

CEREBELLAR DYSFUNCTION

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FACTS TO REMEMBER

- Cerebellum or a little brain acts like younger sibling of the large cerebrum.
- It control tone, posture, equilibrium and fine movements of the body. It cannot initiate the movement.
- Its is connected by cerebellar peduncle (inferiorly, middelly and superiorly).
- Number of the neurons is about half of the cerebrum, though is much smaller than the cerebrum.
- Its structure is uniform through out, i.e. **homotypical**.
- Its control is **ipsilateral**.

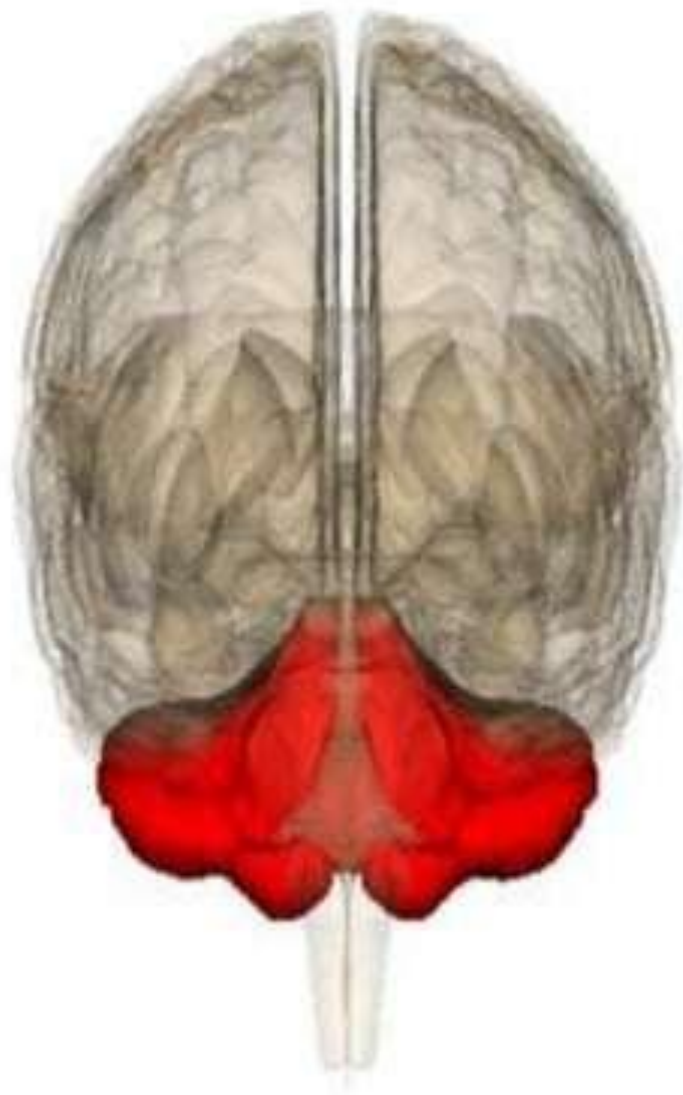
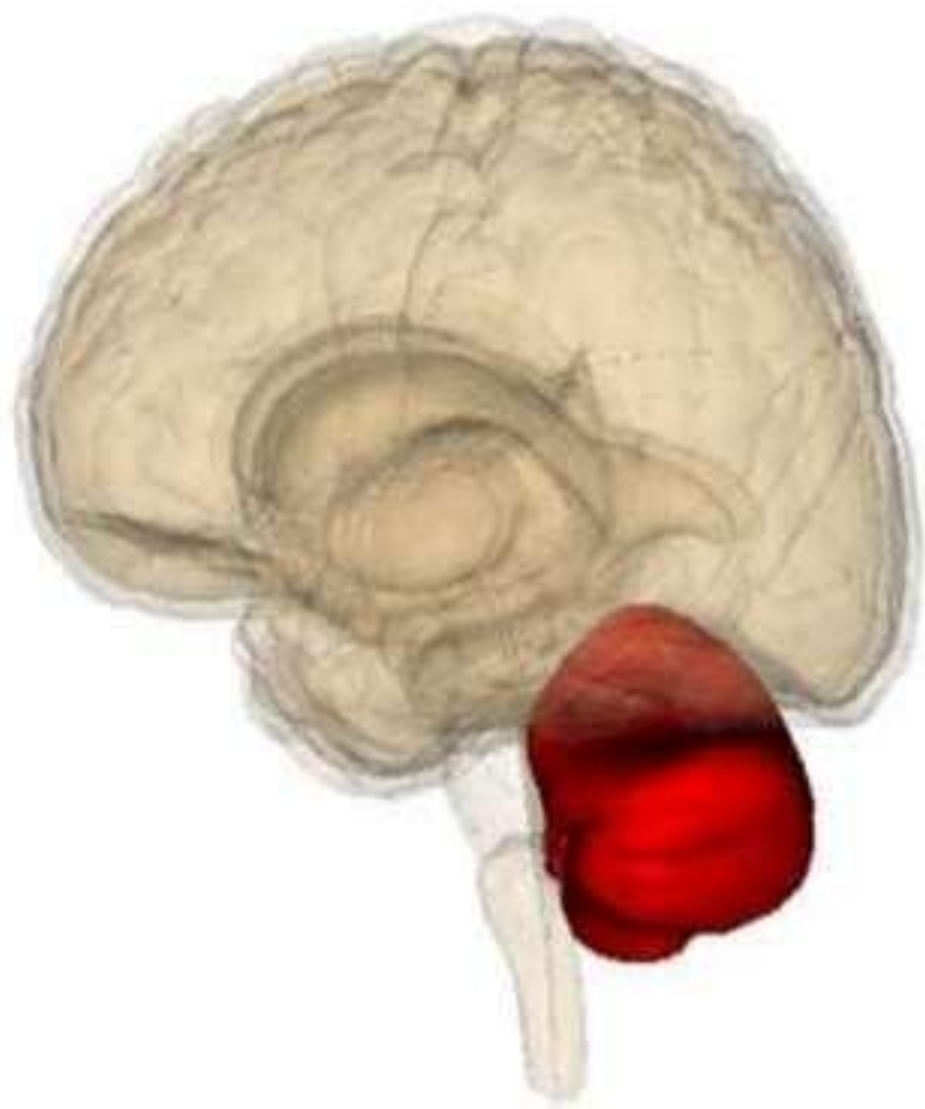
ANATOMICAL LOBES AND FUNCTIONAL LOBES

