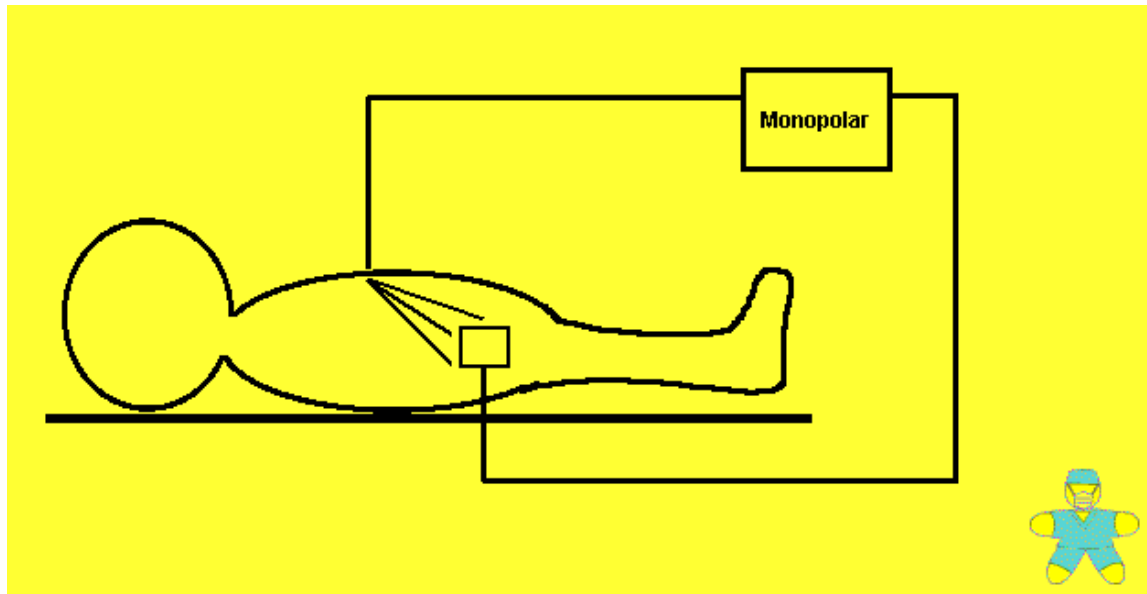


Diathermy

- Diathermy is the use of high frequency electric current to produce heat
- Used to either cut or destroy tissue or to produce coagulation
- Mains electricity is 50 Hz and produces intense muscle and nerve activation
- Electrical frequency used by diathermy is in the range of 300 kHz to 3 MHz
- Patients body forms part of the electrical circuit
- Current has no effect on muscles

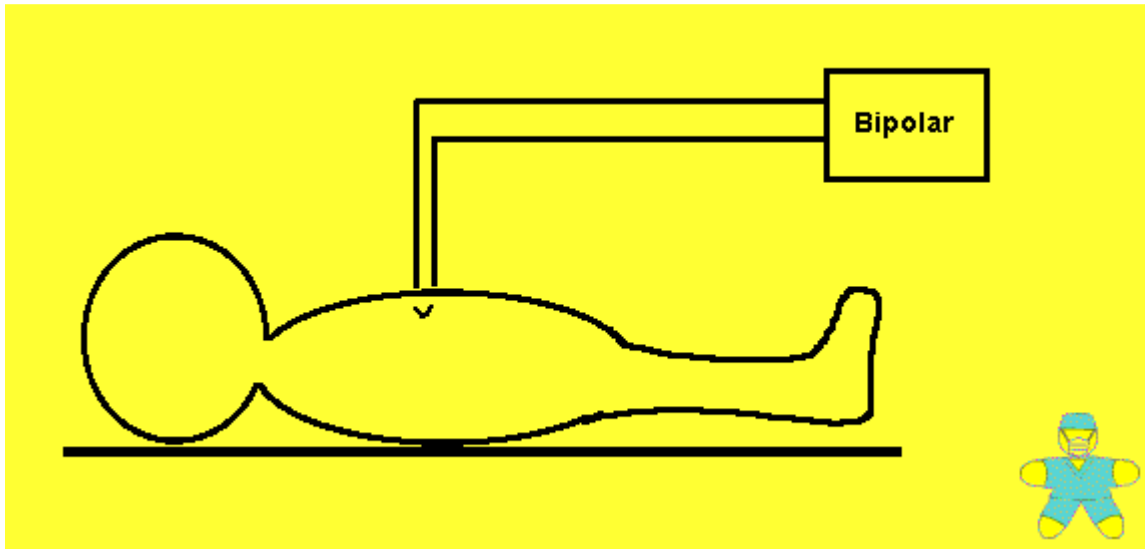
Monopolar diathermy

- Electrical plate is placed on patient and acts as indifferent electrode
- Current passes between instrument and indifferent electrode
- As surface area of instrument is an order of magnitude less than that of the plate
- Localised heating is produced at tip of instrument
- Minimal heating effect produced at indifferent electrode



Bipolar diathermy

- Two electrodes are combined in the instrument (e.g. forceps)
- Current passes between tips and not through patient



Effects of diathermy

- The effects of diathermy depends on the current intensity and wave-form used
- Coagulation
 - Produced by interrupted pulses of current (50-100 per second)
 - Square wave-form
- Cutting
 - Produced by continuous current
 - Sinus wave-form

Risk and complications

- Can interfere with pacemaker function
- Arcing can occur with metal instruments and implants
- Superficial burns if use spirit based skin preparation
- Diathermy burns under indifferent electrode if plate improperly applied
- Channeling effects if used on viscus with narrow pedicle (e.g. penis or testis)