

#DIBS BY NEXTILLO

DAILY INFORMATION BULLETIN SERVICE

CIRCUMVENTRICULAR ORGANS (CVO)





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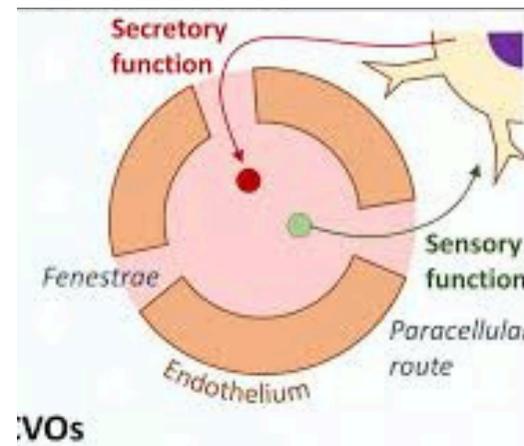
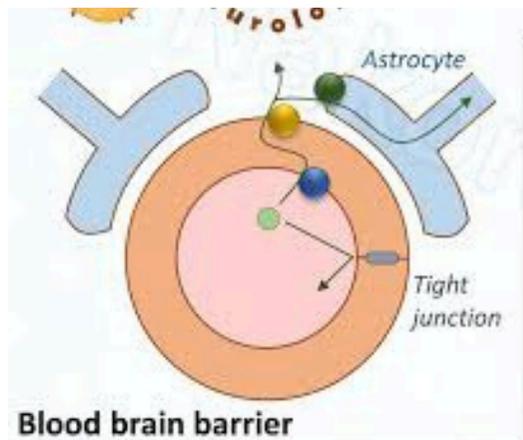
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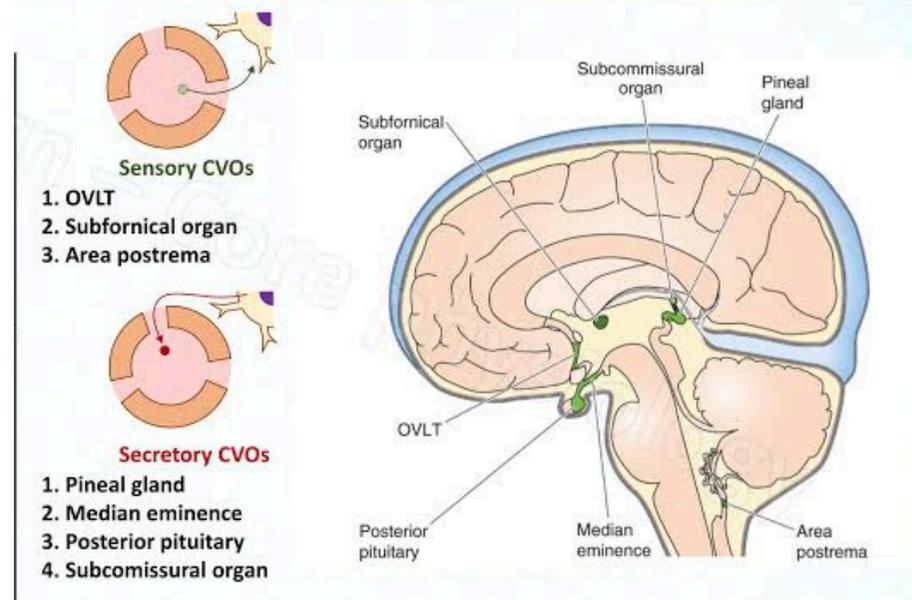
Understanding Circumventricular Organs (CVO) is essential for grasping their unique role in the brain, characterized by their permeable nature and distinct functions.



VISUAL REPRESENTATION



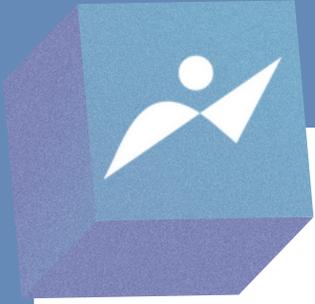
Circumventricular organ





OVERVIEW

- **Definition and Location:** CVOs are specialized structures located at certain points around the ventricles in the brain.
- **They lack the typical blood-brain barrier, allowing direct interaction with circulating substances in the blood.**
- **Permeability and Capillaries:** CVOs have fenestrated capillaries, making them more permeable. This allows for direct sensing of various substances in the bloodstream, including hormones and immune signals.
- **Functional Significance:** CVOs play a crucial role in monitoring and responding to changes in the body's internal environment.
- **They act as sensory interfaces between the neural and systemic compartments.**



KEY CIRCUMVENTRICULAR ORGANS

- ***Pineal Gland: Located at the posterior end of the third ventricle.***
- ***Produces melatonin, influencing circadian rhythms and sleep-wake cycles.***
- ***Area Postrema: Positioned on the floor of the fourth ventricle.***
- ***Functions as a chemoreceptor trigger zone, inducing vomiting in response to toxins.***
- ***Subfornical Organ (SFO): Located near the fornix and third ventricle.***
- ***Involved in regulating thirst and fluid balance by sensing changes in blood osmolality.***



MCQ

QUESTION

Which circumventricular organ is involved in regulating thirst and fluid balance?

Pineal Gland

Area Postrema

Subfornical Organ

Hypothalamus

MCQ ANSWER: 3. Subfornical Organ