- Anterior (spinocerebellum) lobe: control axial (trunk), limb muscles and postural reflexes.
- Posterior (neocerebellum) lobe: control skilled voluntary muscles.
- Flocculonodular lobe: (related to vestibular apparatus) control body posture balance, equilibrium and maintaining visual fixation.

CEREBELLAR DYSFUNCTION: ATAXIA

➤ What is ataxia ?

- It is a disorder that occurs when cerebellum is inflamed(cerebellitis) or damaged.
- Lack of the muscle coordinations.
- Affect the control of muscles: walking or picking, effect in upper limb, lower limb and all voluntary muscles.
- Ataxia can effects the various movements.



CAUSES OF ATAXIA

- Damage, degeneration or loss of nerve cells in the part of cerebellum.
- Destroy the part of the brain(cerebellum) that controls muscle coordinations.
- Caused by cerebellar lesionor(localised) and vermis lession(effect both side).

[Note: common cause is thrombosis, tumor and injuries]



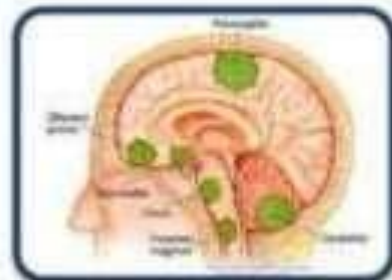
Viruses : like chickenpox ,epestein-barr, coxsackie viruses.



Bacterial infection :Lyme disease



Alcohol



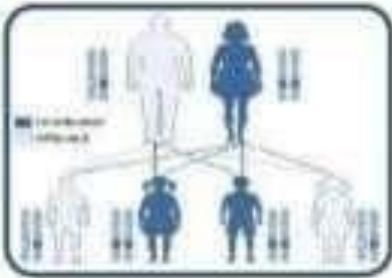
Brain tumors



Head trauma.



