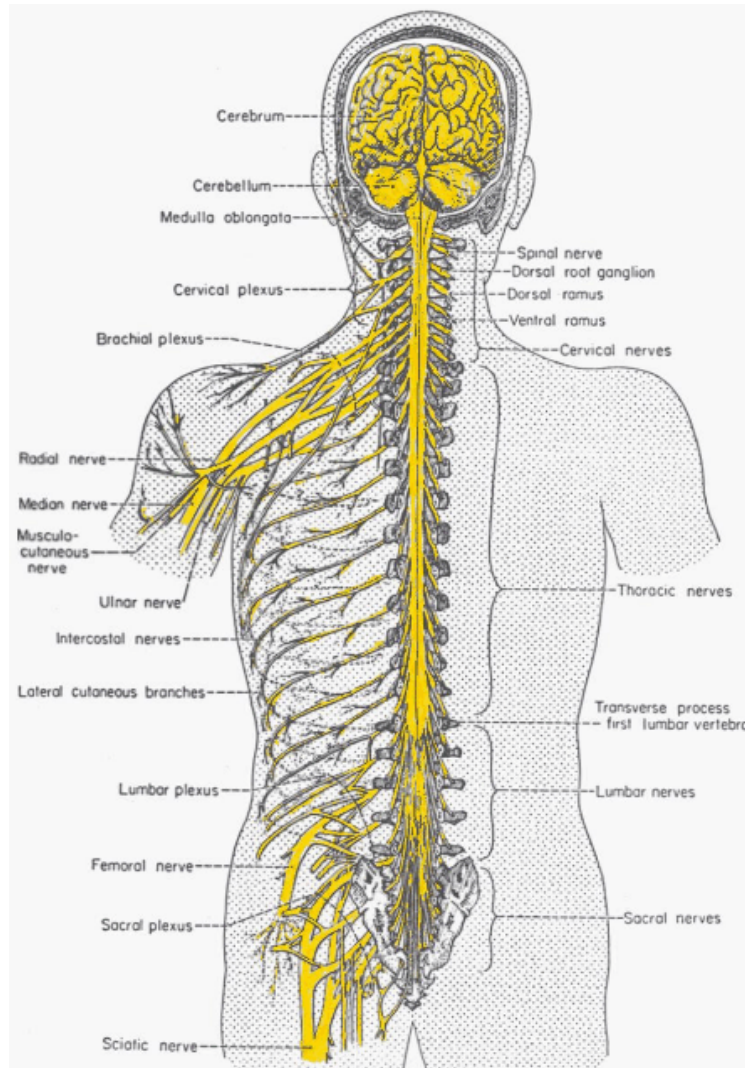


Neuroanatomy at UWO

Anatomy 9535b. PERIPHERAL NERVOUS SYSTEM



CERVICAL  
NERVES

**C1 – C8**

Only 7  
cervical  
vertebrae!

C1 to C7 exit ABOVE the  
corresponding vertebrae.

