

Puder's Tips and Tricks to Answering Lesion Questions

As requested, I am providing my little tips and tricks to answering lesion questions regarding the 3 body pathways.

I. Where and When to these pathways cross?

1. For sensory pathways - it is always the 2nd order neuron axon that crosses over (decussates).
This is true for all sensory pathways - except the taste (gustatory) pathway.
2. For the motor pathway - it is the upper motor neuron whose axons crosses.

II. Ipsilateral vs. Contralateral

1. **Ipsilateral lesions** are structures located **below the crossing** for that respective pathway and **Contralateral lesions** are structures located **above the pathway crossing**.

For example: **Substantia gelatinosa** is **below the anterior white commissure** so it will be an **ipsilateral loss of pain/temperature**.

Anterolateral system (spinothalamic tracts) are **above the anterior white commissure** so it will be a **contralateral loss of pain and temperature**.

III. Gray vs. White matter

Structures lesioned in **gray matter** will show signs/symptoms **at that level only** whereas **white matter lesions** are **from the level of the lesion and below**.

Exception to this is the **anterior white commissure** which is white matter but you can think of it as gray matter because an **anterior white commissure lesion affects that level only**.

Also be careful of **Fasciculus gracilis** and **Fasciculus cuneatus** – they are white matter tracts but **fasciculus gracilis contains neurons from T6 – Co 1** and

fasciculus cuneatus contains neurons from C1 – T6,

so it is best to describe a fasciculus cuneatus lesion as affecting the upper half of the body and fasciculus gracilis lesion affecting the lower half of the body.

I hope that was helpful 😊

Enjoy!