Bleeding in the cerebellum.

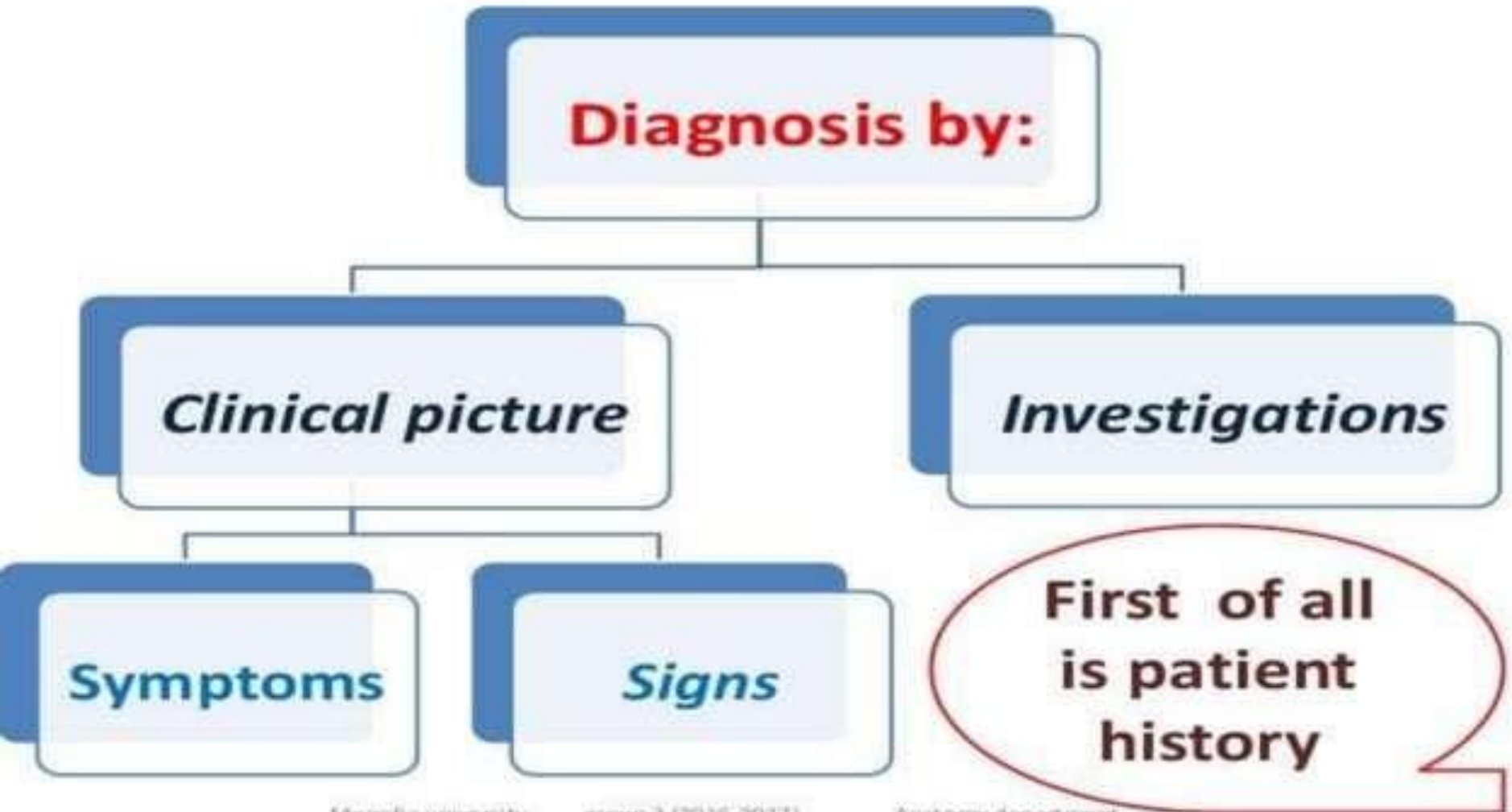


Inherited or congenital.



Exposure to mercury, lead & other toxins.

DIAGNOSIS



Symptoms



Impaired coordination in the torso or arms & legs (steady gait, drunken gait)



Vocal changes.



headaches ,dizziness.