THORACIC  
NERVES

**T1 – T12**

C8 and all  
other  
spinal  
nerves

LUMBAR  
NERVES

**L1 – L5**

pass  
through  
foramina

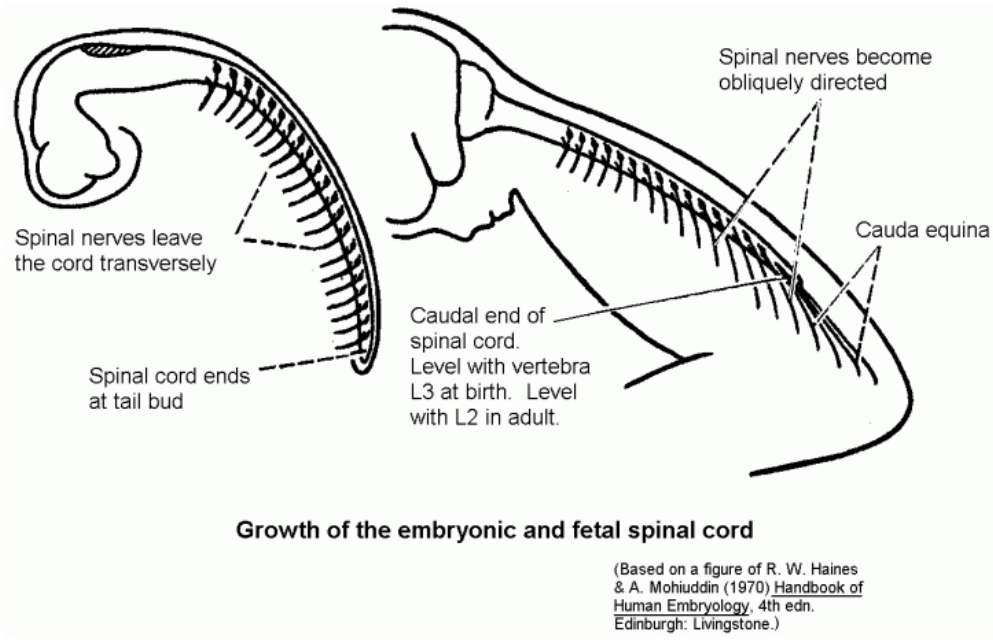
SACRAL  
NERVES

**S1 – S5**

BELOW  
the

corresponding  
vertebrae.

COCCYGEAL  
NERVE



Oblique course of nerve roots in spinal canal.

In the human adult, the caudal tip of the spinal cord (conus medullaris) is level with the body of vertebra L2.

## FUNCTIONAL TYPES OF NERVE FIBRES

Nerve fibre = Axon + Myelin sheath  
(if present)



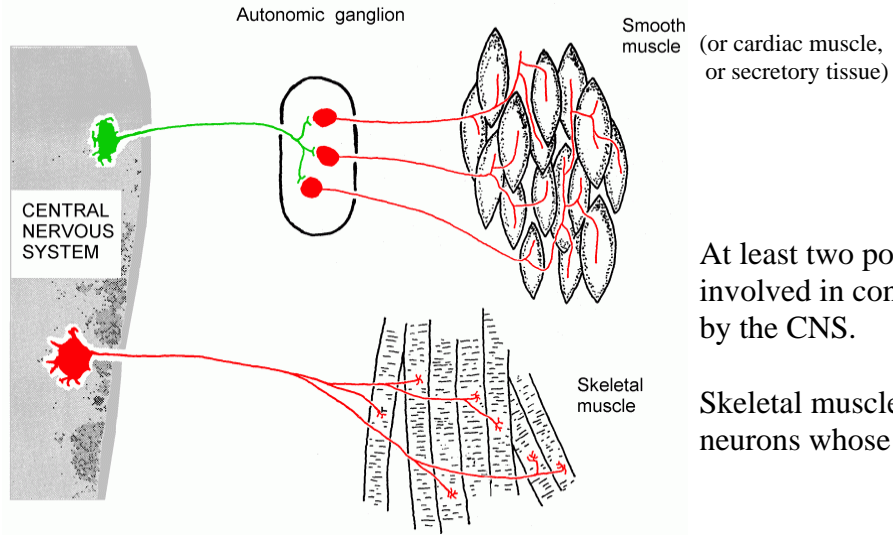
**SENSORY FIBRES** — Somatic afferent  
— Visceral afferent  
( Unipolar cell bodies in spinal or cranial nerve ganglia )



No synapses in a sensory ganglion

**EFFERENT FIBRES** — Motor (Somatic efferent)  
— Preganglionic (Visceral efferent)  
( Cell bodies in spinal cord or brain stem )

