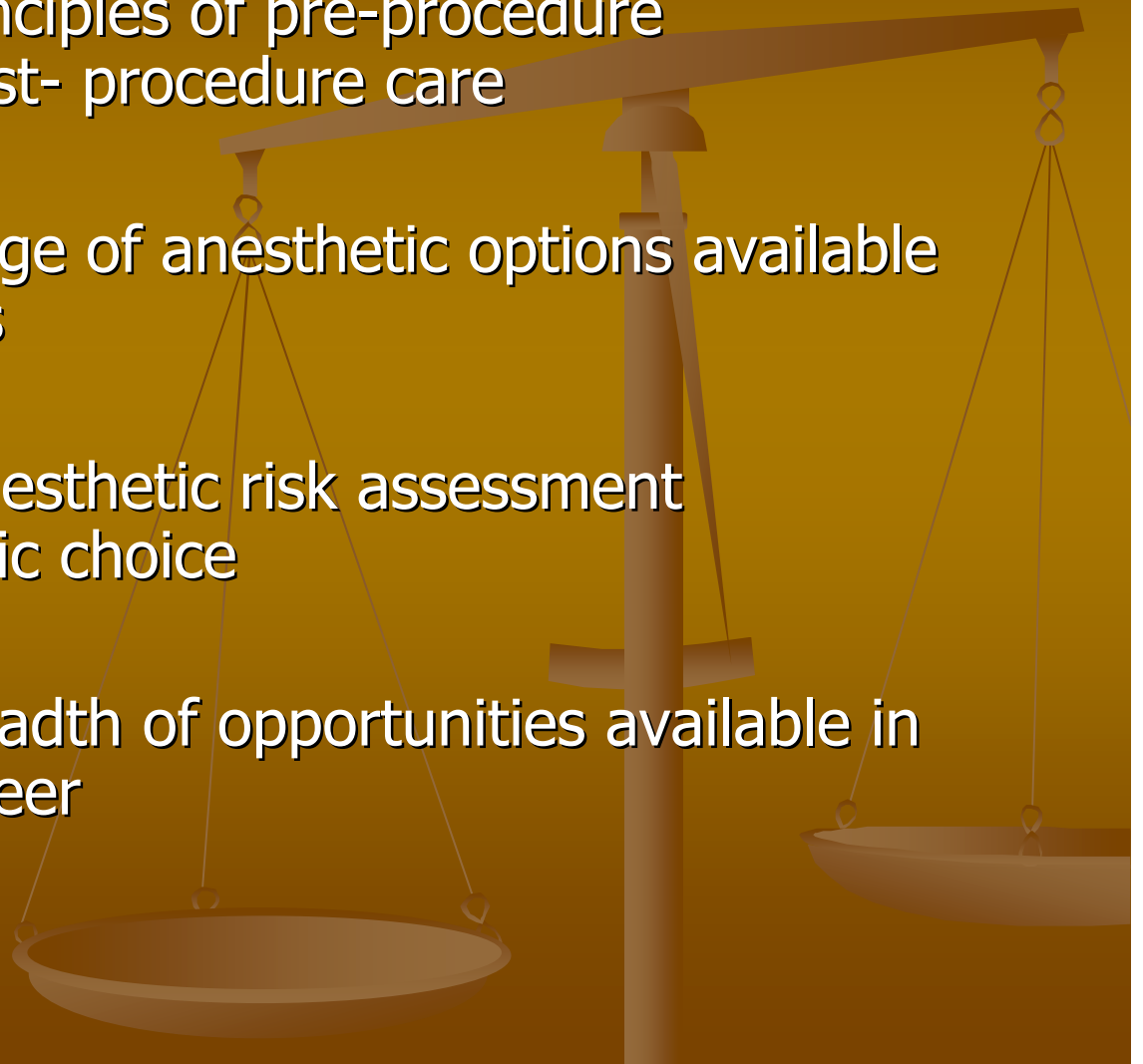


Introduction to Anesthesia



Objectives for the MS111 7000 Clerkship

- Understand the principles of pre-procedure preparation and post- procedure care
- Understand the range of anesthetic options available to anesthesiologists
- Understand how anesthetic risk assessment influences anesthetic choice
- Understand the breadth of opportunities available in anesthesia as a career



