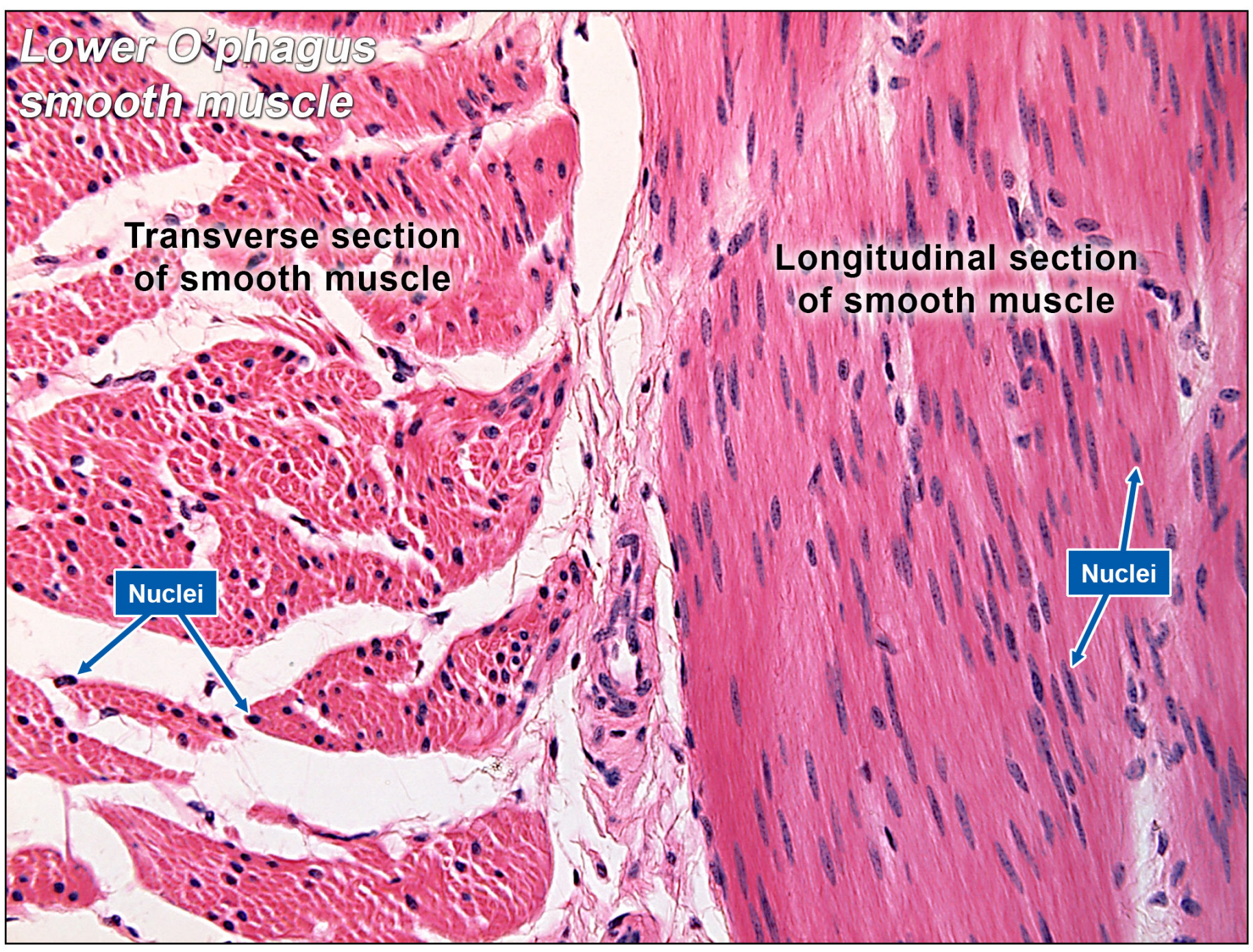
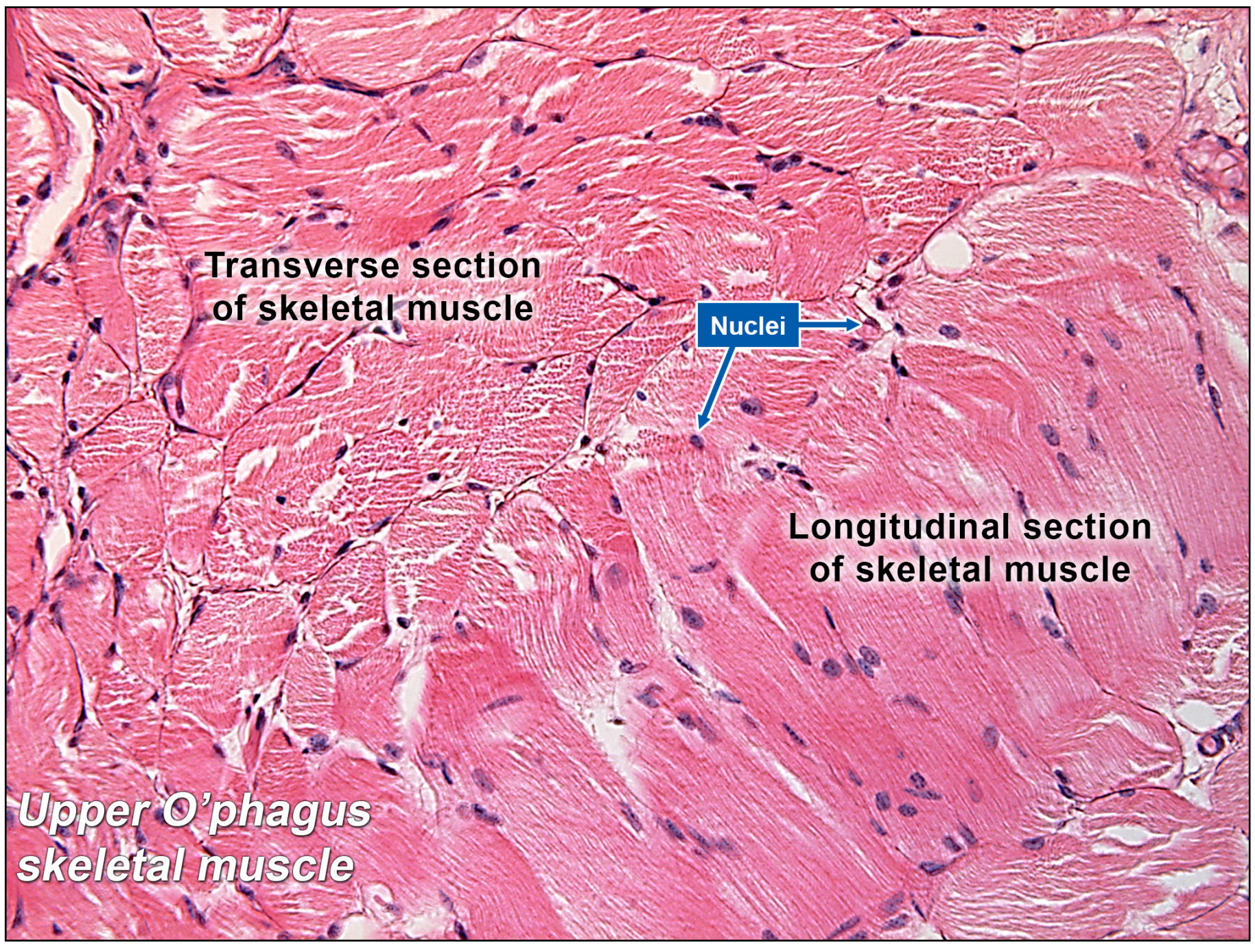


UPPER AND LOWER OESOPHAGUS

Musculoskeletal System

Oesophagus is a muscular tube connecting the mouth to the stomach. Histologically the oesophagus can be divided into three parts: Upper, middle, lower.



1. Oesophagus has 3 typical layers: Mucosa, submucosa, muscle.
2. Upper $\frac{1}{3}$ of oesophagus is made of skeletal muscles.
3. Inner longitudinal muscles fibres run lengthwise.
4. Outer circular muscle fibres encircle the longitudinal fibres.
5. Skeletal muscle cells are striated, long and cylindrical.
6. They are multinucleated.
7. As a result of the high energy requirement of skeletal muscles there are numerous mitochondria to make enough ATP.
8. The lower $\frac{1}{3}$ of the oesophagus is made of smooth muscle cells.
9. The lower oesophagus is composed of longitudinal and circular muscles which are smooth muscles.
10. Smooth muscles are involuntary, non-striated muscles.
11. The thick and thin filaments are not arranged in a sarcomere in smooth muscles thus, appearing non-striated.
12. Smooth muscle cells have a single elongated spindle shaped nucleus.
13. Achalasia is a disorder of the oesophagus which causes difficulty swallowing. Due to degeneration of nerve cells between the oesophageal muscles.