Faintness



slurred speech.

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Vertigo



Vomiting



Nausea



Falls



**Uncontrolled or repetitive eye
movments**

CLINICALLY SYMPTOMS (ATAXIA EFFECTS)

- Ataxia effects the various movements.
- Poor coordination : eg, Movement of upper limb



➤ Unsteady walk

- People with a chronically unsteady gait often have a wide stance when walking. They may walk slowly and exhibit caution when walking.



Cerebellar ataxia



Ataxic gait and position:
Left cerebellar hemisphere

- a. Sways to the right standing position
- b. Steady on the right leg
- c. Unsteady on the left leg
- d. ataxic gait



➤ Nystagmus

- To and fro oscillatory movements of the eyeballs while looking to either side.



See-Saw Nystagmus

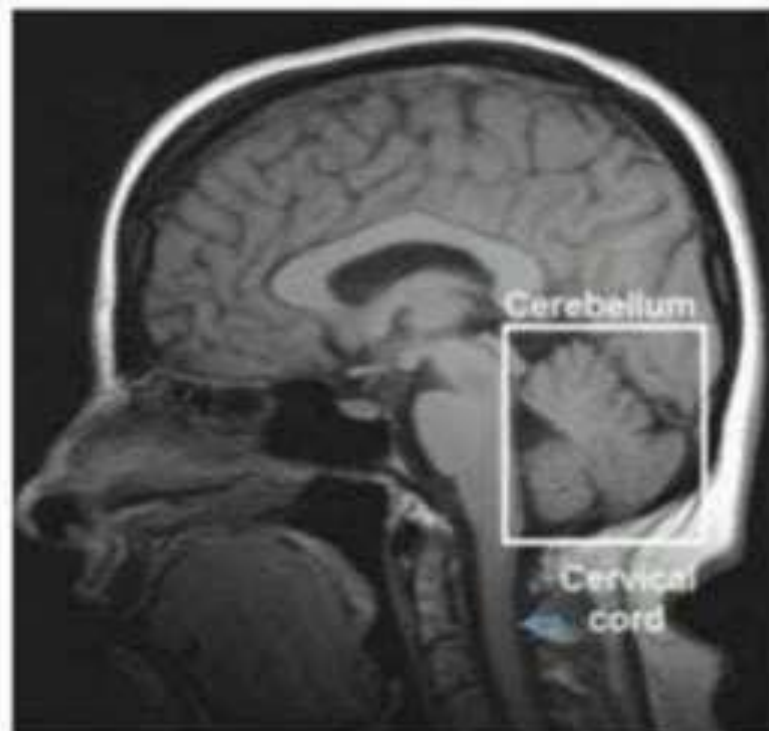
As seen on Roed Behbehani's YouTube Channel