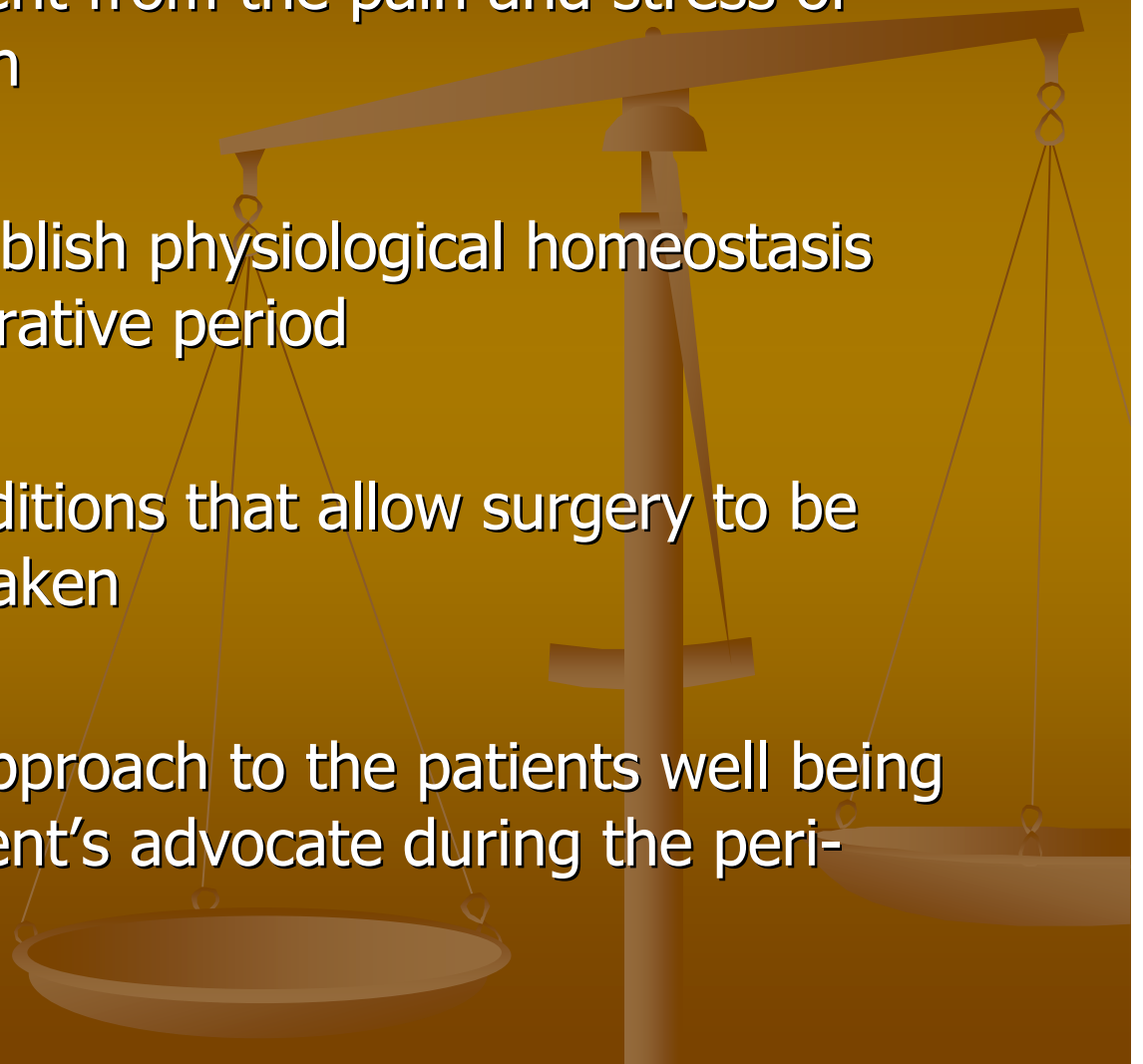
The Central Roles of the Anesthesiologist

To protect the patient from the pain and stress of surgical intervention

To preserve or establish physiological homeostasis during the peri-operative period

To provide the conditions that allow surgery to be successfully undertaken

To take a holistic approach to the patients well being and act as the patient's advocate during the peri-operative period



The Meaning of Anesthesia

Ancient Greek

αναισθησια – insensible or without feeling
αναλγησια – state of painlessness

Encyclopaedia Britannica 1771

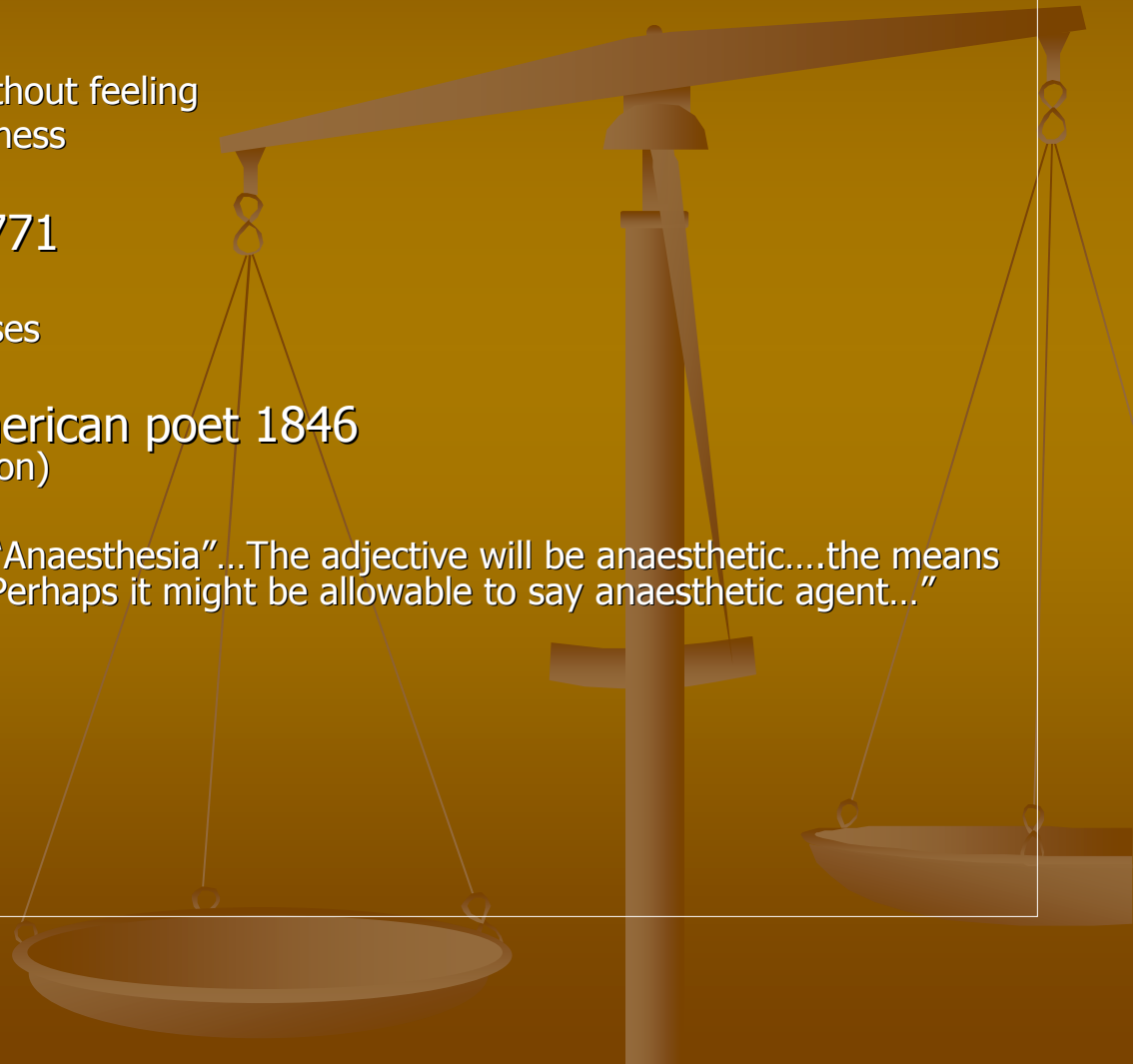
Anaesthesia - privation of senses

Oliver Wendell Holmes, American poet 1846 (following Morton's demonstration)

"The state should ...be called "Anaesthesia"...The adjective will be anaesthetic...the means employed...the anti-aesthetic. Perhaps it might be allowable to say anaesthetic agent..."

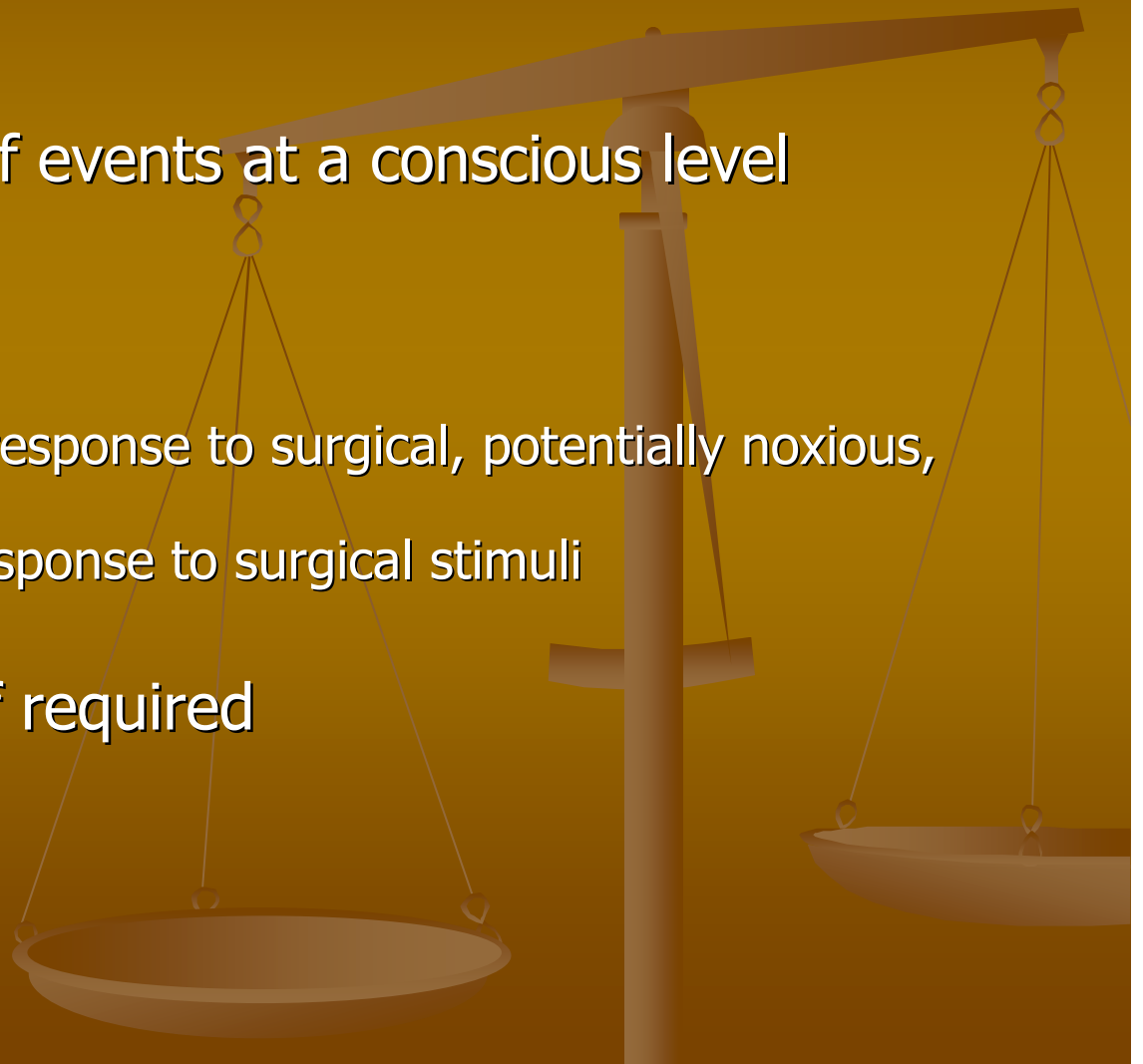
Hebrew (Genesis 2)

Tardama – a deep sleep



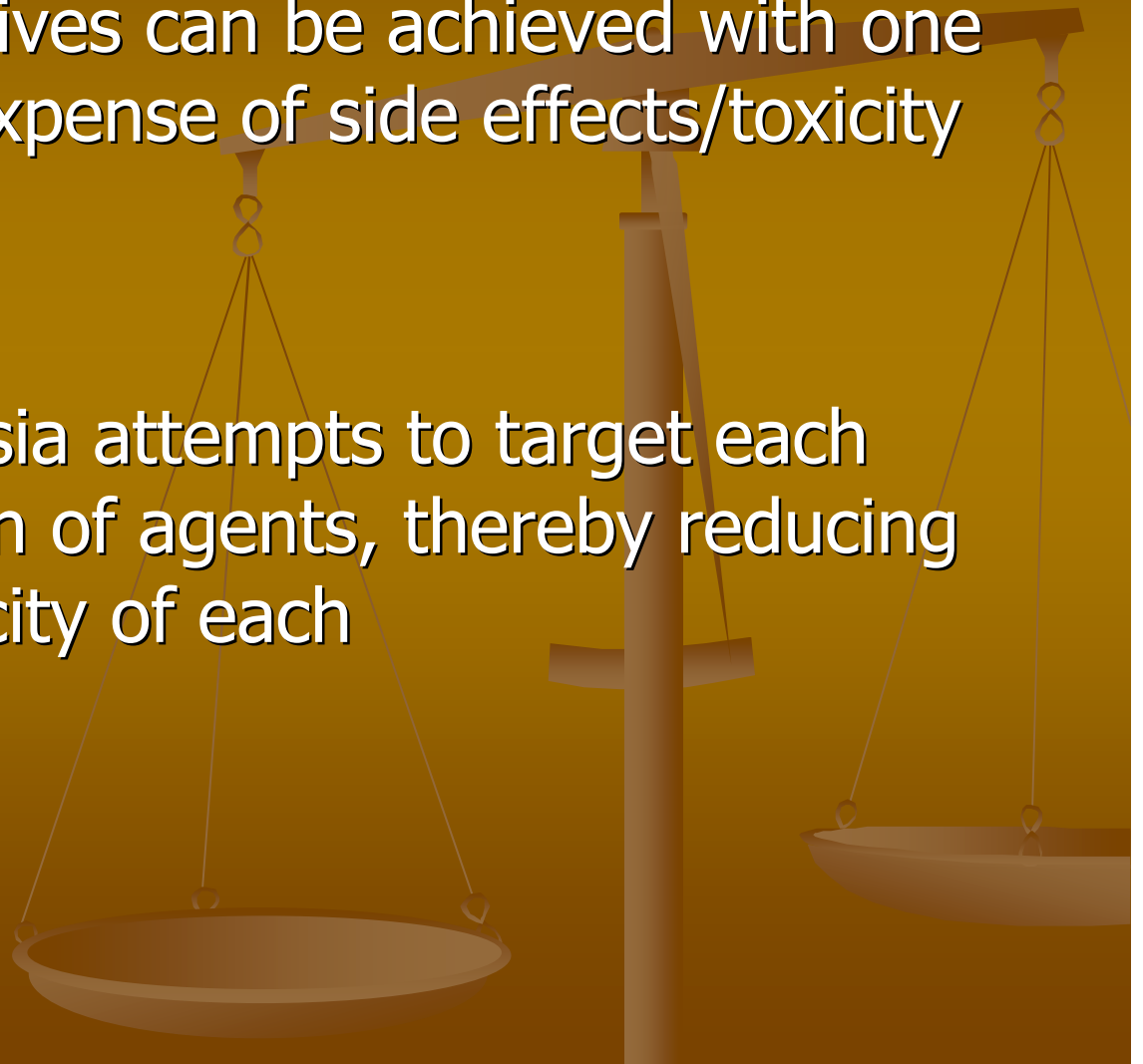
The Objectives of Anesthesia

- Loss of awareness
- Amnesia - no recall of events at a conscious level
- Analgesia
 - lack of movement in response to surgical, potentially noxious, stimuli
 - Minimal autonomic response to surgical stimuli
- Muscle relaxation – if required
- Reversibility

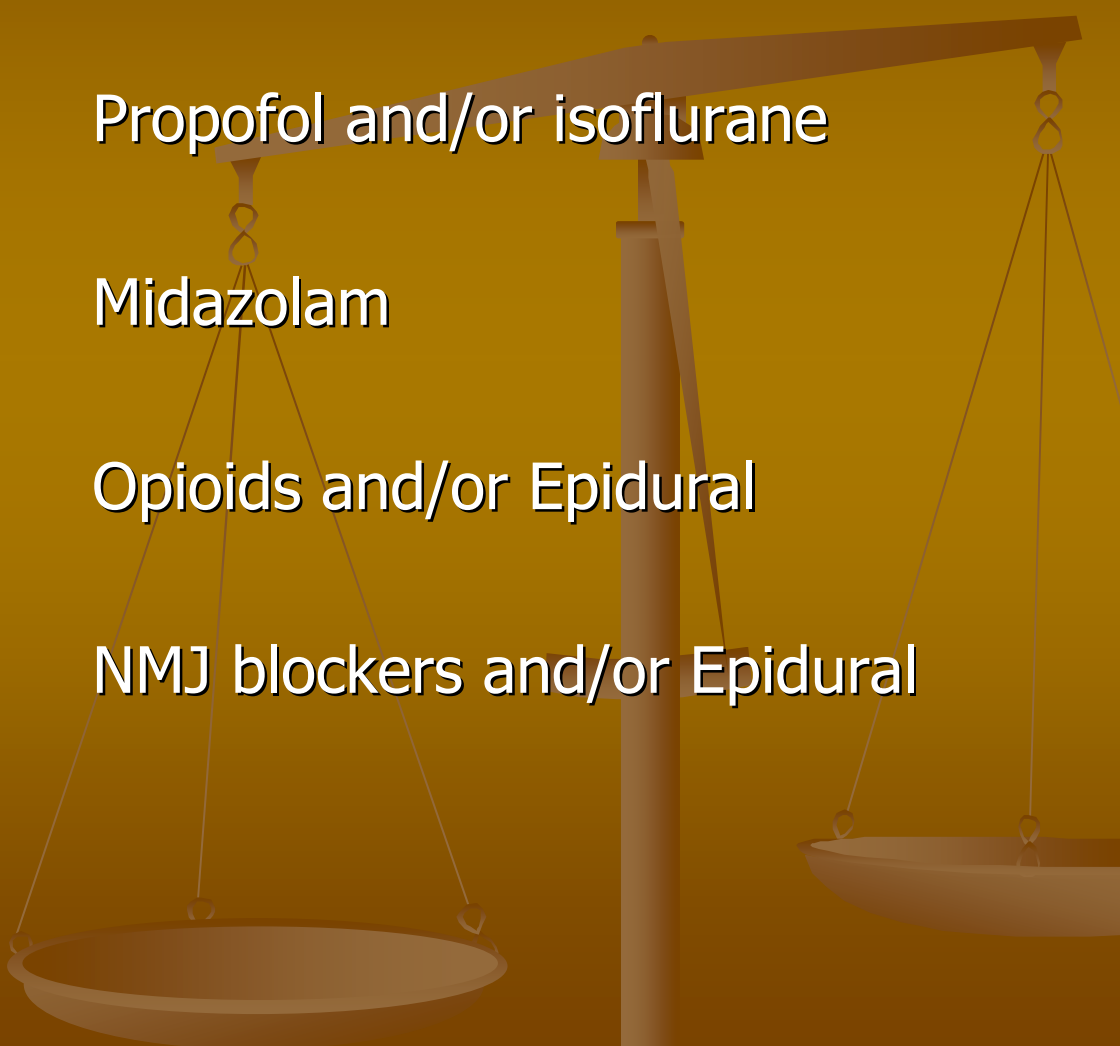


Balanced Anesthesia

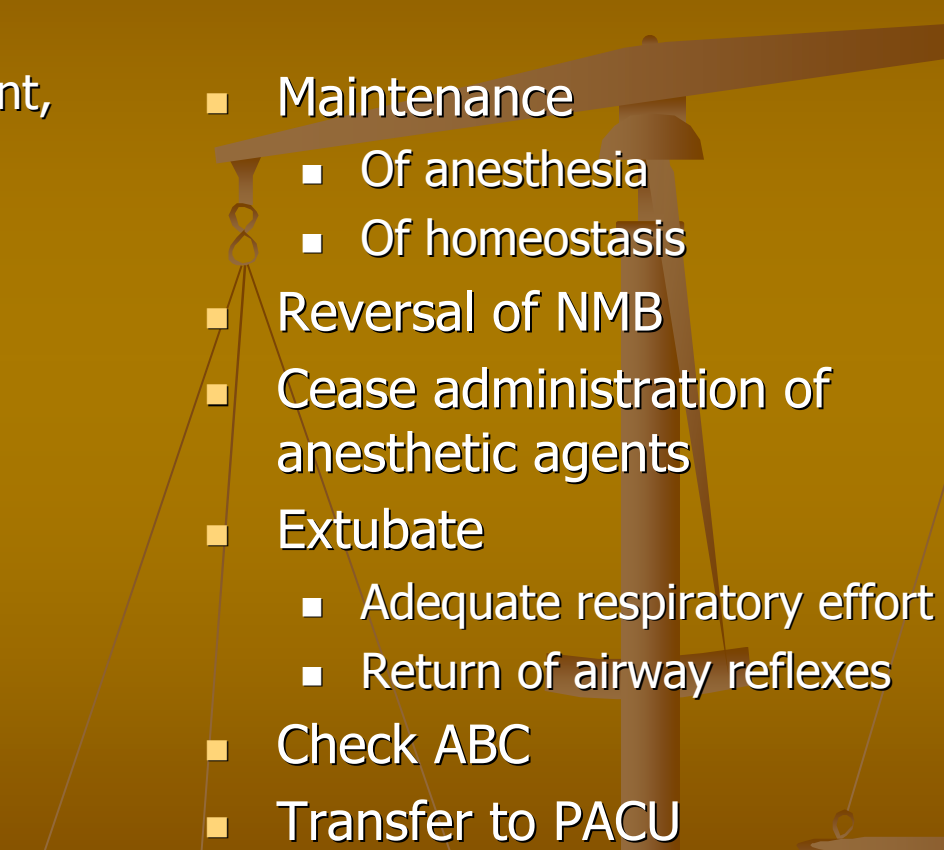
- All of these objectives can be achieved with one drug, but at the expense of side effects/toxicity
- Balanced anesthesia attempts to target each with a combination of agents, thereby reducing the dose and toxicity of each



Balanced Anesthesia *Example*

- Sleep Propofol and/or isoflurane
 - Amnesia Midazolam
 - Analgesia Opioids and/or Epidural
 - Muscle relaxation NMJ blockers and/or Epidural
- 

A Typical General Anesthetic

- 
- Preop visit
 - Introduction, risk assessment, consent, premedication
 - Transfer to OR
 - Monitoring
 - Minimum standards
 - Pre-oxygenation
 - IV induction
 - Check ventilation
 - Neuromuscular blockade
 - Intubation
 - Check ABC
 - Maintenance
 - Of anesthesia
 - Of homeostasis
 - Reversal of NMB
 - Cease administration of anesthetic agents
 - Extubate
 - Adequate respiratory effort
 - Return of airway reflexes
 - Check ABC
 - Transfer to PACU

A Wealth of Variation!

■ General Anesthesia

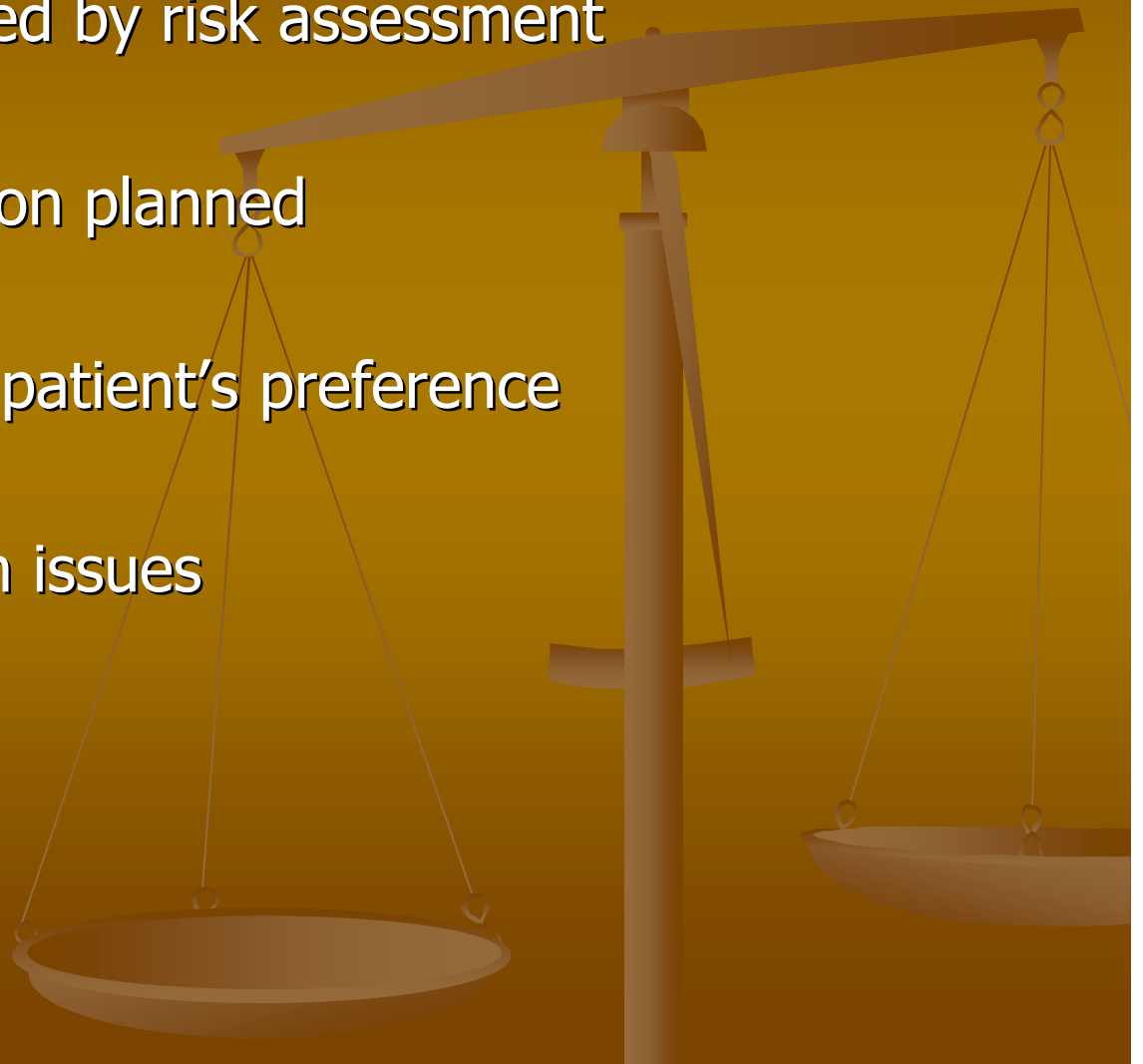
- Intravenous or inhalational
- Controlled ventilation or spontaneous
- Endotracheal tube, laryngeal mask airway or mask
- Rapid sequence induction?
- Method of intubation e.g. direct laryngoscopy, blind nasal, fiberoptic - awake or asleep
- Hyperventilate or not
- Choice of
 - IV induction agents
 - Inhalational induction agent
 - Neuromuscular blockade
 - Opioids
 - Reversal agent
- Hypotensive anesthesia
- Hypothermia or keep warm

■ Local anesthesia

- Infiltration
- Nerve block
- Spinal
- Epidural
- Combined spinal epidural
- Choice of LA drugs
- +/- Opioids, epinephrine
- Local and general
- Antiemetics
- PACU or ICU post op
- And many options in terms of homeostasis
 - Needs resuscitation?
 - Fluids
 - Crystalloid
 - Colloid
 - Blood and blood products
 - Vasoactive drugs
 - Wet or dry
 - Beta blockade
 - Beta agonist
 - Antimuscarinics
 - Steroid

Choice of technique

- Safest – as determined by risk assessment
 - Patients condition
 - Surgical intervention planned
- Anesthesiologist and patient's preference
- Economic and system issues



The anesthesiologist is often only a vaguely remembered actor from the surrealistic scenes that precede and follow surgery. With all the powers of Morpheus, the Greek god of sleep and dreams, the anesthesiologist seems to delight in his role as he smiles down on his vulnerable patients.

