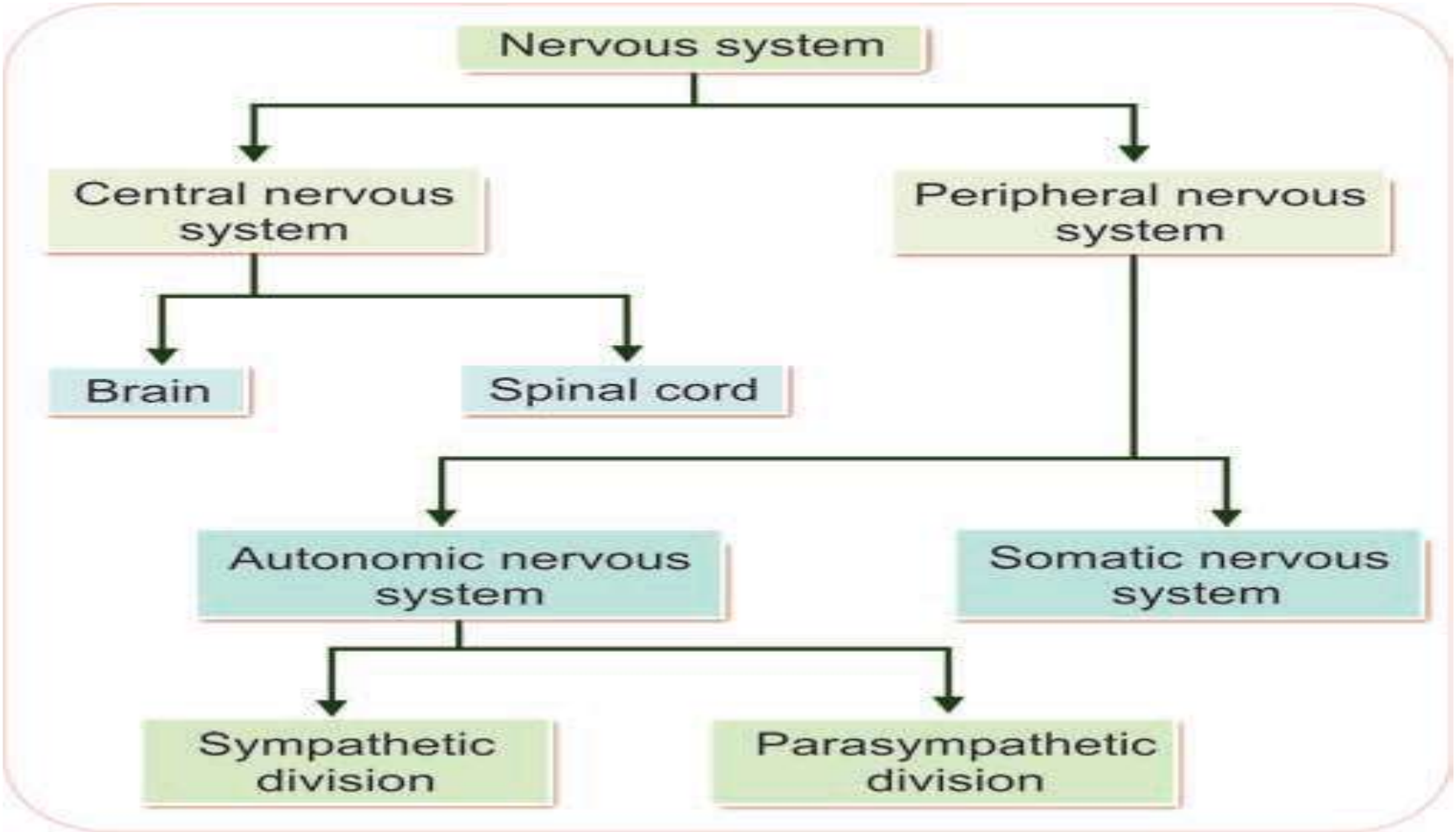
CNS

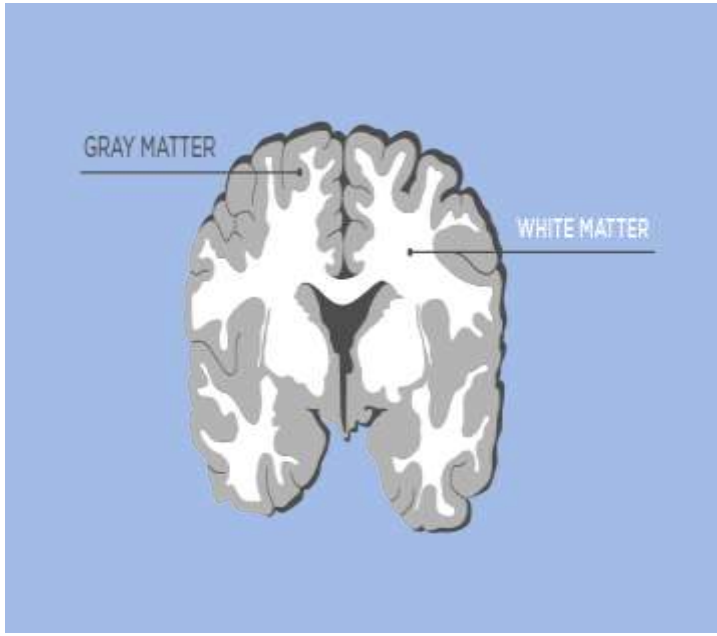
INTRODUCTION

- Nervous system controls all the activities of the body.
- The nervous system detects and responds to changes inside and outside the body.
- Together with the endocrine system it controls important aspects of body function and maintains homeostasis.
- Nervous system stimulation provides an immediate response while endocrine activity is, in the main, slower and more prolonged.

ORGANIZATION OF NERVOUS SYSTEM

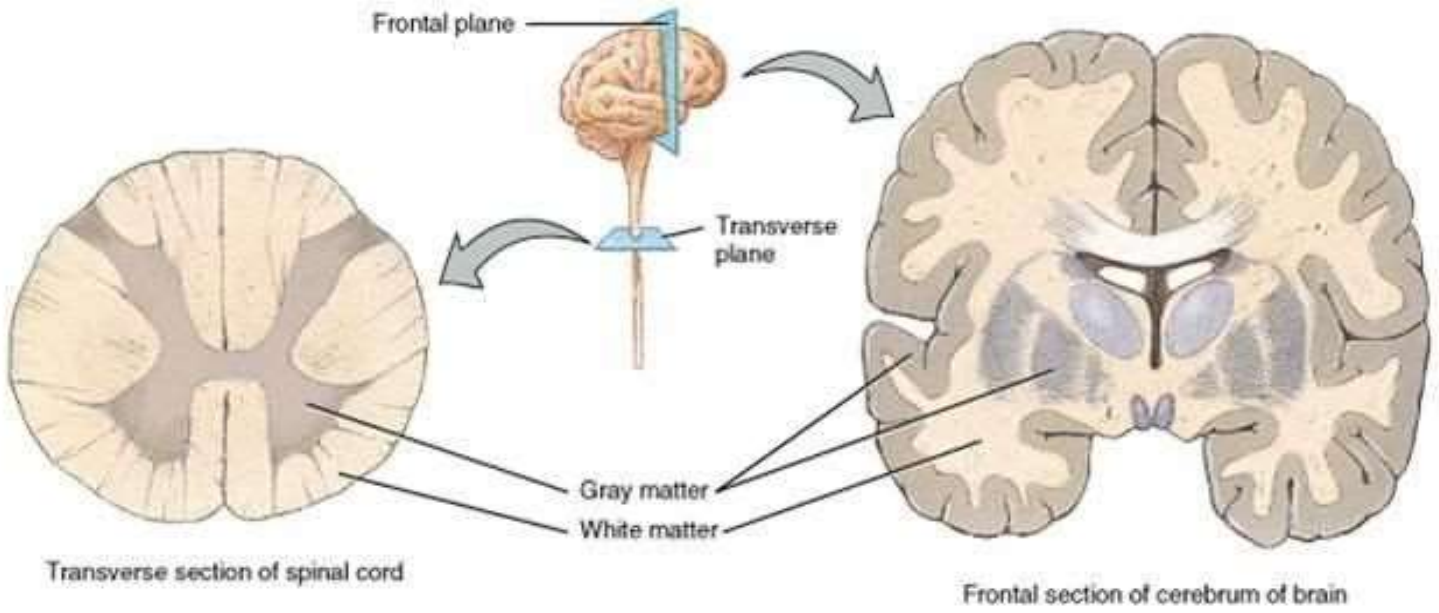


CNS



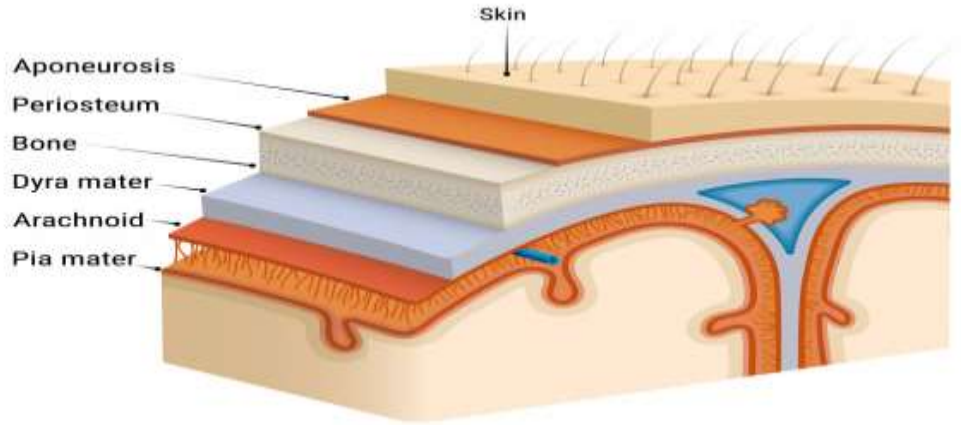
- Central nervous system (CNS) includes **brain** and **spinal cord.**
- It is formed by **neurons** and supporting cells called **neuroglia.**
- Structures of brain and spinal cord are arranged in two layers, namely **gray matter** and **white matter.**
- Gray matter is formed by nerve cell bodies and the proximal parts of nerve fibers, arising from nerve cell body.
- White matter is formed by remaining parts of nerve fibers.

- In brain, white matter is placed in the inner part and gray matter is placed in the outer part.
- In spinal cord, white matter is in the outer part and gray matter is in the inner part.
- Brain is situated in the **skull.**
- It is continued as spinal cord in the **vertebral canal** through the **foramen magnum** of the skull bone.



➢Brain and spinal cord are surrounded by three layers of **meninges.**

- The outer **dura mater,**
- Middle **arachnoid mater** and
- Inner **pia mater**.



➢The space between arachnoid mater and pia mater is known as **subarachnoid space.**

➢This space is filled with a fluid called cerebrospinal fluid.

➢Brain and spinal cord are actually suspended in the **cerebrospinal fluid.**

PARTS OF THE BRAIN