



# Spinal Anaesthesia

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Course in Obstetric  
Anaesthesia 2012

Spinal Anaesthesia



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# Key points!



- **METHOD OF CHOICE** for CS
- **NOT** if patient is in **shock** (ABC)
- **Maybe NOT** if significant **heart valve disease** (listen)
- **Maybe NOT** if **bleeding disorders** or **anticoagulated** (ask)
- **Asepsis** and careful **patient positioning**
- **Monitoring** during and after the procedure
- **Resuscitation drugs** to treat the complications
- **Full equipment** to undertake **GA available**

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# Method of choice!

## WHY!!!??



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# Method of choice!



Risks

Disadvantages



Benefits

Advantages

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# Advantages



- Patent airway (failed intubation/aspiration)
- No CNS depression -> Awake
- Quick & effective pain relief
- Low cost compared to GA
- High success rate
- Muscle relaxation
- No direct foetal depression
- Small dose of LA (low toxicity)
- No direct effect on uterine contractility
- Anaesthetist free to resuscitate the baby



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# Disadvantages

- Can't do it / Doesn't work
- Hypotension -> **Monitor**
- Hypoxia -> **Monitor**
- Anxiety / Awake
- Operation lasting too long
- Post dural puncture headache
- Danger of a total spinal!





# Contraindications

Do not give SPA to (caution):

- A mother who refuses the technique! ABSOLUTE!
- NOT #1
- NOT #2
- NOT #3
- Local infection / sepsis

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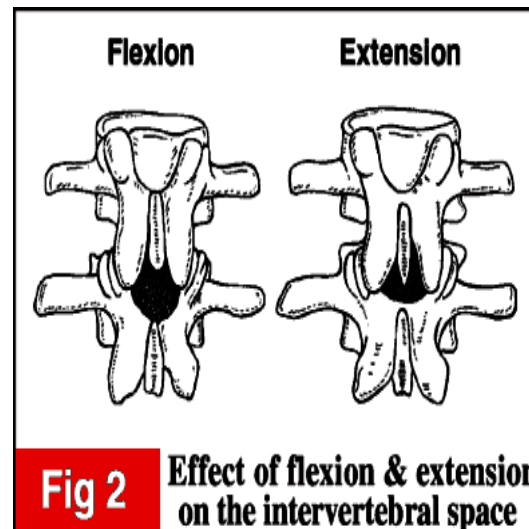
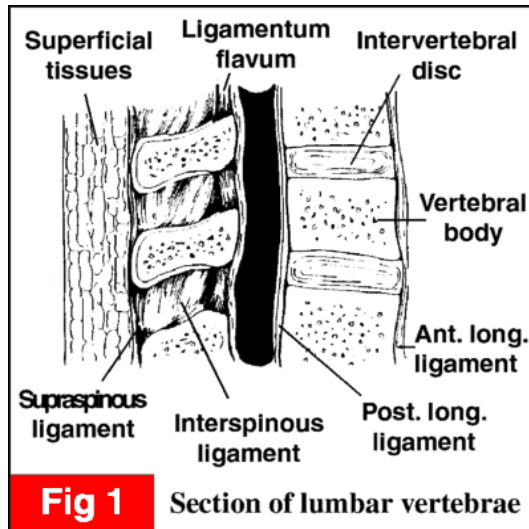
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# Anatomy

- Spinal cord ends at L1/L2



Pictures from World Federation of Societies of Anaesthesiologists

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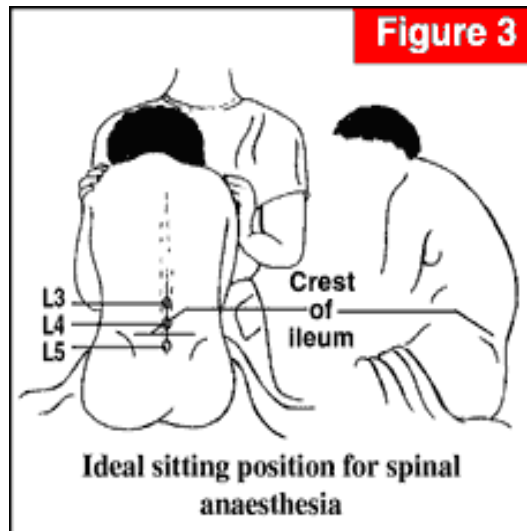




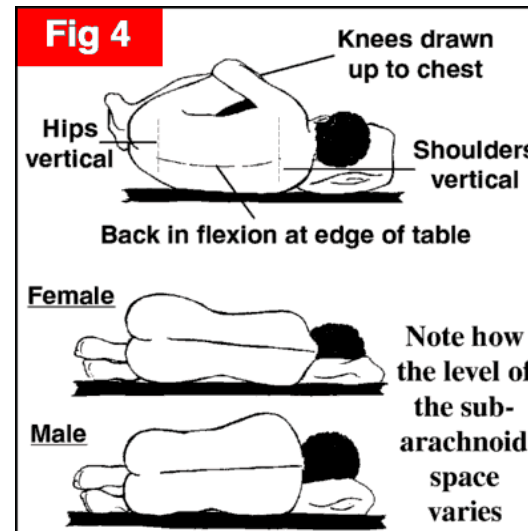
# Positioning

- Important landmark (clinical): Truffier's line

Sitting position



Lateral position



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# Preparations

- Explain the procedure to the mother
- Full equipment to undertake **GA available**
- Large bore (at least 16 gauge) cannula inserted
- Fluid infusion (co-load) & vasoconstrictor prepared!
- "The spinal pack"
- Checklists!



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# Choice of Drugs



Local anaesthetic	Concentration	Block for CS	Duration
Bupivacaine	0.5 %	2 – 3 ml	2 – 3 hr
Lidocaine	2 %	3 – 4 ml	30 – 45 min
Lidocaine	5 %	1.2 – 1.6 ml	60 – 90 min
Cinchocaine	0.5 %	2 – 3 ml	2 – 3 hr
Tetracaine	1 %	0.7 – 1.1 ml	2 – 3 hr
Tetracaine	0.5 %	1.5 – 2.5 ml	2 – 3 hr
Pethidine	50 mg/ml	1.5 ml	

What do you use? Why? When? Opiates? Additives?

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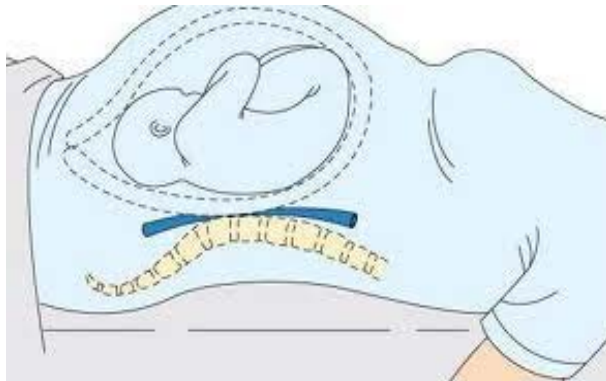


# The mother under SPA



## Positioning the mother

- 15 degree left lateral tilt or pelvis wedge
- To prevent aorto-caval compression!



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# The mother under SPA



## Care of the mother under SPA

- Test the block
- Give oxygen
- **Monitor** blood pressure and heart rate every other minute
- **Monitor** RR, depth, cyanosis & pulse oximetry
- **Monitor** general condition (nausea, pallor, sweating etc)



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# Complications

## Immediate



- **Hypotension**
- Nausea and vomiting
- Slow or shallow breathing
- Total spinal
  
- