BIO 4432 – Human Anatomy
Week 15 – Week of 04/25/2022

Happy week 15! WOW. There’s only one more week left of school!! This resource will be shorter than usual because it’s only going to cover GI innervation and y’all have your LAST (!!!) lecture exam of the semester this Thursday. Y’all really are almost to the finish line!

Remember: The tutoring center offers free individual and group tutoring for this course. Our group tutoring session will be Thursdays from 6:45-7:45 PM in the basement of Sid Rich, room 74. You can reserve your spot at https://baylor.edu/tutoring. Hope to see you there!

Keywords: Innervation of the GI, Sympathetics, Parasympathetics

**Topic of the Week: GI Innervation**

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<th><strong>Sympathetic innervation</strong></th>
<th><strong>Synapse location</strong></th>
<th><strong>Effector organ(s)</strong></th>
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<tbody>
<tr>
<td>Greater splanchnics (T5-T9)</td>
<td>Celiac ganglion</td>
<td>Foregut organs</td>
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<tr>
<td>Lesser splanchnics (T10-T11)</td>
<td>Superior mesenteric ganglion</td>
<td>Midgut organs</td>
</tr>
<tr>
<td>Least splanchnics (T12)</td>
<td>Superior mesenteric ganglion</td>
<td>Midgut, kidneys, adrenal glands</td>
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<tr>
<td>Lumbar splanchnics (L1-L2)</td>
<td>Inferior mesenteric ganglion</td>
<td>Midgut and hindgut organs</td>
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<tr>
<td>Sacral splanchnics (lumbar lateral cord and down)</td>
<td>Superior hypogastric plexus</td>
<td>Hindgut, pelvic, and perineal structures</td>
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</tbody>
</table>

Sympathetics are going to:
- Relax the gallbladder
- Reduce peristalsis
- Stimulate the liver to produce more glucose

**Parasympathetic innervation**
The vagus nerve innervates the foregut and the midgut.

The pelvic splanchnics (S2-S4) innervates the hindgut, pelvic, and perineal organs,
- Travels through the inferior hypogastric plexus (mixture of parasympathetics and sympathetics)
- Synapse at target organ
- **These are the ONLY parasympathetic splanchnics!!**

**Innervation drawing**
Y’all should be drawing something similar, but I included mine below just in case. This can help you visualize where everything is synapsing, traveling to, and innervating.
Week 14 Knowledge Checkpoint:

1. What nerves are responsible for relaxing the gallbladder?
   a. Lumbar splanchnics
   b. Lesser splanchnics
   c. Greater splanchnics
   d. Pelvic splanchnics

2. What nerve(s) supply parasympathetic innervation to the midgut?
   a. Pelvic splanchnics
   b. Vagus
   c. Lumbar splanchnics
   d. Least splanchnics

3. Where do the greater splanchnics synapse?
a. Celiac ganglion  
b. Inferior mesenteric ganglion  
c. Superior mesenteric ganglion  
d. Inferior hypogastric plexus

THINGS YOU MAY STRUGGLE WITH!

1. *GI as a whole*: This includes information on last week’s resource as well as this one. I would suggest (again) to split this material into foregut, midgut, and hindgut. When studying, make sure you know everything about all organs covered including what part of the GI system they’re in, what they do, what their blood supply is, and what their innervation is.
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Answers
1. c
2. b
3. a