***Pain Management in Surgery***

***(Brief)***

Pre-emptive analgesia: giving analgesics prior to the noxious stimulus (surgery)

* + By blocking or inhibiting the nociceptive process before it begins, hypersensitivity is prevented
  + May decrease the amount of anesthesia and post-operative analgesia needed

Multimodal or “balanced” analgesia: using a combination of analgesics which will impact more than one portion of the nociceptive process

* + For example: buprenorphine and meloxicam pre-surgically, lidocaine block used prior to incision, and bupivicaine splash prior to closing incision

Transduction:

* + Can be blocked by local anesthetics by injection either at the site of injury/incision or intravenously
  + Can be decreased by use of NSAIDs which decrease the production of prostaglandins at the site of injury

Transmission:

* + Can be prevented by local anesthetics by injection along peripheral nerves, at nerve plexus, or in the epidural or subarachnoid spaces

Modulation:

* + Can be augmented by injection of local anesthetics or alpha2-adrenergic agonists; gabapentin may also effect modulation

Perception:

* + Altered by use of general anesthetics or systemic injection of opioids and/or alpha2-agonists

Source: [www.surgicalresearch.org/.../**Pain**\_and\_Analgesia-Lisa\_Johnson.ppt](http://www.surgicalresearch.org/.../Pain_and_Analgesia-Lisa_Johnson.ppt)