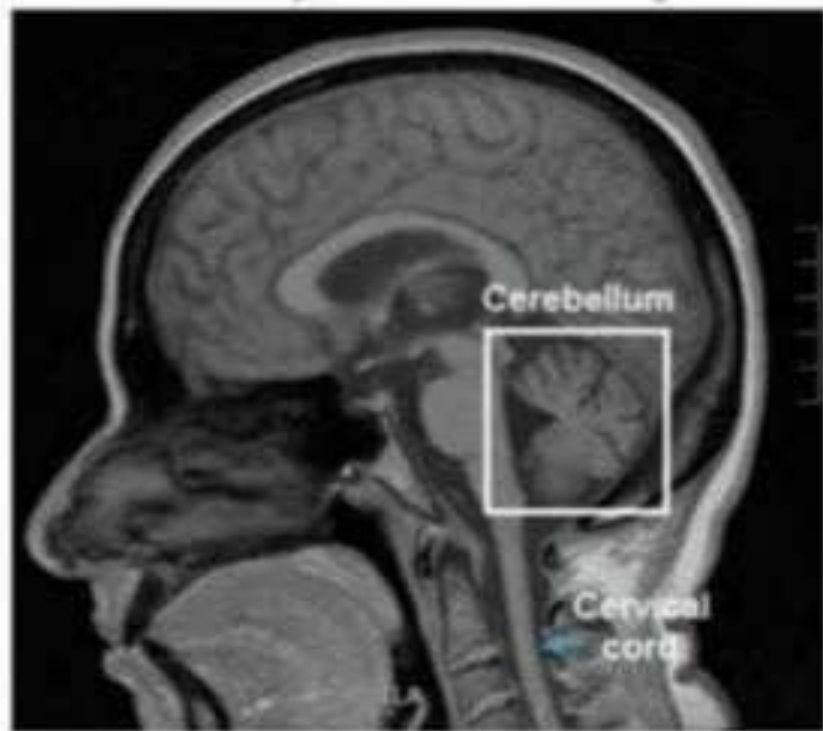
INVESTIGATIONS

4. CT or MRI scan

Control



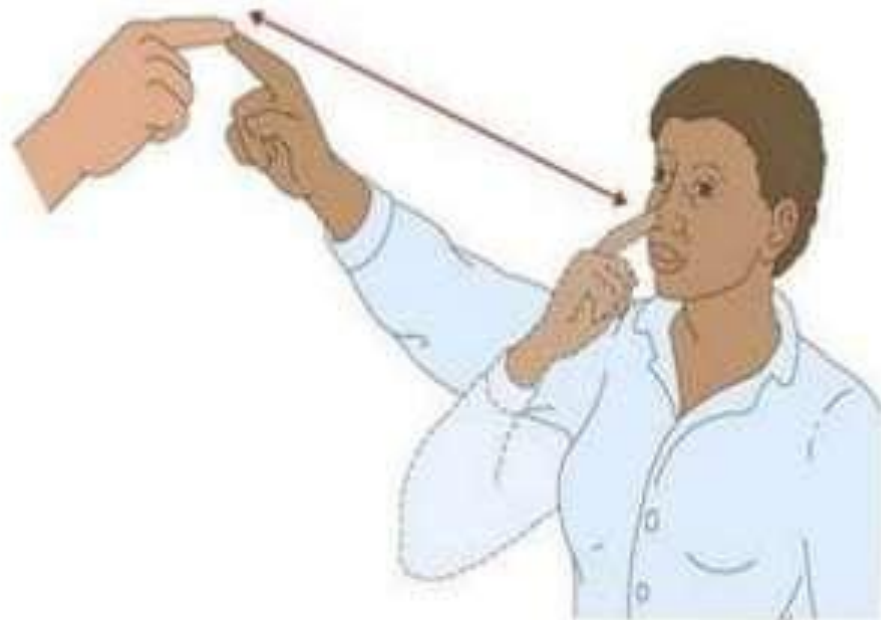
Index patient in Family R



CLINICAL TEST

➤ Upper limb

- Finger nose test
- Diadokokinesia



Tests .

The collage contains several elements: a video frame showing a person in a yellow shirt performing a finger-to-nose test; anatomical diagrams illustrating hand and wrist movements; a photograph of a person's legs being tested for coordination; and a small table with three columns and three rows of diagrams.

Test 1	Test 2	Test 3

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CLINICAL TEST

➤ Lower limb

- Rombergs test



TREATMENT

- ✓ Ataxia is generally **not curable** but we can just ease the symptoms to make the patients life better.

[http://puhuahospital.com/case-studies/ataxia/omar?gclid=Cj0KCQjwsvrpBRCsARIsAKBR_0JKxSec95R6Mkl5cvlEwjzPiobM_S8-qXaNQjFCqdNVA6KnMdUn4E8aAmfXEALw_wcB]

1.adaptation (life style)

Walking cane



wheelchair



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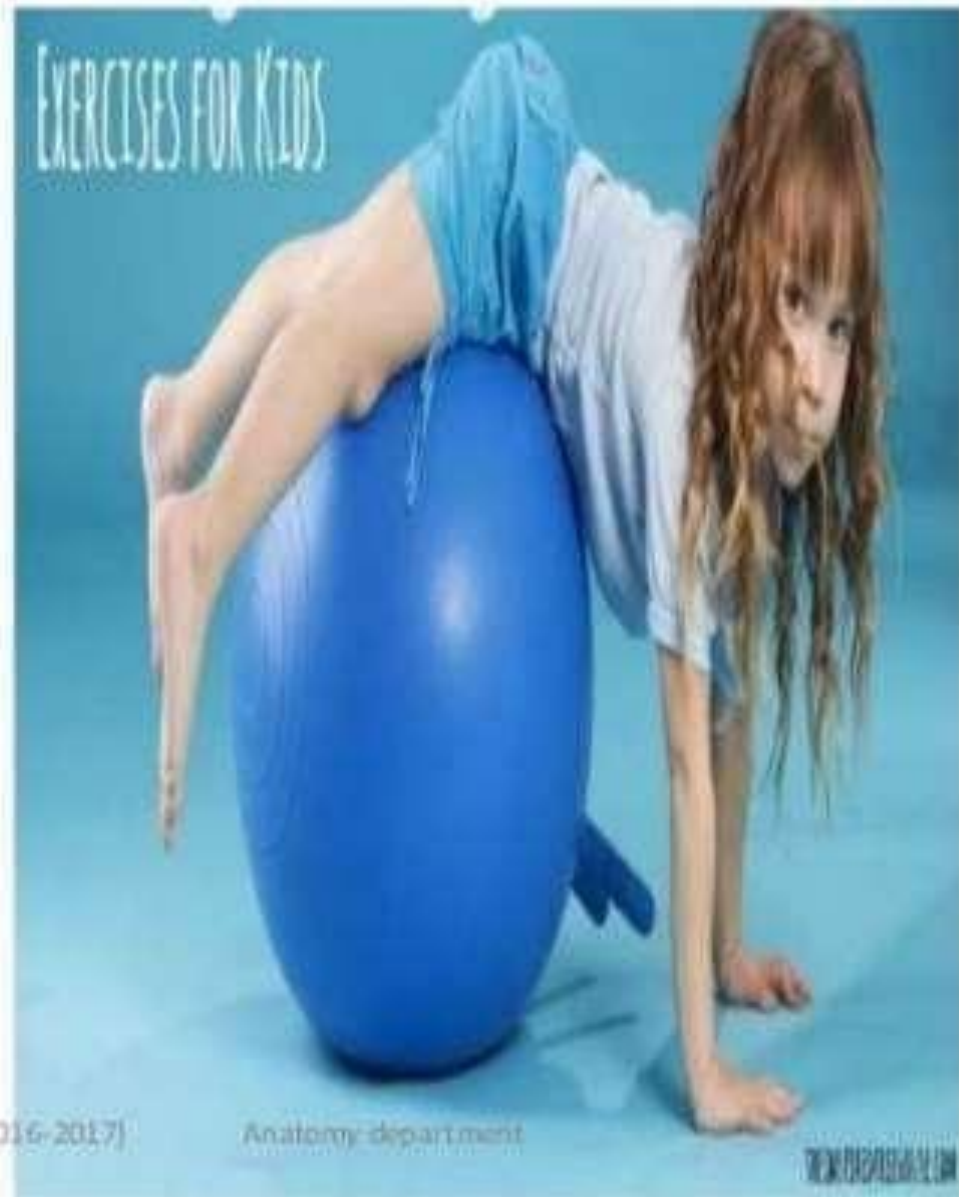
Special diet