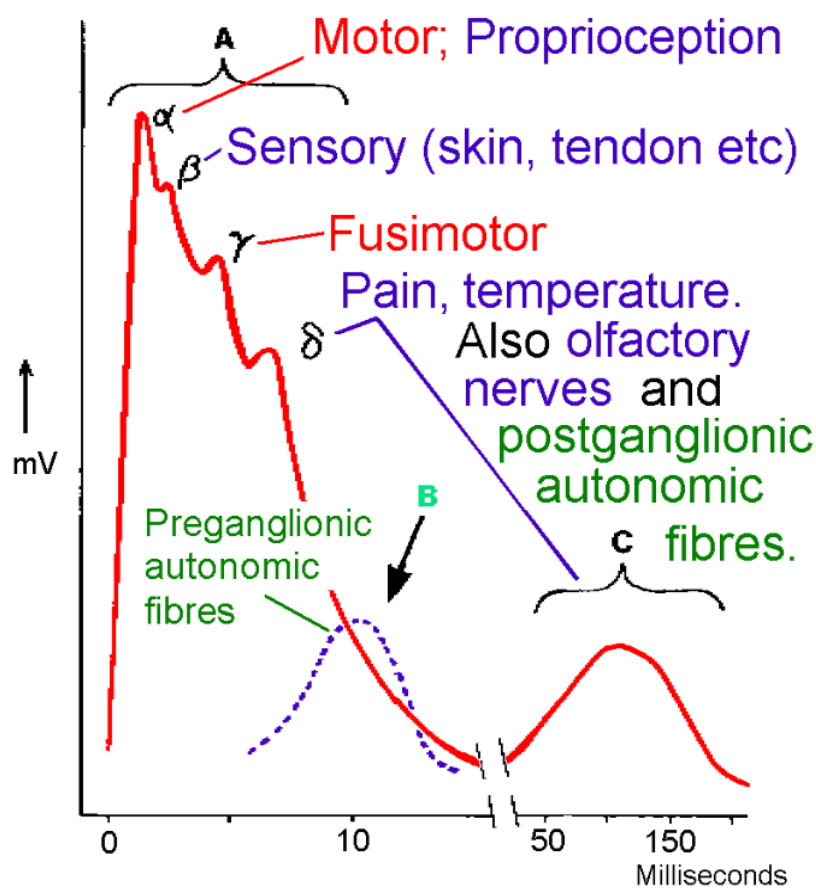
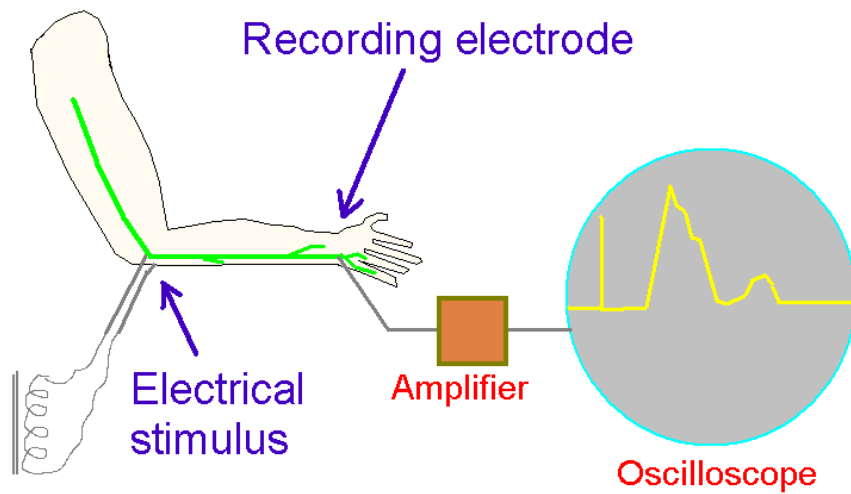
(These types are often called nerve components. Traditionally 7 components are recognized in the cranial nerves.)



