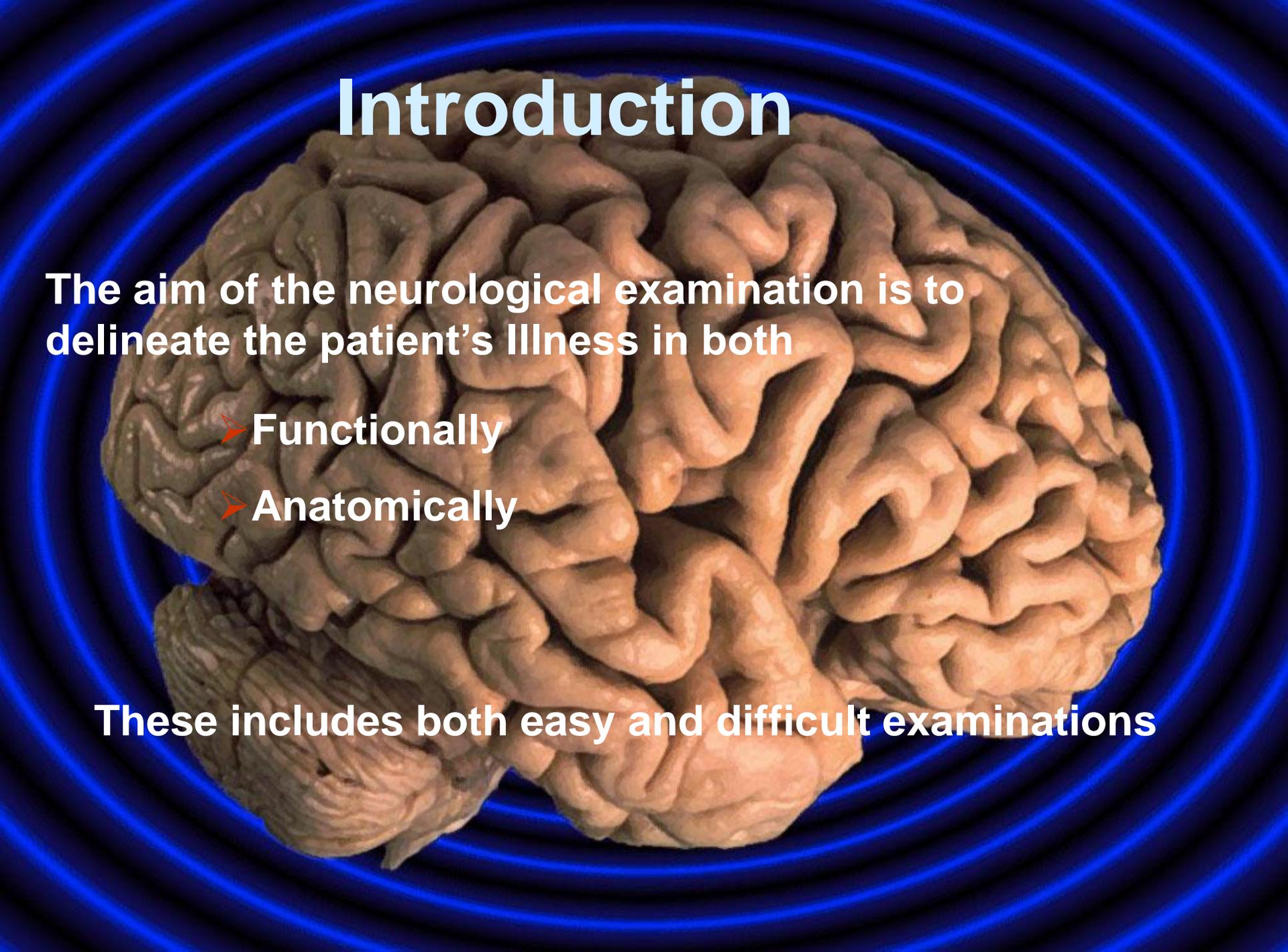
A human brain is shown in a top-down view, centered against a background of concentric blue circles that create a ripple effect. The brain's surface is highly textured with visible gyri and sulci.

Neurological examinations made easy

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Professor
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Introduction

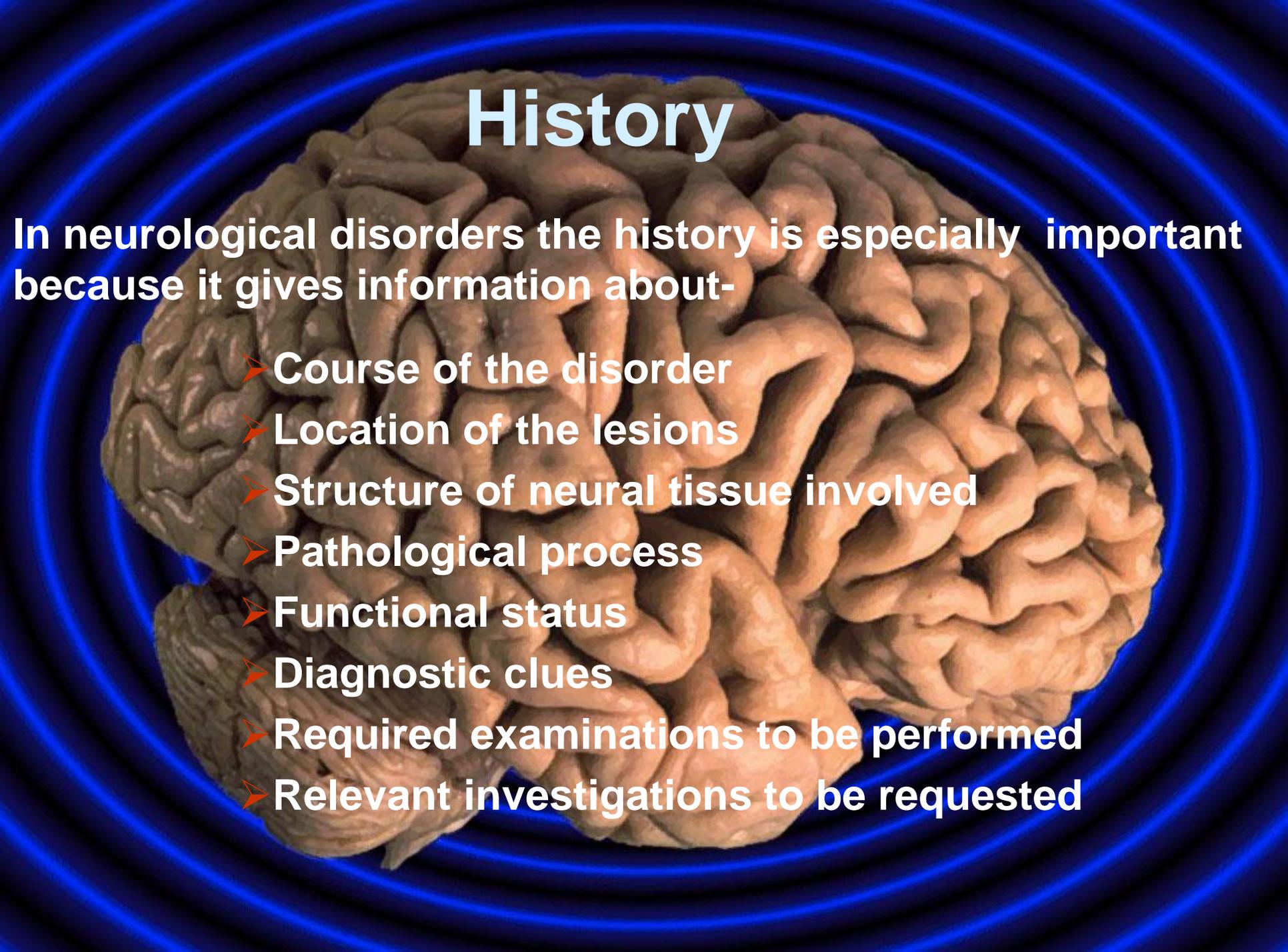
A human brain is shown from a top-down perspective, centered in the frame. The brain is a light brown color with a highly textured, wrinkled surface. Surrounding the brain are several concentric, glowing blue circles that create a ripple effect, suggesting a focus or a field of influence. The background is black, making the brain and the blue circles stand out prominently.

The aim of the neurological examination is to delineate the patient's illness in both

- Functionally
- Anatomically

These includes both easy and difficult examinations

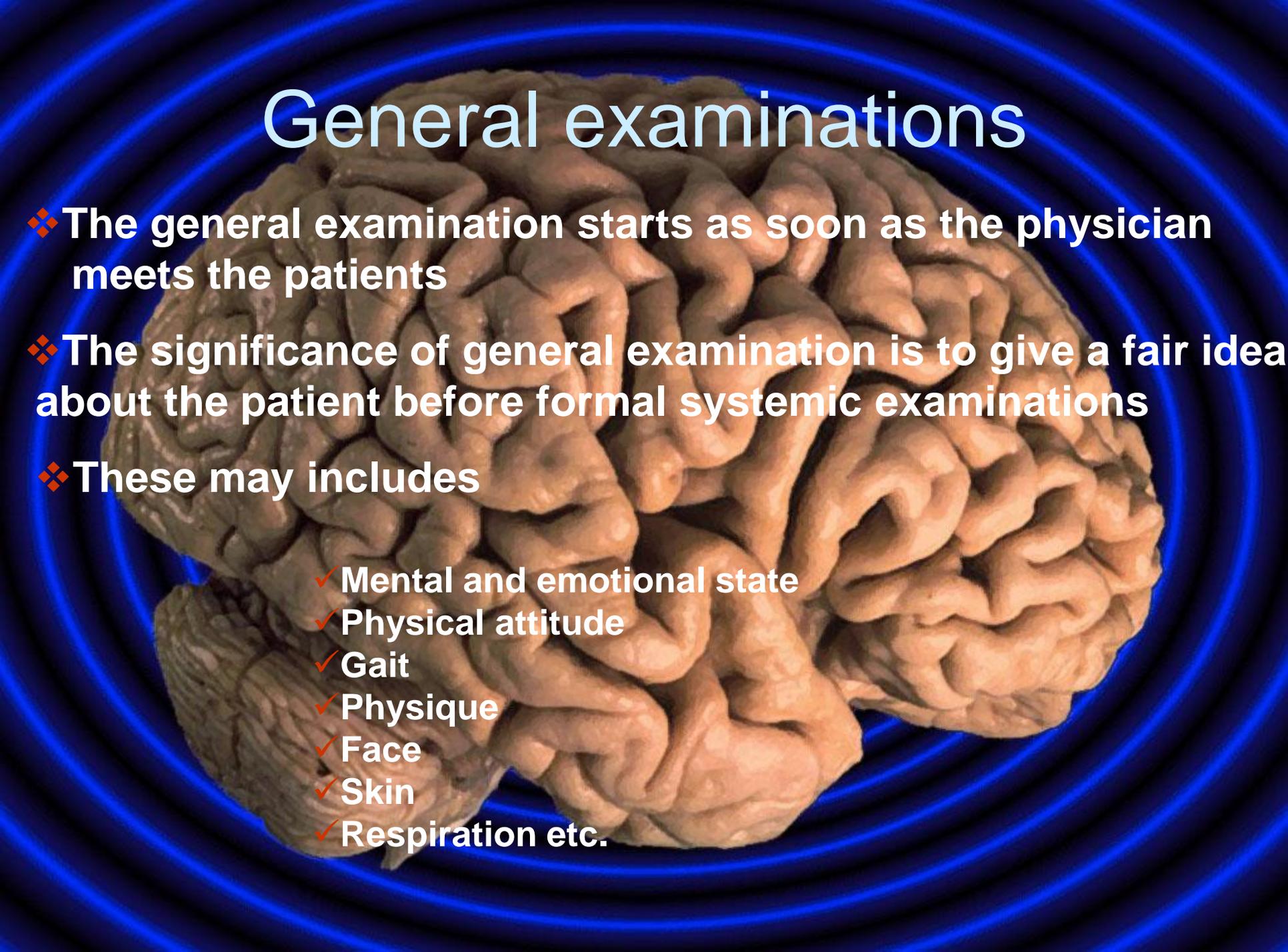
History



In neurological disorders the history is especially important because it gives information about-