Anatomy department

2. Physical therapy:

To strengthen the muscle
to improve the
movement ,tremor



3. speech therapy

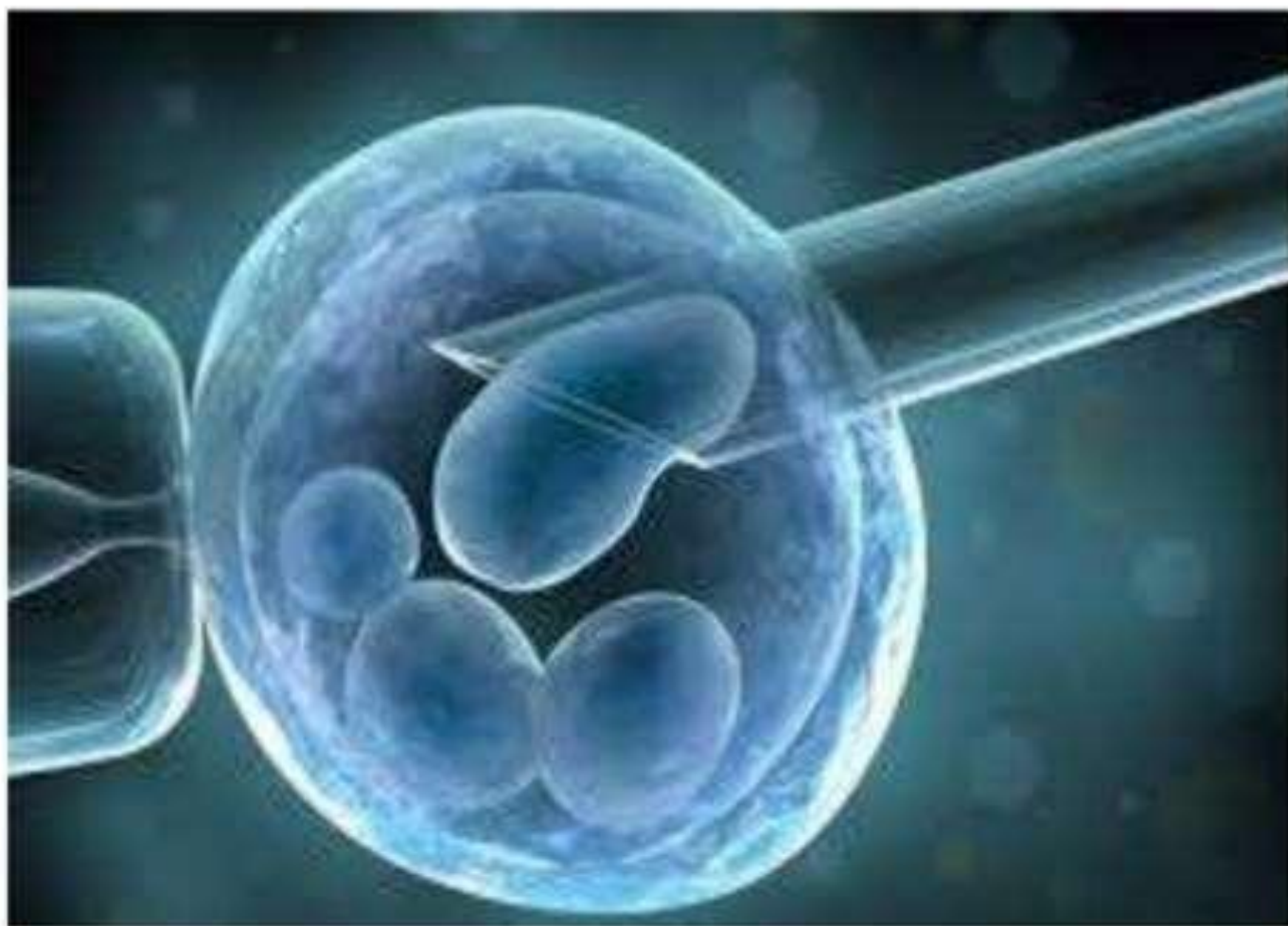


4. psychology:

The patient often suffers from depression, sleep problems, so he needs a psychologist.



5. Stem cell surgery in china

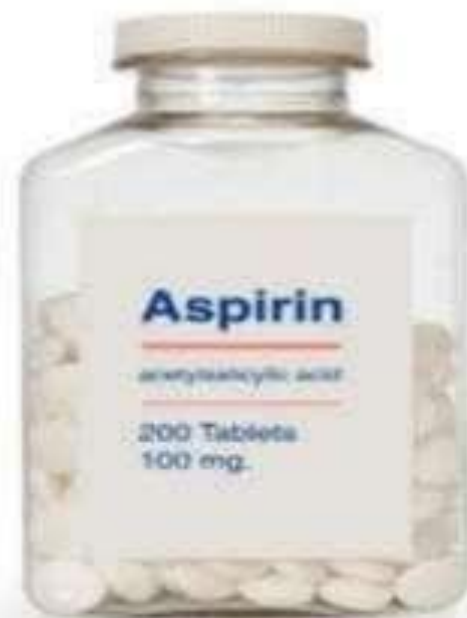


6.Treat the cause

In case of infection



In case of stroke





Thank you!