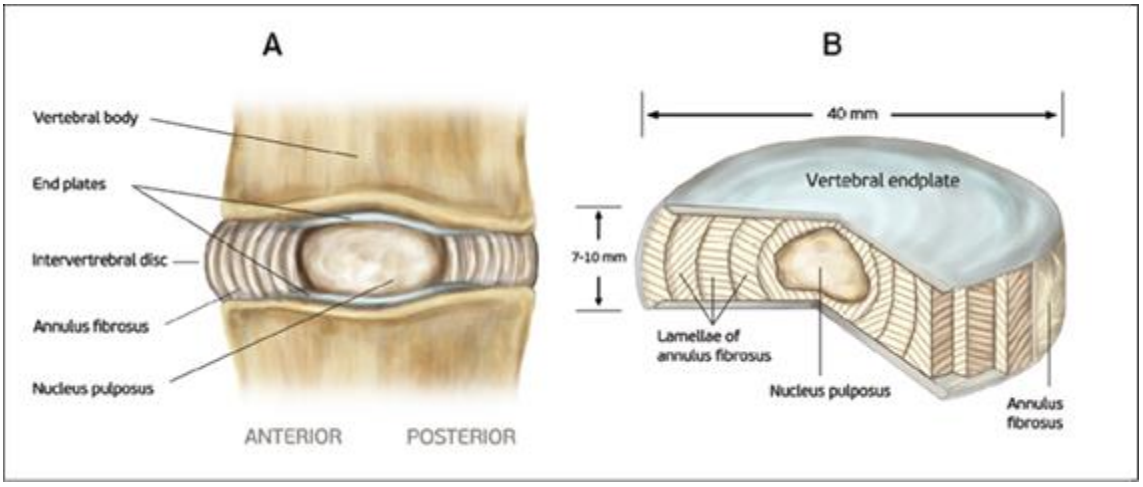
Lumbar endplates and endplate pain:

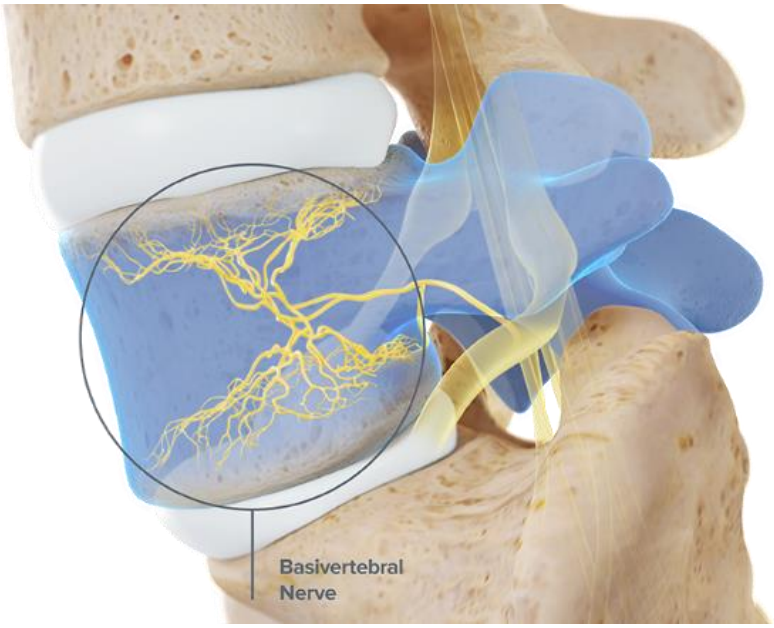
The vertebral endplate is the transition region where a vertebral body and intervertebral disc interface with each other. A vertebral end plate is commonly described as consisting of 2 layers:

- Cartilaginous layer (also called cartilaginous endplate) that fuses with the disc
- Thin layer of porous bone (also called bony endplate) that attaches to the vertebra

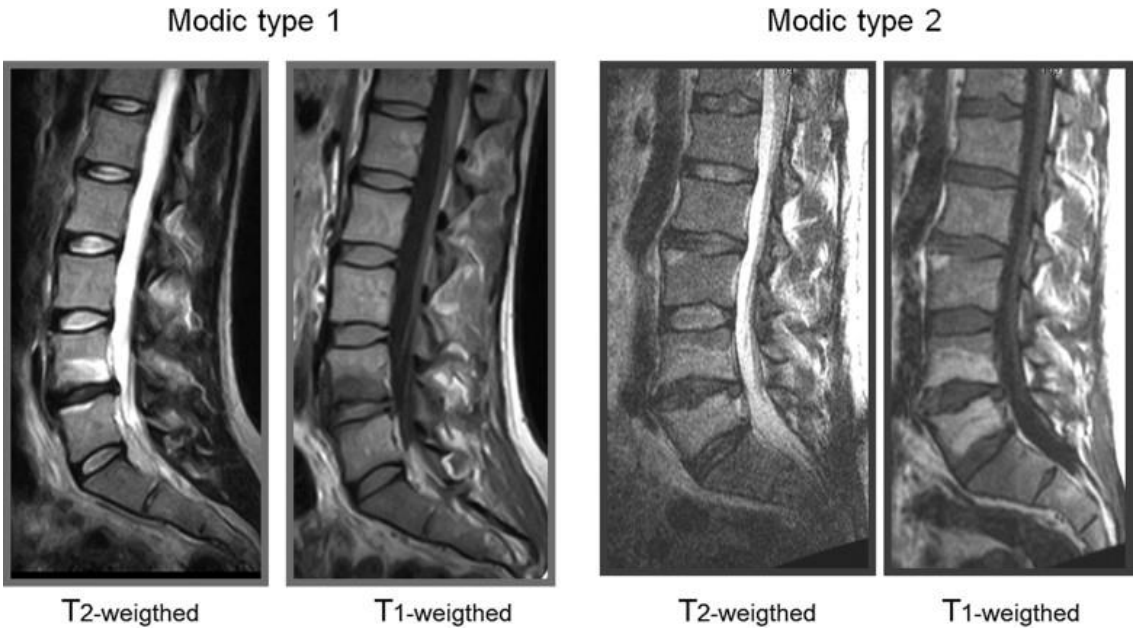
Nutrients pass into the intervertebral disc through the vertebral endplate. The cartilaginous layer of the vertebral endplate also helps maintain the form and function of the disc.



The vertebral endplate receives its nerve supply from the basivertebral nerve. Damage to the vertebral endplate may cause pain and speed up degeneration of the intervertebral disc.



Vertebral endplate pathology can occur with trauma (falls, car accidents), poor bone quality from osteoporosis resulting in fractures of the endplate and the adjacent vertebral body. A more recent hypothesis also suggests that chronic infection of the endplates results in changes on MRI known as, "Modic changes." These Modic changes have been linked to painful endplates and the adjacent disc.



Treatment of acute endplate pain is typically conservative and consists of rest, anti-inflammatories (NSAID's), analgesics (Tylenol) and occasionally stronger pain medication when there is a fracture of the adjacent vertebral body. Physical therapy, home exercise and chiropractic are also used for more chronic symptoms.

New interventional technologies to treat painful endplates are targeting the basivertebral nerve for ablation (i.e., using at heat-tipped probe to coagulate the nerve). This technology, called Intracept, is promising, and may change the way we treat patient with chronic low back pain who have certain Modic changes on MRI. This technique is currently not being offered within our practice, but we are anticipate bringing this treatment to Buffalo Spine and Sports Medicine in the future.