- **Course of the disorder**
- **Location of the lesions**
- **Structure of neural tissue involved**
- **Pathological process**
- **Functional status**
- **Diagnostic clues**
- **Required examinations to be performed**
- **Relevant investigations to be requested**

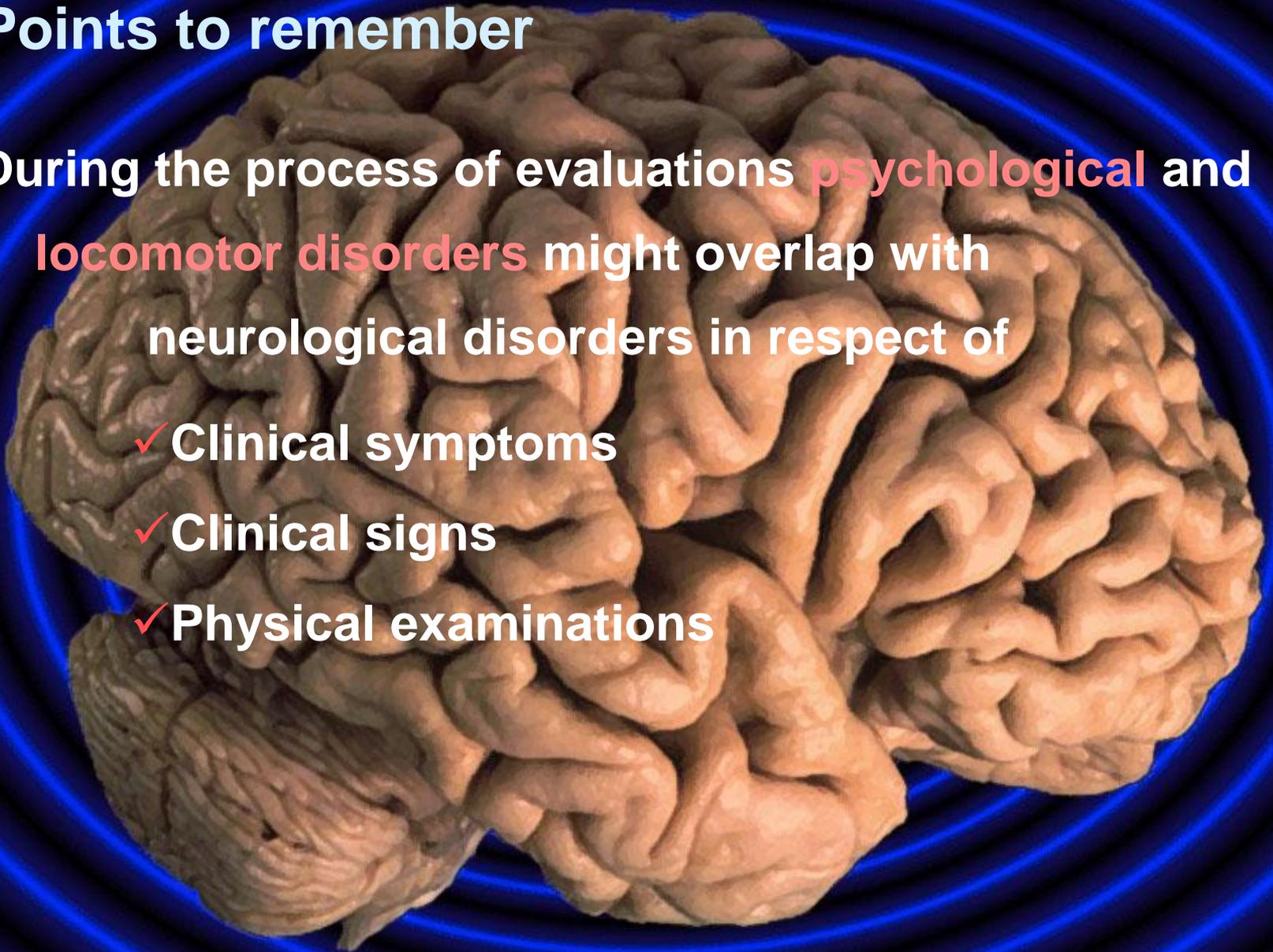
General examinations

A human brain is shown from a top-down perspective, centered in the frame. The brain is a light brown color with visible gyri and sulci. It is surrounded by a series of concentric, glowing blue circles that create a tunnel-like effect, drawing the eye towards the brain. The background is black.

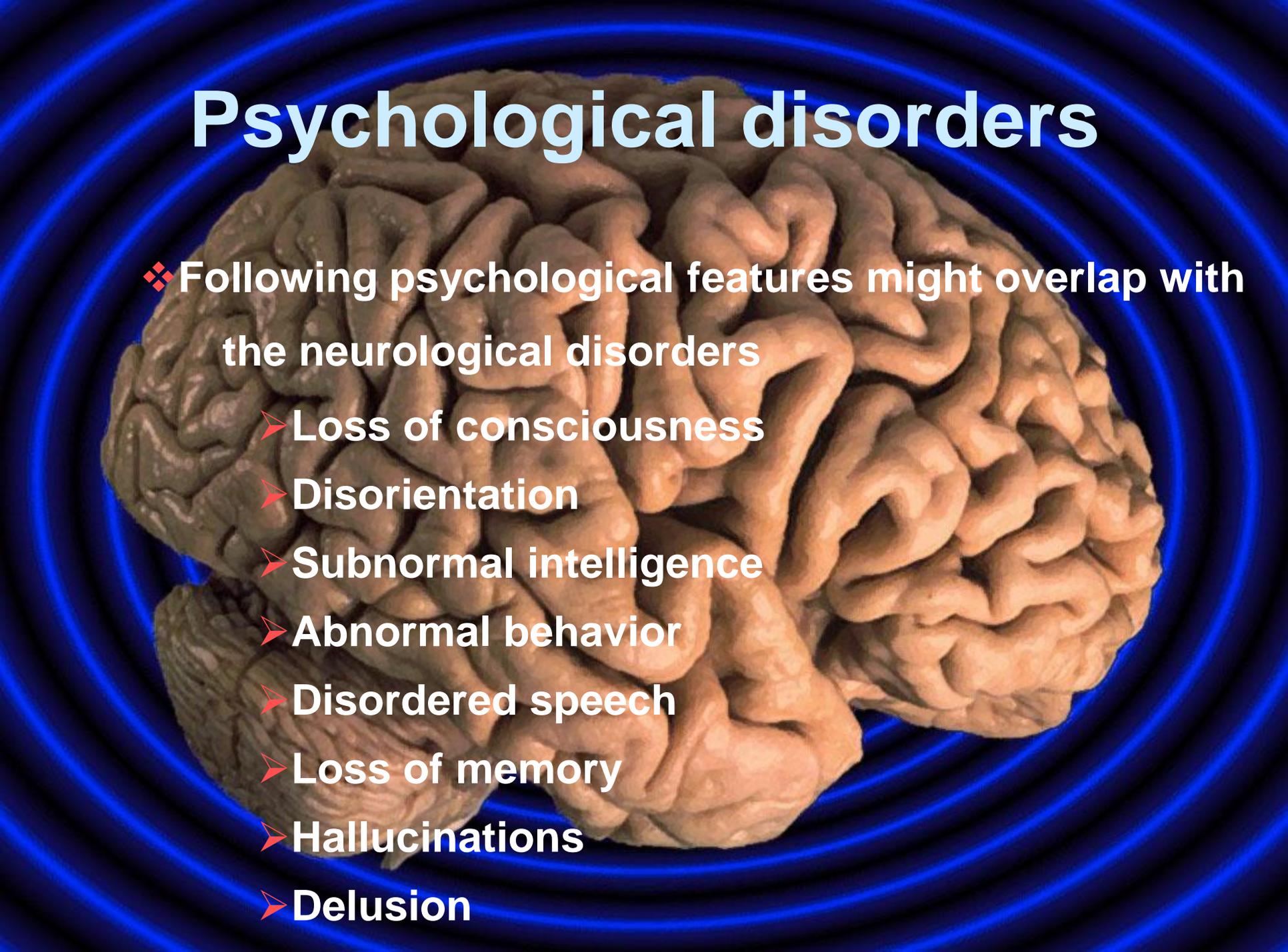
- ❖ The general examination starts as soon as the physician meets the patients
- ❖ The significance of general examination is to give a fair idea about the patient before formal systemic examinations
- ❖ These may includes
 - ✓ Mental and emotional state
 - ✓ Physical attitude
 - ✓ Gait
 - ✓ Physique
 - ✓ Face
 - ✓ Skin
 - ✓ Respiration etc.

Points to remember

- During the process of evaluations **psychological** and **locomotor disorders** might overlap with neurological disorders in respect of
 - ✓ Clinical symptoms
 - ✓ Clinical signs
 - ✓ Physical examinations



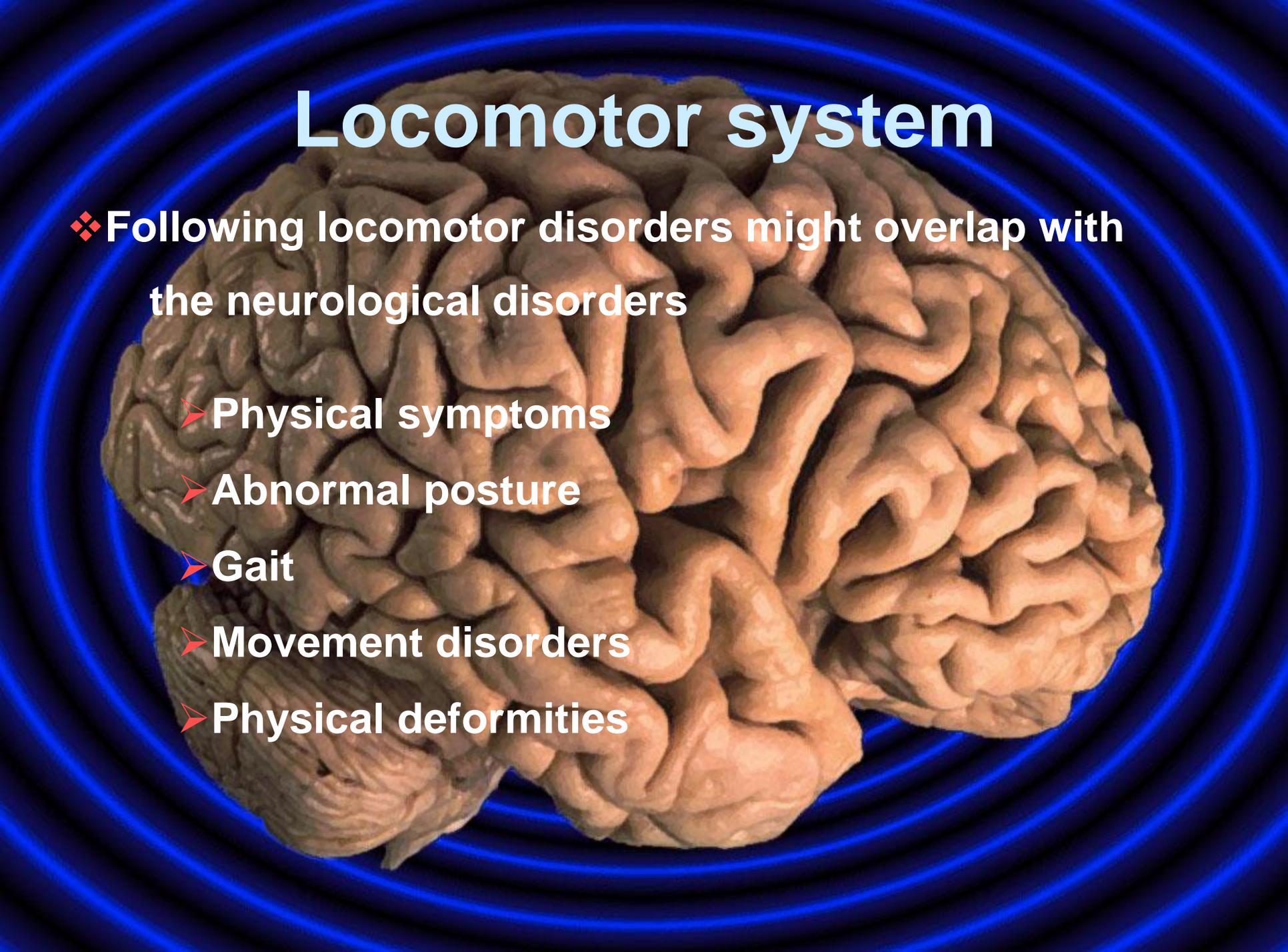
Psychological disorders

A human brain is shown from a top-down perspective, centered in the frame. The brain is a light brown color with visible gyri and sulci. It is surrounded by a series of concentric blue circles that create a glowing effect, suggesting neural activity or a focus on the brain.

❖ Following psychological features might overlap with the neurological disorders

- Loss of consciousness
- Disorientation
- Subnormal intelligence
- Abnormal behavior
- Disordered speech
- Loss of memory
- Hallucinations
- Delusion

Locomotor system



❖ Following locomotor disorders might overlap with the neurological disorders

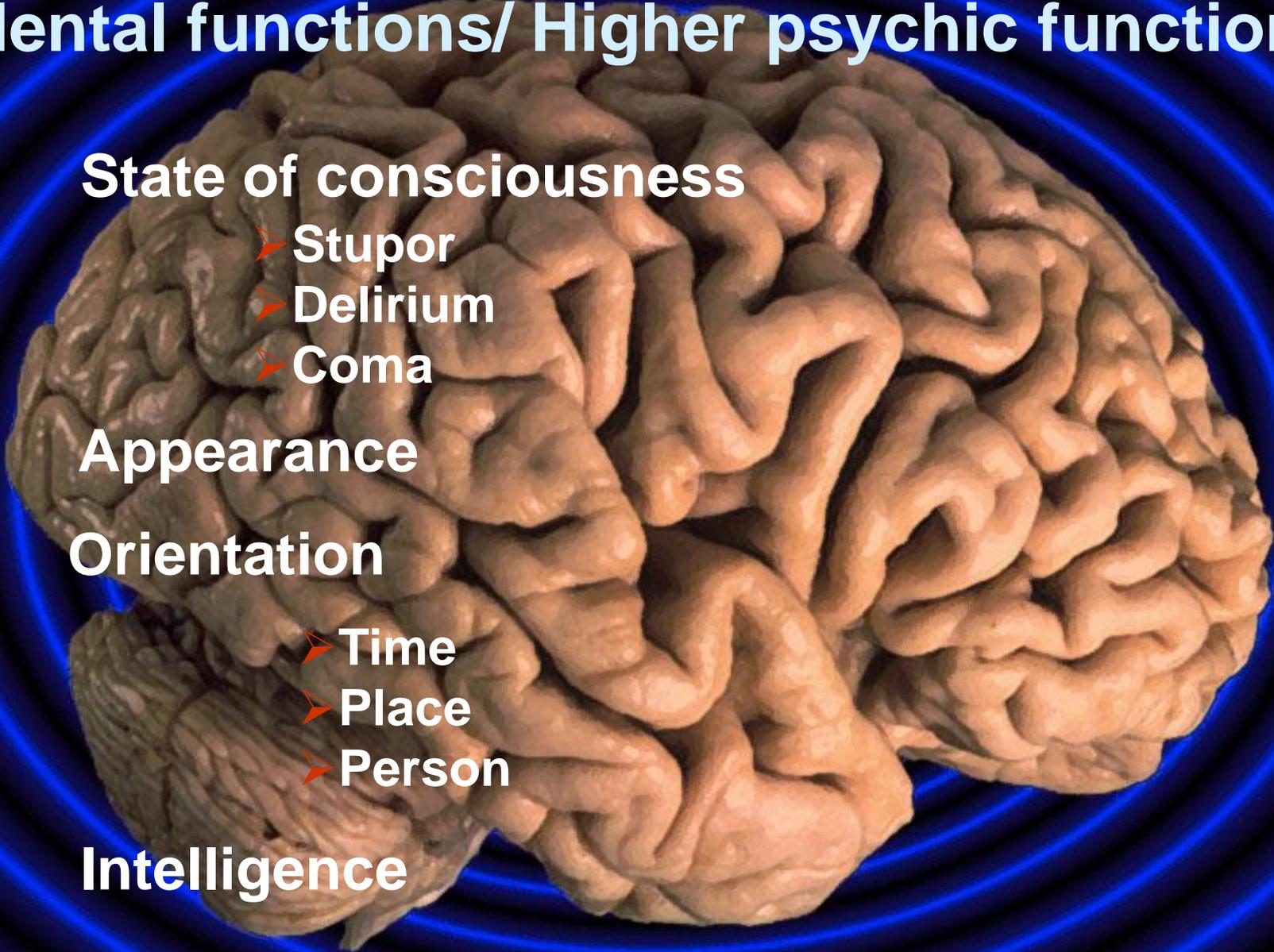
- Physical symptoms
- Abnormal posture
- Gait
- Movement disorders
- Physical deformities

Out line of nervous system examinations

- Higher psychic function
- Examinations of the cranial nerves
- Motor functions
- Sensory functions
- Signs of meningeal irritation
- Gait



Mental functions/ Higher psychic functions

A detailed, realistic illustration of a human brain, showing the intricate folds and grooves of the cerebral cortex. The brain is rendered in a naturalistic tan color. It is set against a dark blue background that features several concentric, glowing blue circles, creating a sense of depth and focus on the brain. The text is overlaid on the left side of the brain, listing various mental and psychic functions.

State of consciousness

- Stupor
- Delirium
- Coma

Appearance

Orientation

- Time
- Place
- Person

Intelligence

Memory

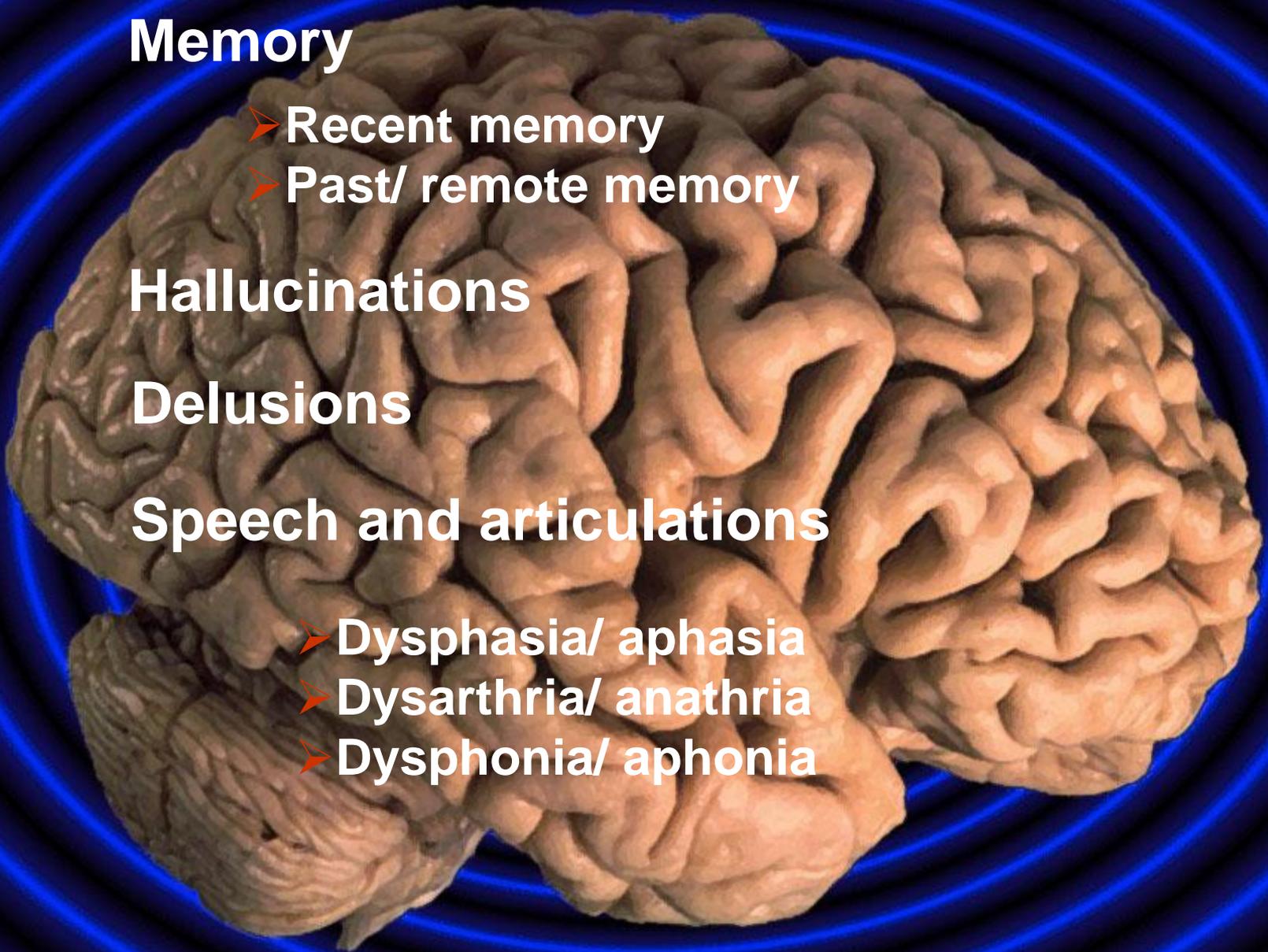
- Recent memory
- Past/ remote memory

Hallucinations

Delusions

Speech and articulations

- Dysphasia/ aphasia
- Dysarthria/ anathria
- Dysphonia/ aphonia



Cranial nerves examinations

1. Olfactory nerve:

Ask about:

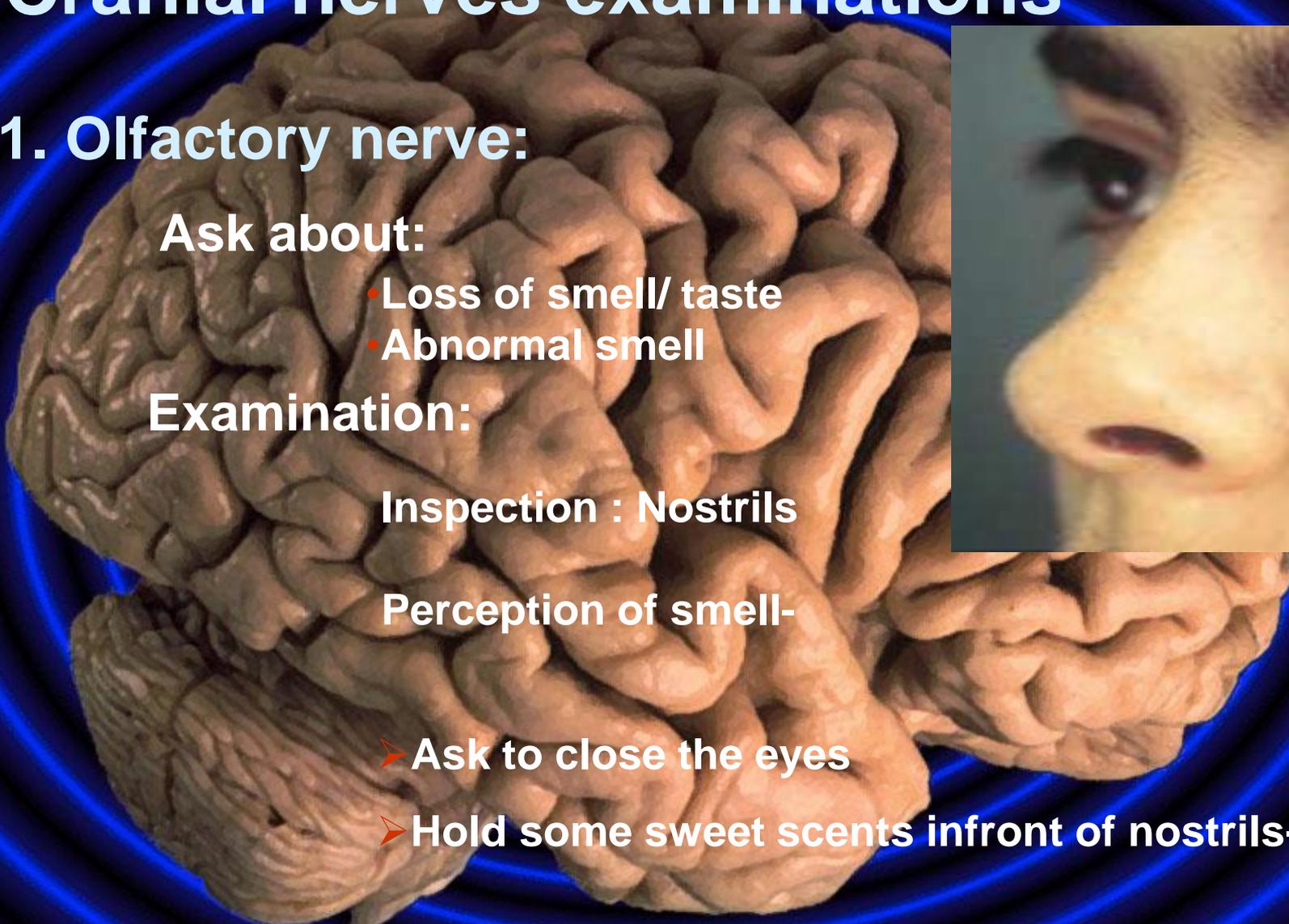
- Loss of smell/ taste
- Abnormal smell

Examination:

Inspection : Nostrils

Perception of smell-

- Ask to close the eyes
- Hold some sweet scents in front of nostrils- soap



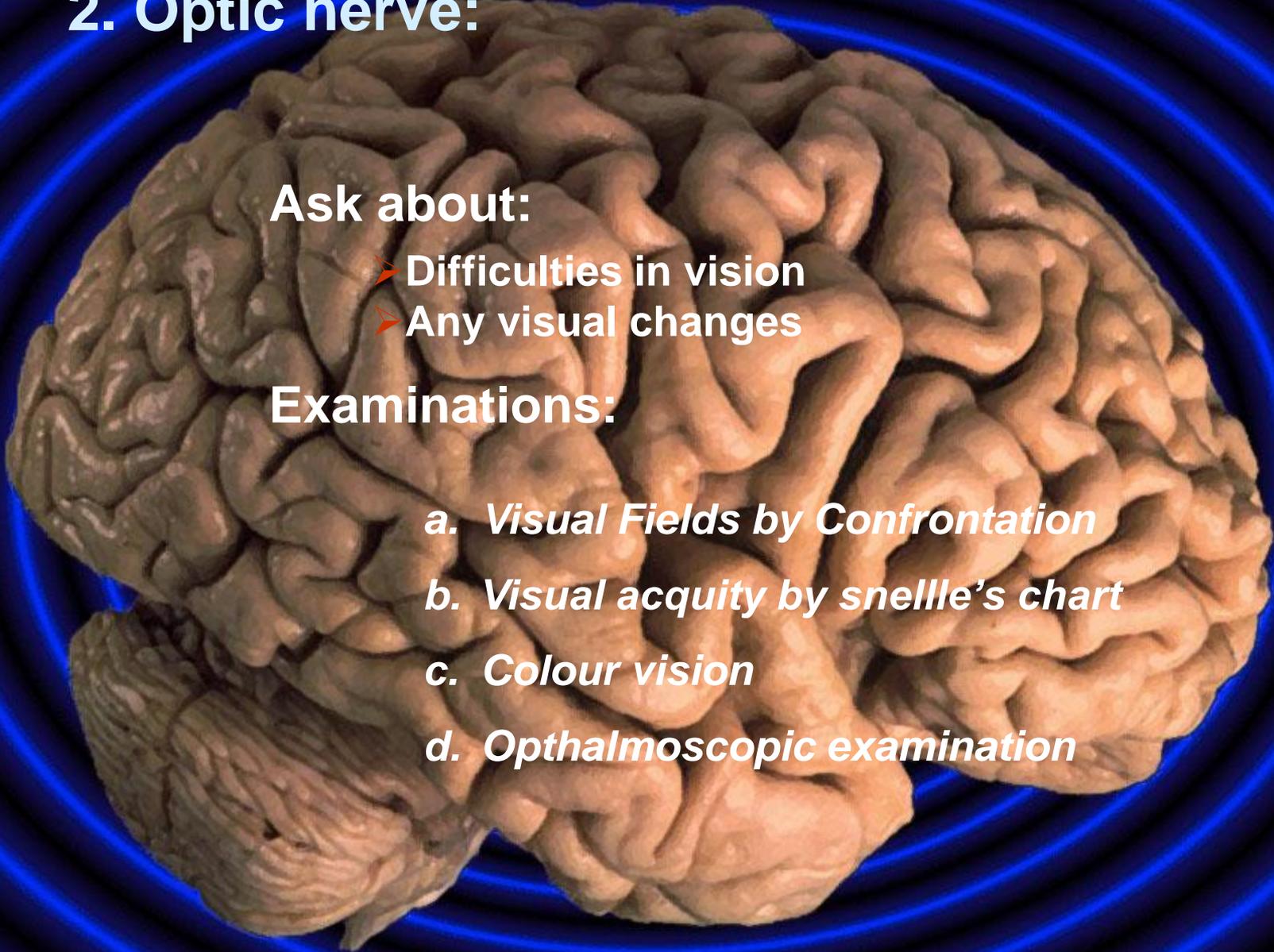
2. Optic nerve:

Ask about:

- Difficulties in vision
- Any visual changes

Examinations:

- Visual Fields by Confrontation*
- Visual acuity by snelle's chart*
- Colour vision*
- Ophthalmoscopic examination*



Confrontation



Ophthalmoscopic examination



3. Oculomotor, trochlear and abducent

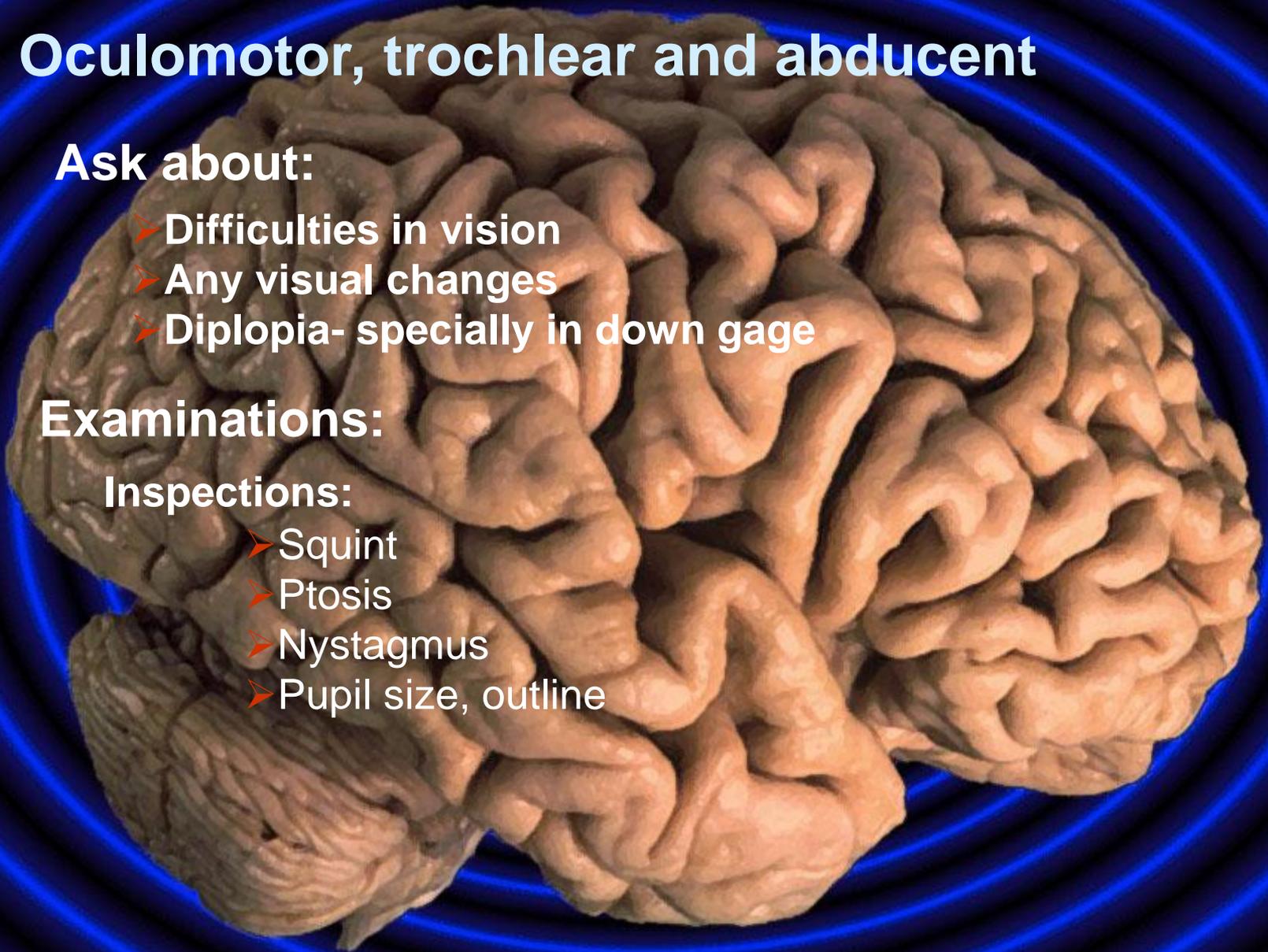
Ask about:

- Difficulties in vision
- Any visual changes
- Diplopia- specially in down gage

Examinations:

Inspections:

- Squint
- Ptosis
- Nystagmus
- Pupil size, outline



Extra ocular muscles and there directions

Superior
rectus (III)

Lateral
rectus
(VI)

Inferior
rectus (III)

Inferior
oblique (III)

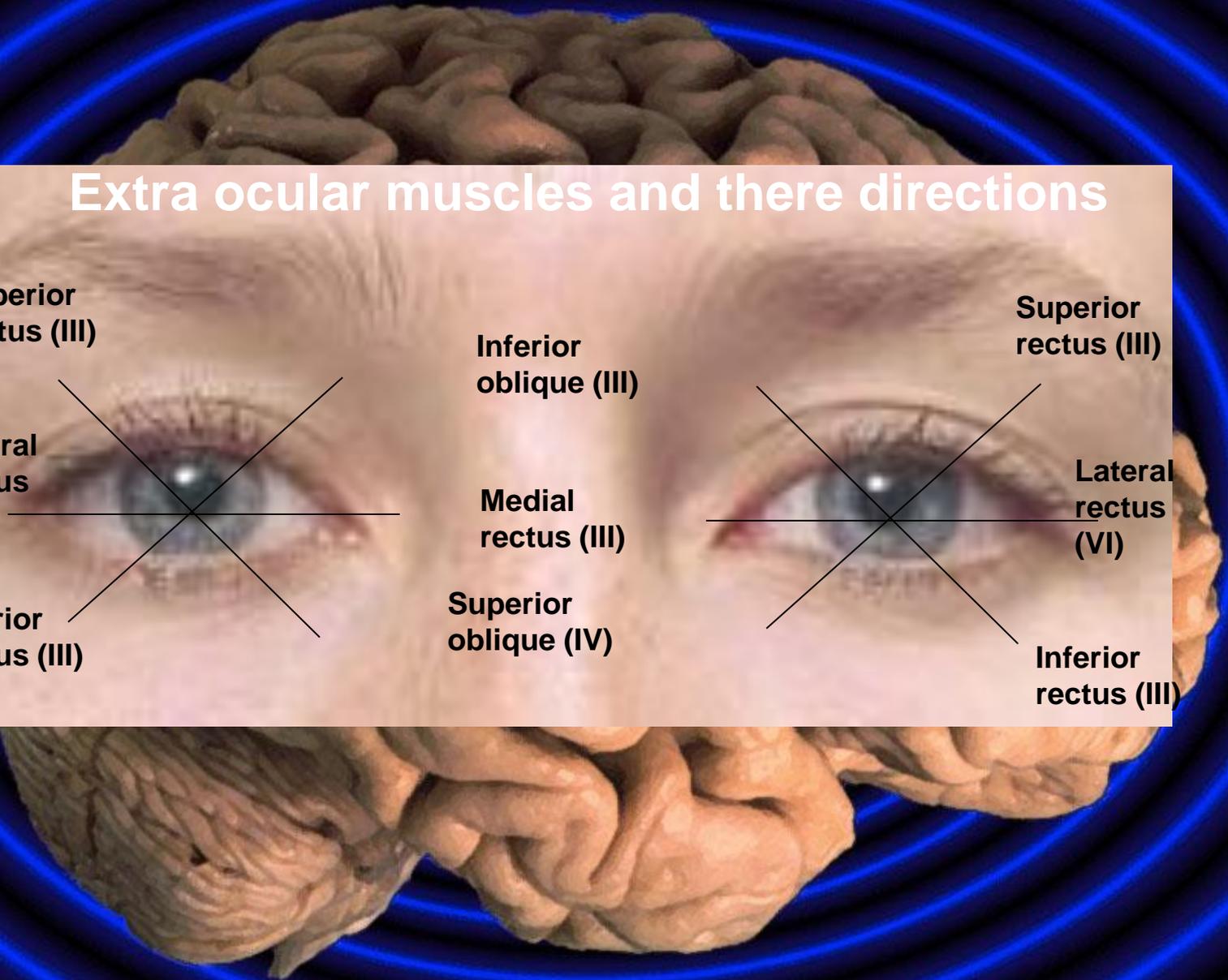
Medial
rectus (III)

Superior
oblique (IV)

Superior
rectus (III)

Lateral
rectus
(VI)

Inferior
rectus (III)



Examinations:

Light reflex: **Direct**
Indirect

Accommodation reflex:

- Ask the pt. to look toward a distant point
- Ask the pt. to look towards a near point



Ocular movements

- Fixed the head
- Eyes fixed to finger
- Body of examiner should not cross the midline



5. Trigeminal nerve

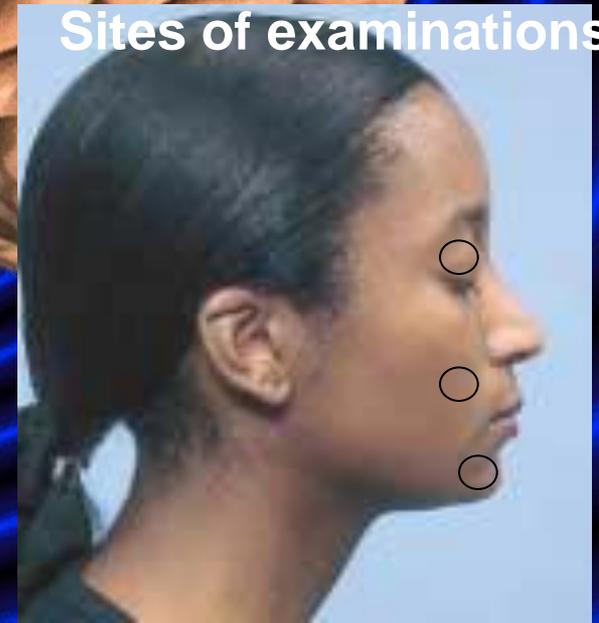
Inspection

- Corneal ulceration
- Dryness of nasal mucosa
- Wasting of muscles
- Herpes zoster

Sensory examination

- Explain what you plan to do
- Test the forehead, cheeks, and jaw for
 - Touch
 - Pain
 - Temperature

Sites of examinations



Motor function examination

- Clenching of teeth
- Jaw movement
- Corneal reflex
- Jaw jerk



PALPATING MASSETER MUSCLES



PALPATING TEMPORAL MUSCLES



Test *the corneal reflex*. Ask the patient to look up and away from you. Approaching from the other side, out of the patient's line of vision, and avoiding the eyelashes, touch the cornea



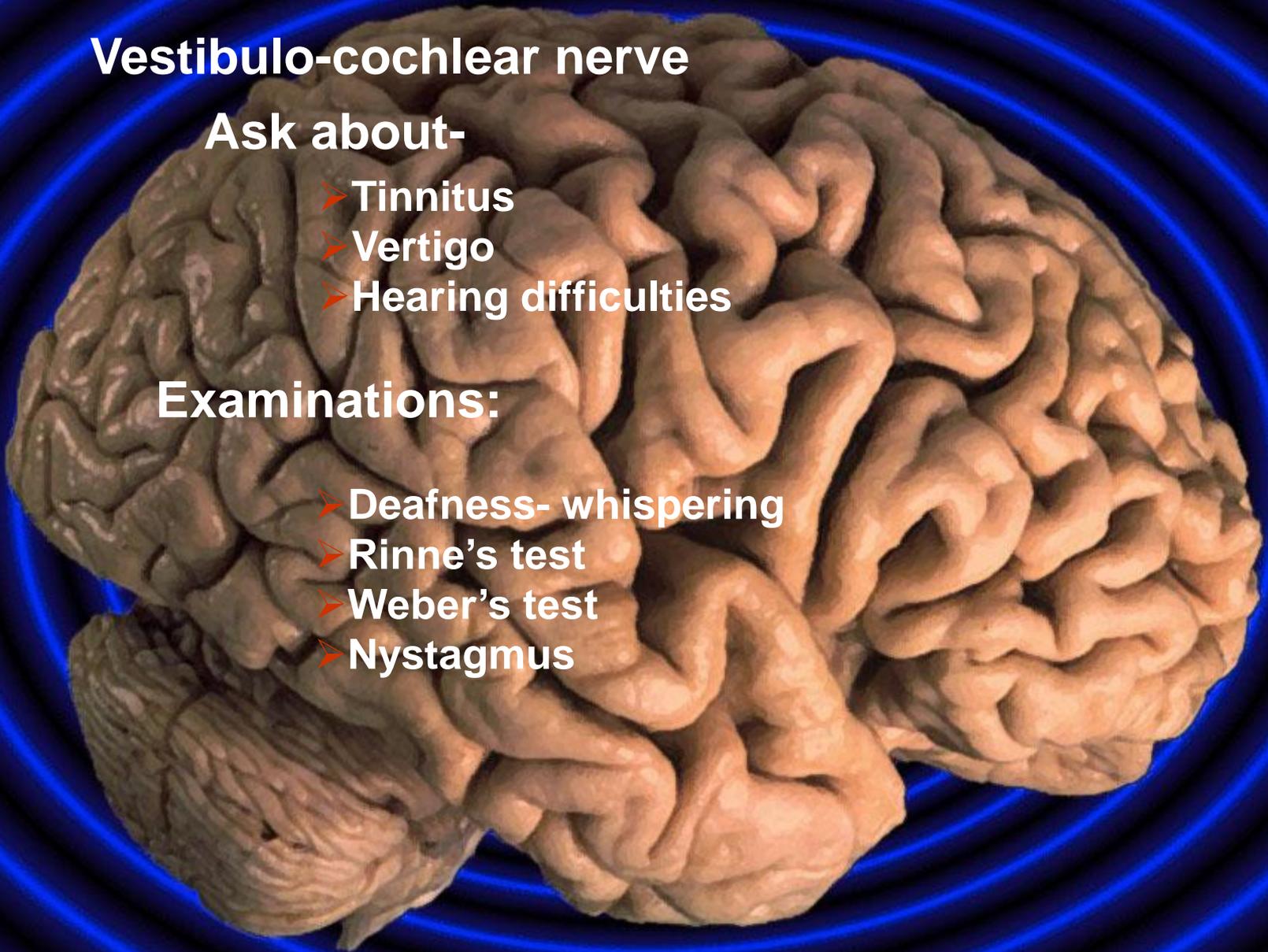
Vestibulo-cochlear nerve

Ask about-

- Tinnitus
- Vertigo
- Hearing difficulties

Examinations:

- Deafness- whispering
- Rinne's test
- Weber's test
- Nystagmus



Facial nerve:

Ask about:

- Taste
- Dribbling of saliva
- Hearing abnormalities

Examinations:

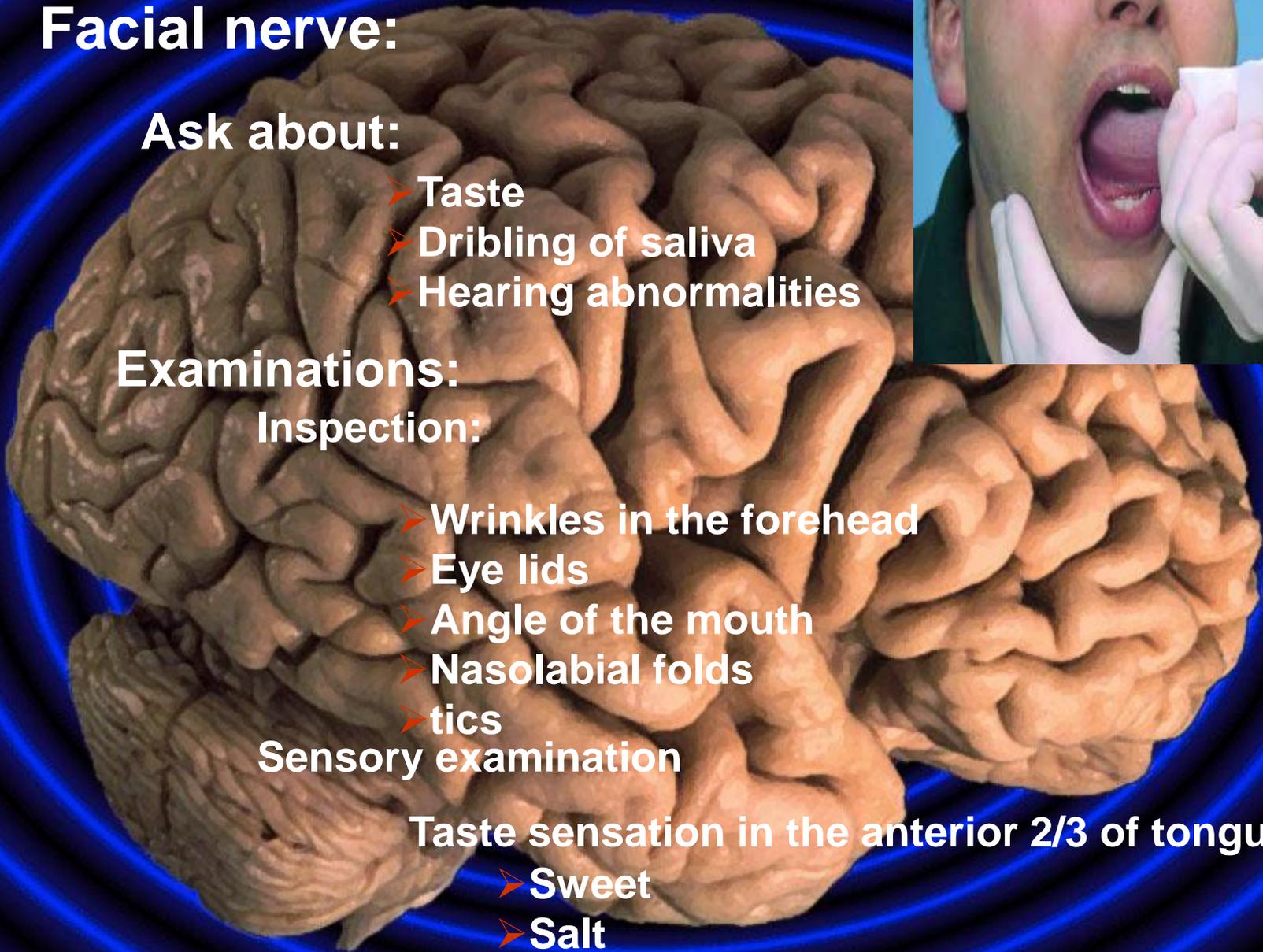
Inspection:

- Wrinkles in the forehead
- Eye lids
- Angle of the mouth
- Nasolabial folds
- tics

Sensory examination

Taste sensation in the anterior 2/3 of tongue

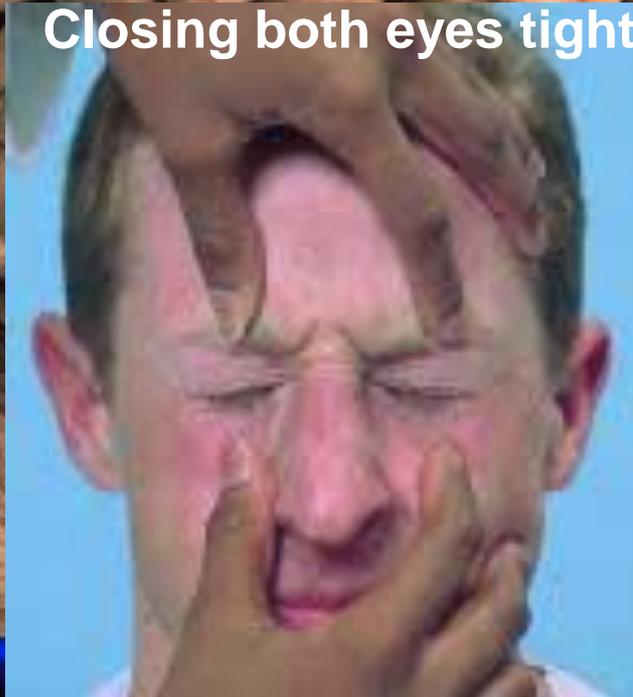
- Sweet
- Salt
- Bitter



Motor nerve examination:

- Forehead- wrinkling
- Close both eyes tightly
- Show both upper and lower teeth
- Smile
- Puff out both cheeks
- Frown

Closing both eyes tightly



Glossopharyngeal and vagus nerves

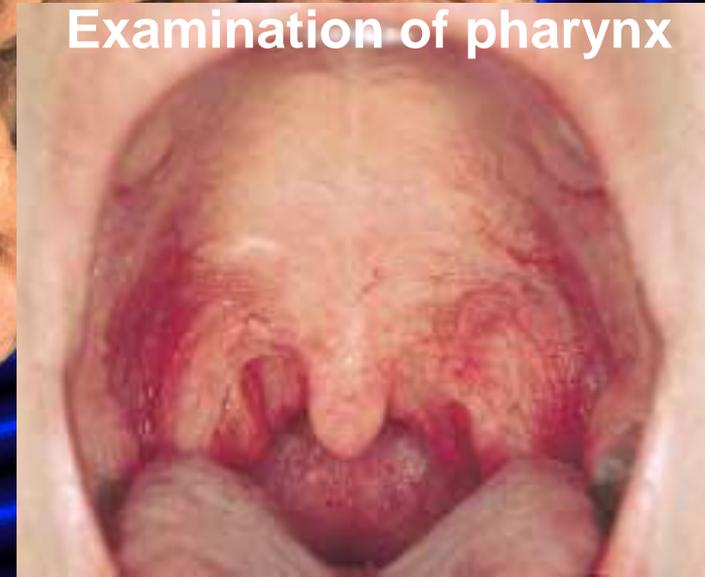
Ask about:

- Nasal voice
- Regurgitation of food during deglutition
- Hoarseness of voice

Examinations:

- Taste sensation- posterior 1/3 of tongue
- Inspect uvular position
- Ask the pt. to say 'Ah' to see- uvular deflection
- Pharyngeal reflex

Examination of pharynx



Accessory nerve

Examinations:

- Inspection: ➤ Atrophy
➤ Fasciculation

Motor nerve examinations:

- Ask the patient to shrug both shoulders upward
- Ask the patient to turn head to each side against your hand



Examination of trapezius



Examination of sterno-mastoid

Hypoglossal nerve

Examinations:

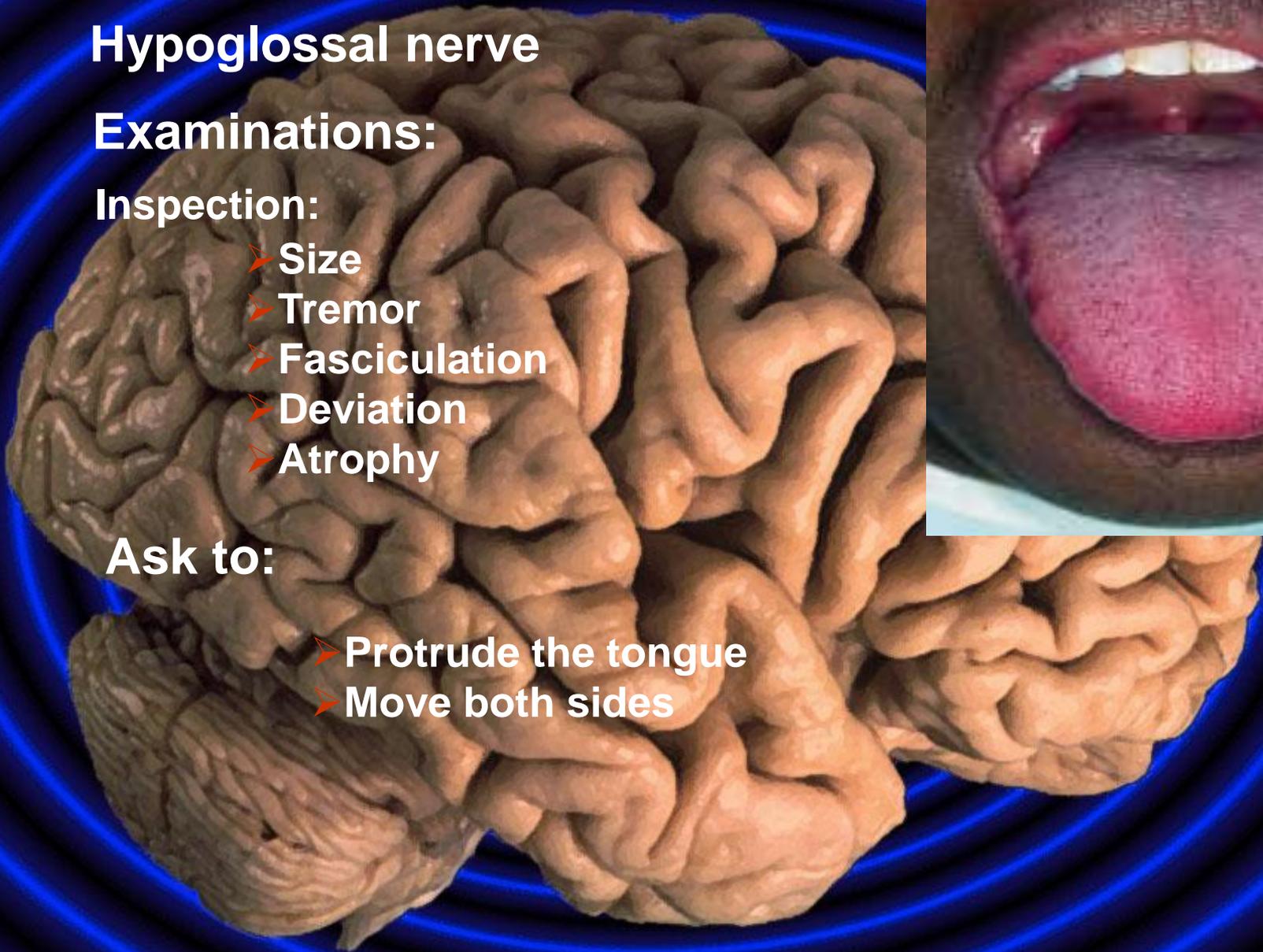
Inspection:

- Size
- Tremor
- Fasciculation
- Deviation
- Atrophy

Ask to:

- Protrude the tongue
- Move both sides

Inspection of tongue



Motor functions

□ The following points to be evaluated during motor system examinations

- Tone
- Power
- Bulk
- Reflexes
 - Superficial
 - Deep
- Co-ordination
- Involuntary movements
- Gait

Motor functions:

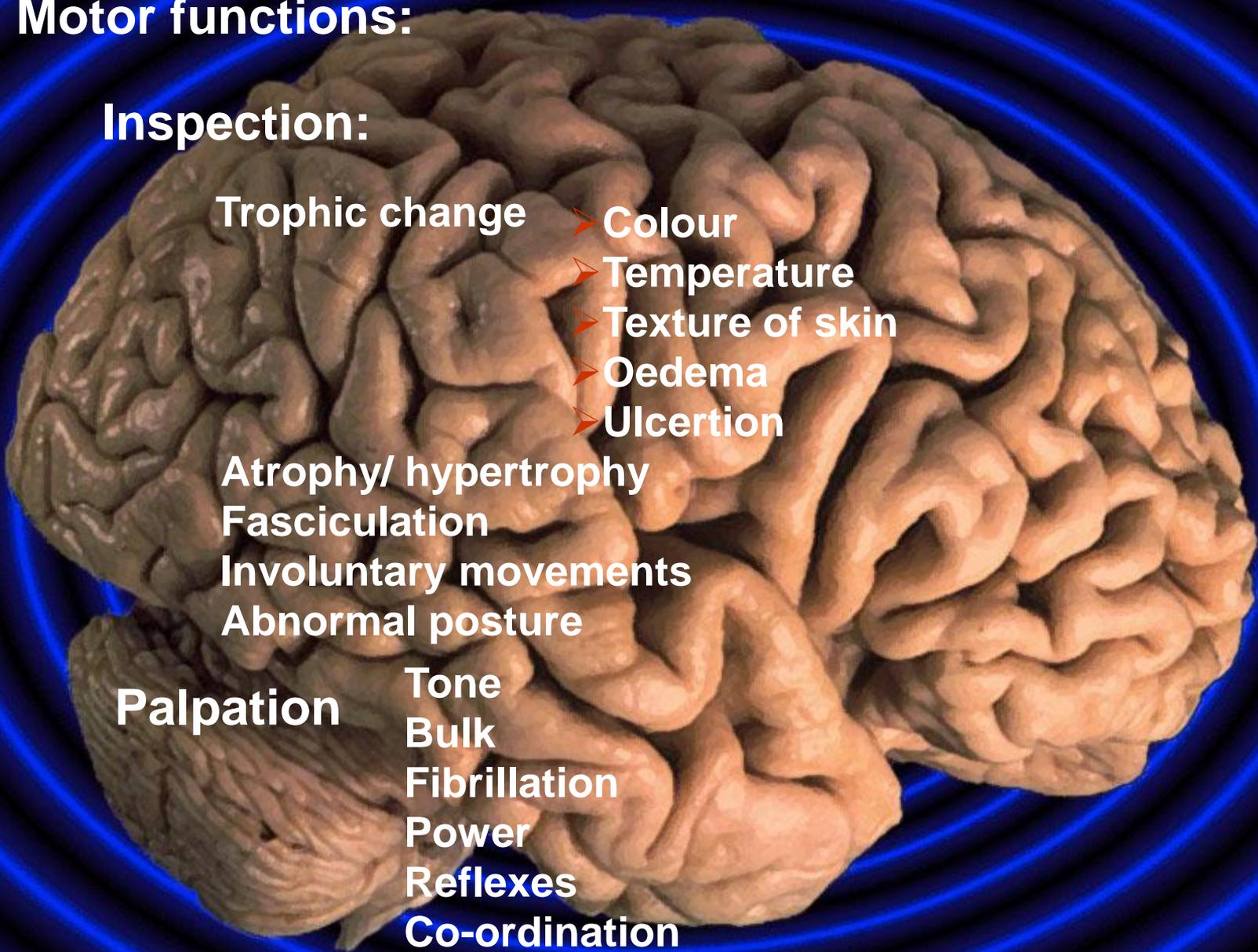
Inspection:

- Trophic change
 - Colour
 - Temperature
 - Texture of skin
 - Oedema
 - Ulceration

- Atrophy/ hypertrophy
- Fasciculation
- Involuntary movements
- Abnormal posture

Palpation

- Tone
- Bulk
- Fibrillation
- Power
- Reflexes
- Co-ordination
- Gait
- Clonus



Test flexion (C5, C6—biceps) and extension (C6, C7, C8—triceps) at the elbow by having the patient pull and push against your hand

Test extension at the wrist (C6, C7, C8- radial nerve) by asking the patient to make a fist and resist your pulling it down.

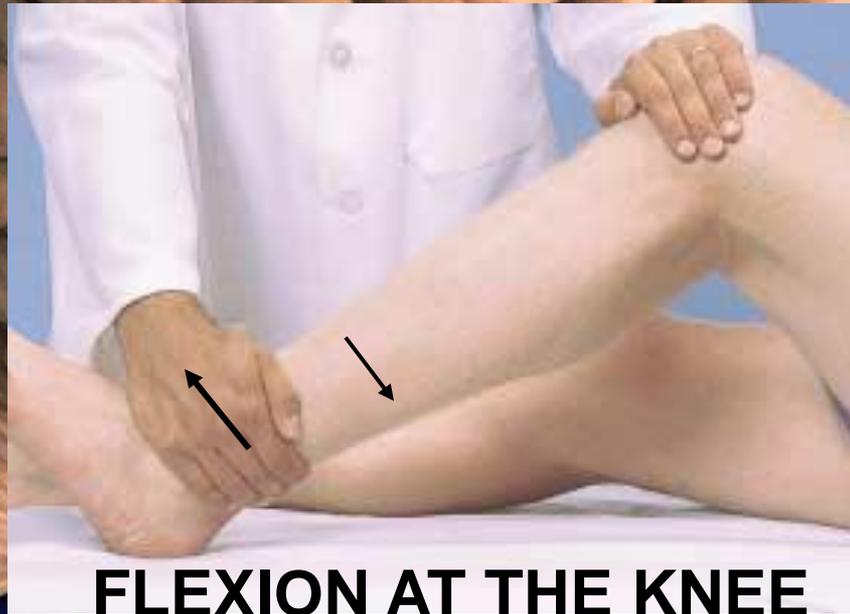




Test flexion at the hip



EXTENSION AT THE KNEE



FLEXION AT THE KNEE



DORSIFLEXION



PLANTAR FLEXION



Examinations of deep reflexes in upper limbs



Examinations of deep reflexes in lower limbs



Plantar reflex examination

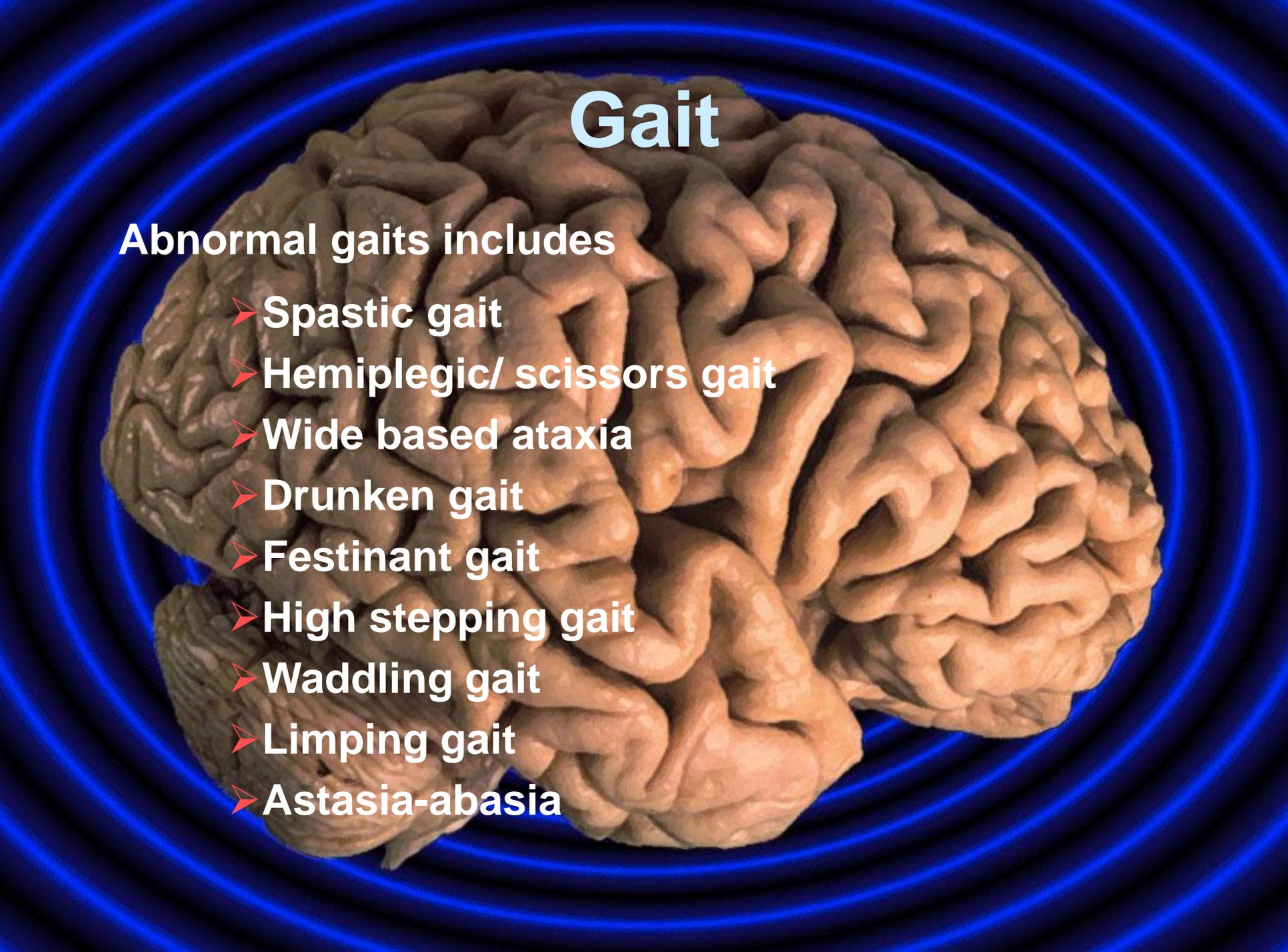


Babinski sign

Ankle clonus examinations



Gait

A human brain is shown from a top-down perspective, centered in the frame. The brain is a light brown color with visible gyri and sulci. Above the brain, the word "Gait" is written in a large, white, sans-serif font. The background consists of several concentric blue circles that create a tunnel-like effect, drawing the eye towards the brain.

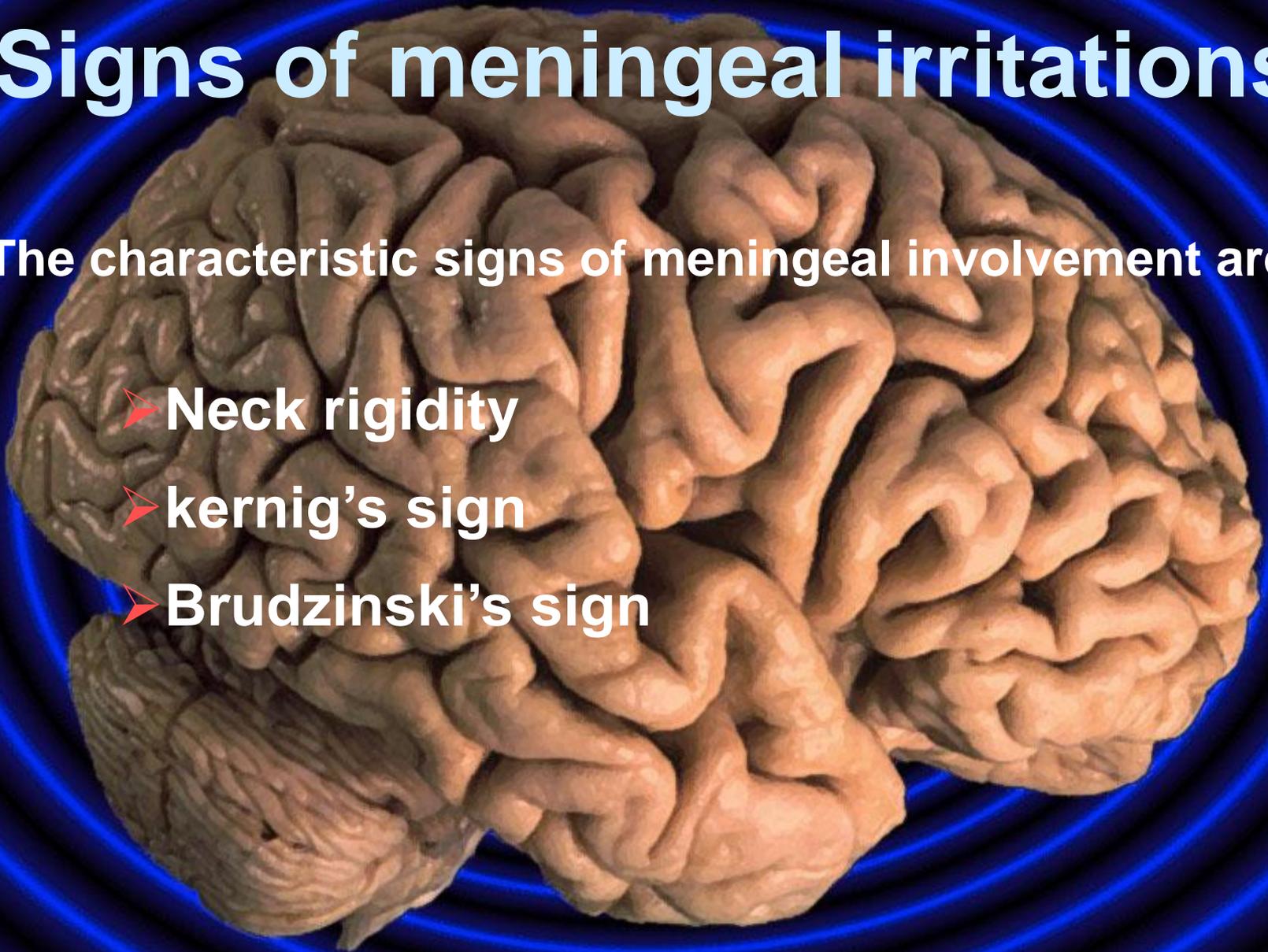
Abnormal gaits includes

- **Spastic gait**
- **Hemiplegic/ scissors gait**
- **Wide based ataxia**
- **Drunken gait**
- **Festinant gait**
- **High stepping gait**
- **Waddling gait**
- **Limping gait**
- **Astasia-abasia**

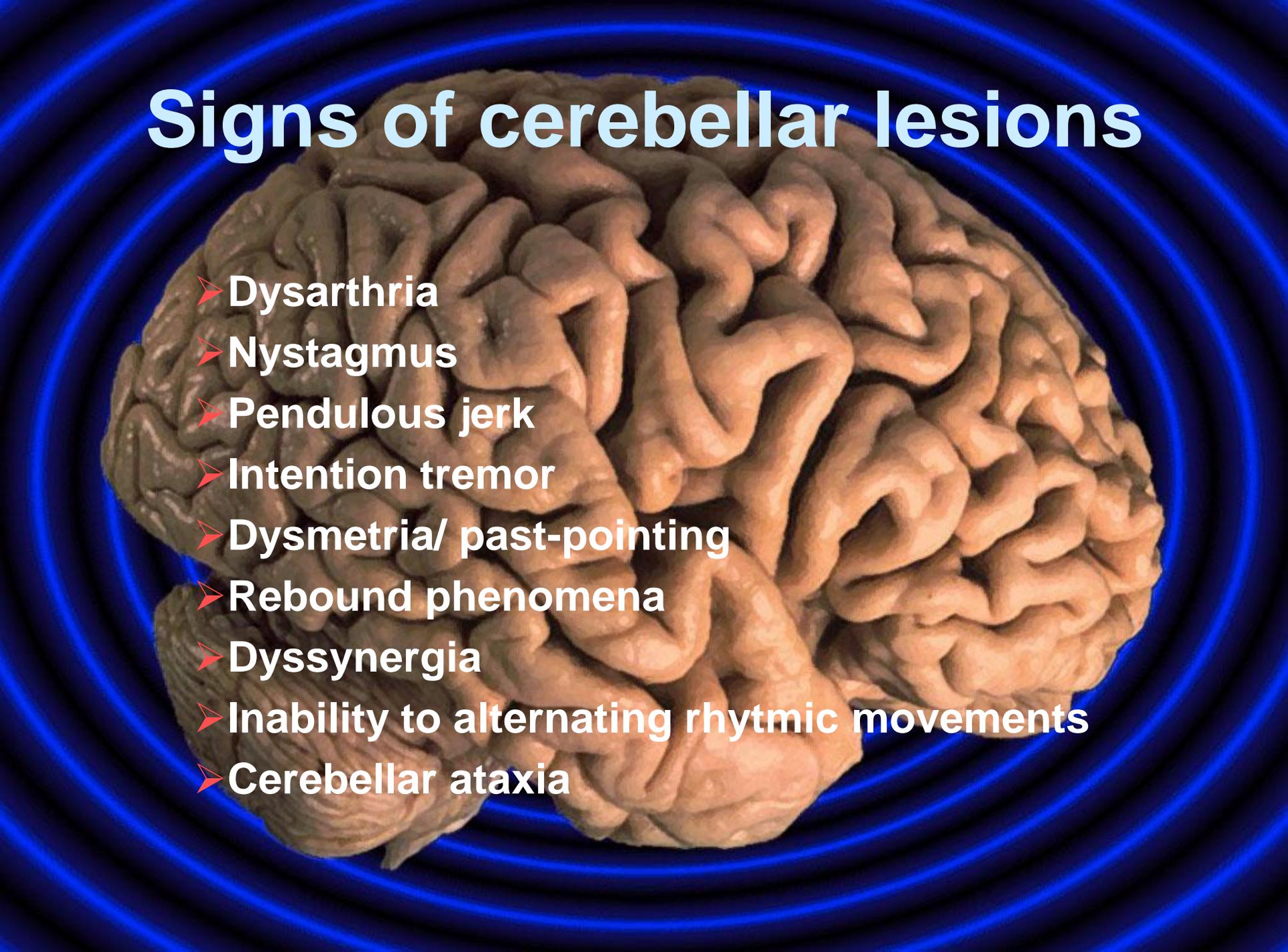
Signs of meningeal irritations

□ The characteristic signs of meningeal involvement are

- Neck rigidity
- kernig's sign
- Brudzinski's sign



Signs of cerebellar lesions

A human brain is shown from a top-down perspective, centered in the frame. The brain is a light brown color with a highly convoluted, wrinkled surface. It is set against a dark blue background that features several concentric, glowing blue circles that create a ripple effect around the brain. Overlaid on the left side of the brain is a list of nine signs of cerebellar lesions, each preceded by a red arrowhead symbol.

- Dysarthria
- Nystagmus
- Pendulous jerk
- Intention tremor
- Dysmetria/ past-pointing
- Rebound phenomena
- Dyssynergia
- Inability to alternating rhythmic movements
- Cerebellar ataxia

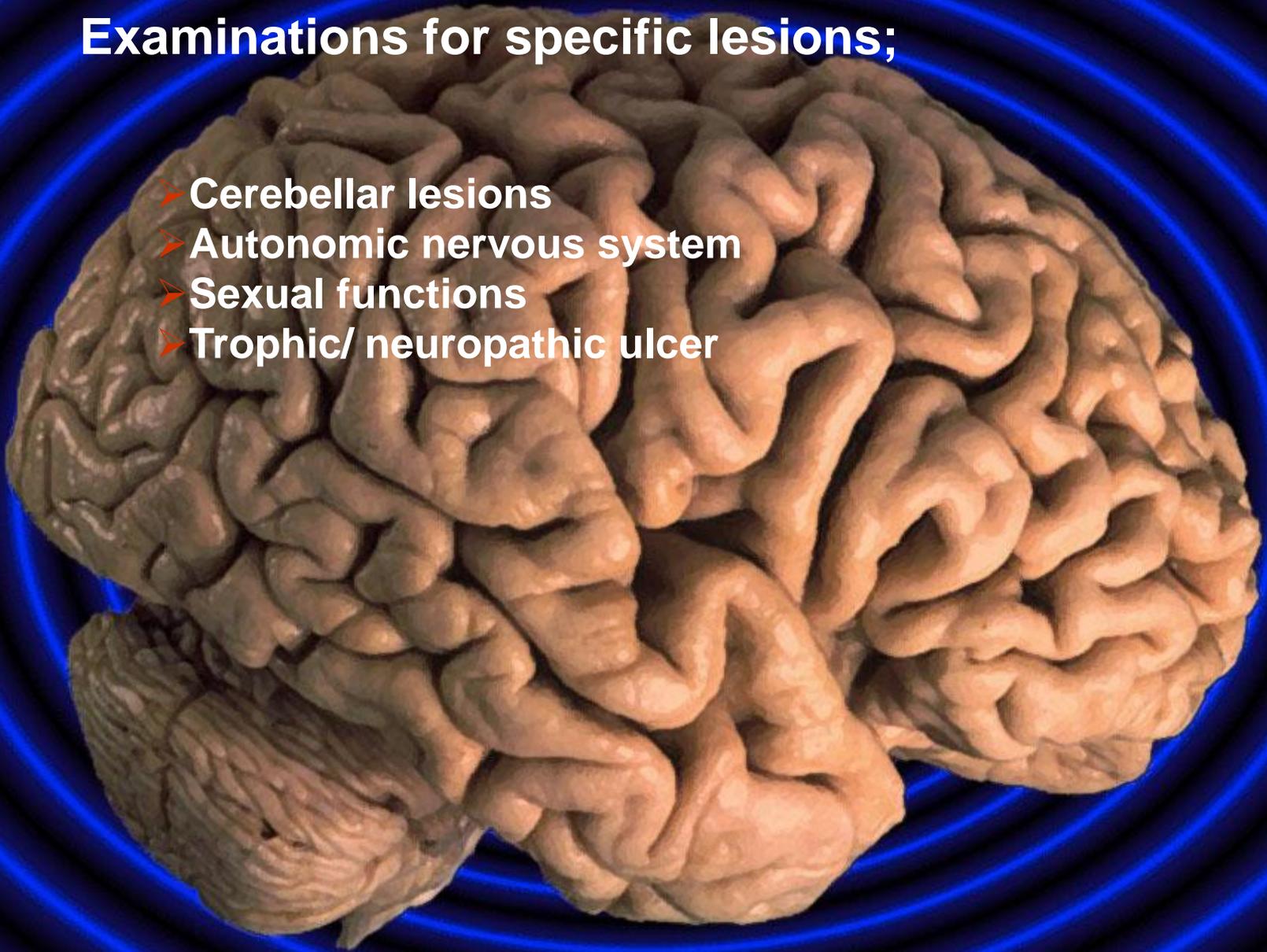
Sensory functions:

- Touch
- Temperature
- Pain
- Sense of position
- Sense of vibration
- Stereognosis
- Tactile discrimination



Examinations for specific lesions;

- Cerebellar lesions
- Autonomic nervous system
- Sexual functions
- Trophic/ neuropathic ulcer



Acknowledgements

- ❖ Bangladesh society of Medicine
- ❖ Organizers of the committee
- ❖ Dr. Monzurul Hasan Chowdhury
- ❖ Dr. Md. Shafiqul Bari
- ❖ Dr. Md. Jahangir Alam
- ❖ Dr. Md. Ziaus Shams



A human brain is shown from a top-down perspective, centered in the frame. The brain is a light brown color with a highly textured, wrinkled surface. It is surrounded by a series of concentric blue circles that create a ripple effect, suggesting a signal or a thought. The text "Thank you all" is written in a bold, white, sans-serif font across the middle of the brain.

Thank you all