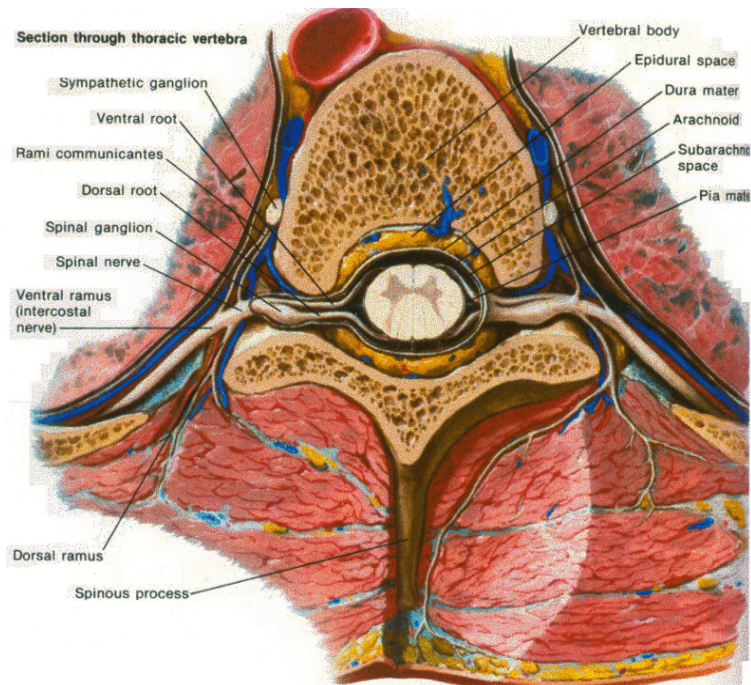
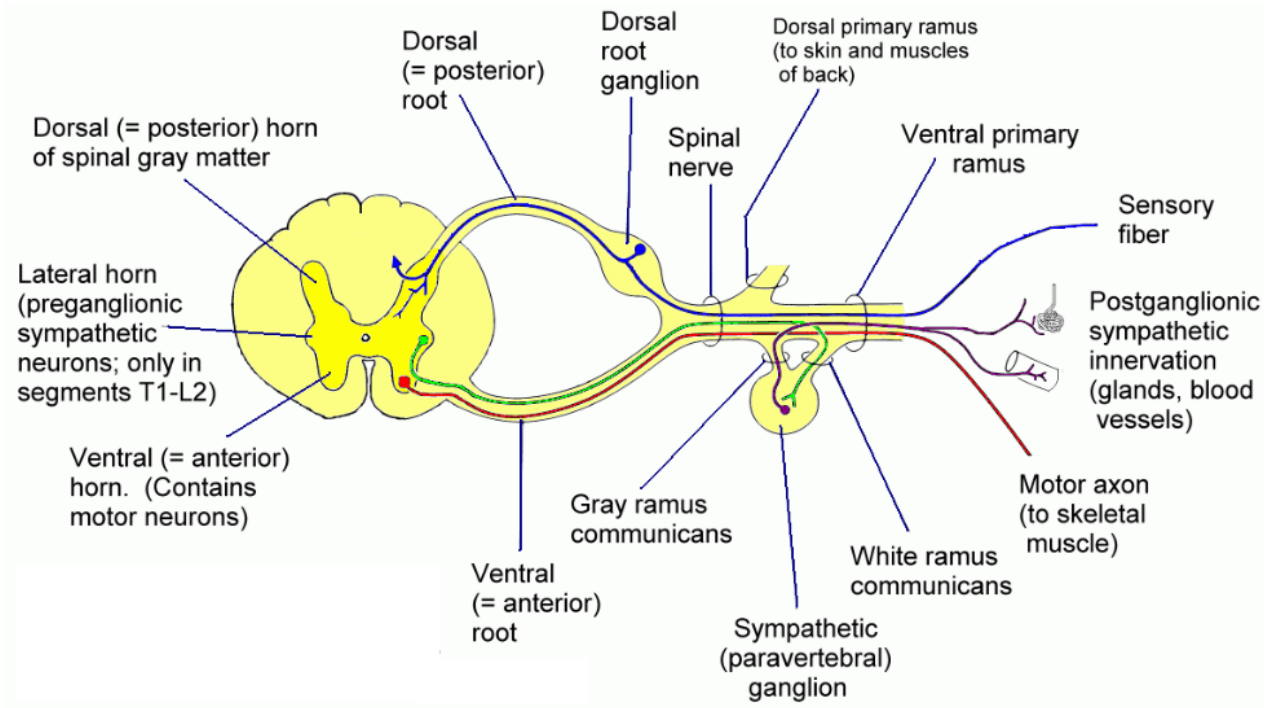
At least two populations of neurons are involved in control of visceral structures by the CNS.

Skeletal muscle is directly innervated by neurons whose cell bodies are in the CNS.

