

Autonomic Nervous System Learning Outcomes

As a result of study the theory and related practical class on the autonomic nervous system you should be able to:

1. Describe the basic structural elements of the autonomic nervous system.
2. Understand the consequences of increased activity in the sympathetic division of the autonomic nervous system.
3. Appreciate the physiological consequences of increased activity in the parasympathetic division of the autonomic nervous system.
4. Describe the structural features of both the preganglionic and postganglionic neurones of the sympathetic division of the autonomic nervous system.
5. Understand the structural features of preganglionic and postganglionic neurones of the parasympathetic division of the autonomic nervous system.
6. Name the neurotransmitters and class of neurotransmitter receptor associated with preganglionic and postganglionic neurones of both the sympathetic and parasympathetic divisions of the autonomic nervous system.
7. Know the subclass of adrenergic receptor located on cardiac muscle and bronchial smooth muscle and the physiological consequence of activation of these.
8. Name the subclass of muscarinic receptors found on cardiac muscle cells and the smooth muscle cells of the digestive tract and the physiological consequence of activation of these.
9. Explain the concepts of dual innervation and autonomic tone with reference to at least one organ.
10. Understand the difference between antagonistic and cooperative effects in relation to the functional organisation of the autonomic nervous system.
11. Appreciate that some structures are innervated by only the sympathetic division of the autonomic nervous system.
12. Describe the structural and functional organisation of the adrenal medulla.
13. Understand that the autonomic nervous system is controlled by autonomic reflexes and autonomic control centres.
14. Describe the structural and functional aspects of the pupillary and voiding reflex.
15. Explain what is meant by the terms muscarinic receptor agonist and antagonist and be able to name at least one example of each.
16. Explain the difference between adrenergic receptor agonists and antagonists and be able to name at least one example of each.