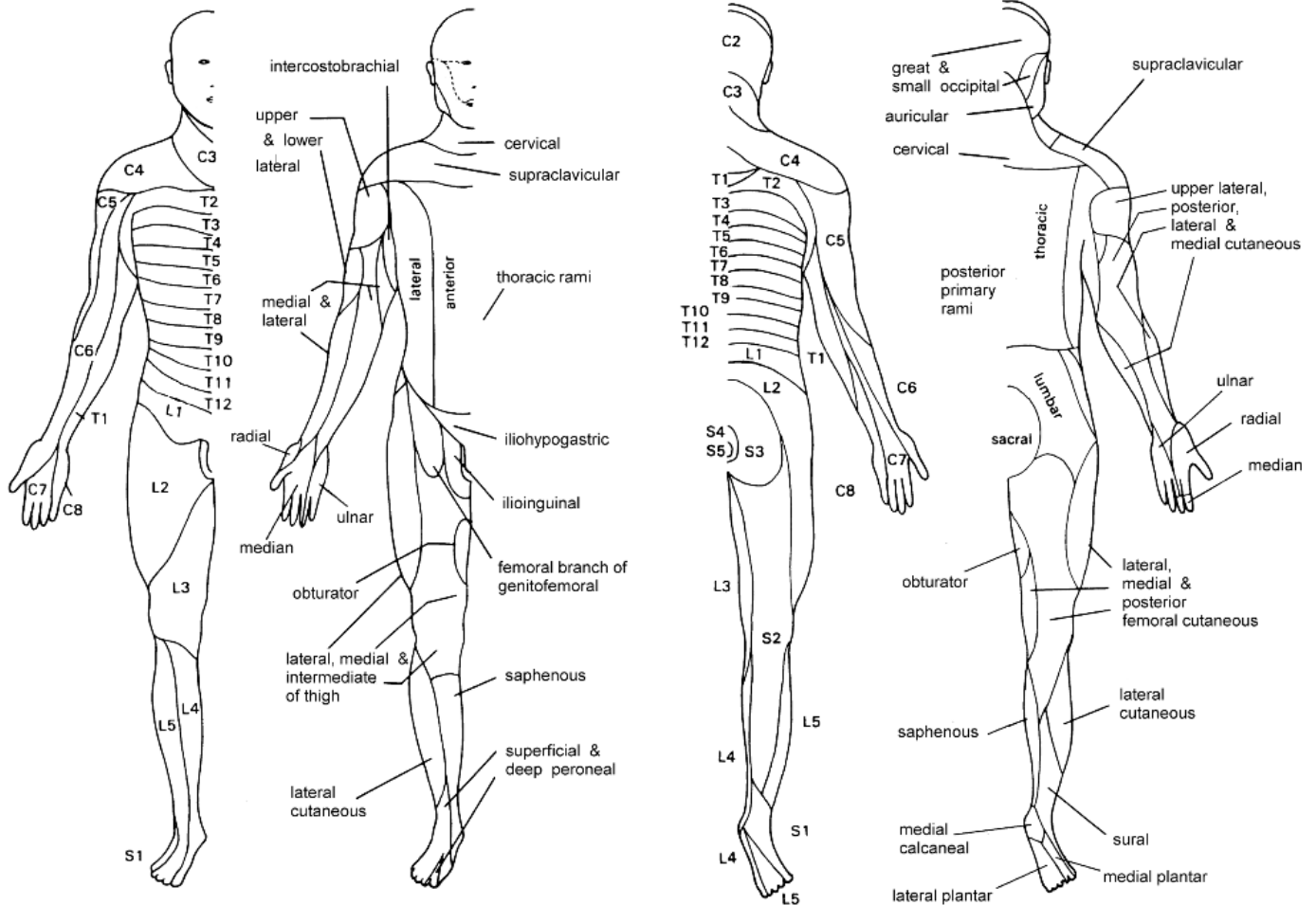
# RECORDING A COMPOUND ACTION POTENTIAL



(Group B fibres are not present in nerves of limbs — only in ventral roots T1 to L2, white communicating rami, the sympathetic trunk and cranial nerves III, VII, IX and X.)



## DERMATOMES



A diagram of this kind is for reference. Don't try to memorize the landmarks for the dermatomes or for cutaneous nerve territories.

Dermatomes overlap by approximately the width of one segment. Thus, it would be necessary to transect the dorsal roots T8, T9 and T10 to denervate the skin in dermatome T9. In contrast, the territories supplied by cutaneous nerves do not overlap.



CRANIAL NERVES. Numbers, names and principal functions

<b>I. OLFACTORY</b>	<b>SMELL</b>
<b>II. OPTIC</b>	<b>VISION</b>
<b>III. OCULOMOTOR</b>	<b>EYE MOVEMENTS</b>
<b>IV. TROCHLEAR</b>	
<b>V. TRIGEMINAL</b>	<b>FACE, MOUTH, HEAD</b>
<b>VI. ABDUCENS</b>	<b>EYE MOVEMENTS</b>
<b>VII. FACIAL</b>	<b>FACIAL MUSCLES</b>
<b>VIII. VESTIBULOCOCHLEAR</b>	<b>HEARING</b>
<b>IX. GLOSSOPHARYNGEAL</b>	<b>TONGUE,</b>
<b>X. <u>VAGUS</u> Several functions</b>	<b>PHARYNX</b>
<b>XI. ACCESSORY</b>	<b>TRAPEZ. &amp; S-C-M.</b>
<b>XII. HYPOGLOSSAL</b>	<b>TONGUE MUSCLES</b>

You will need to know more than this about cranial nerves. This list summarizes what you should know at this early stage of the course.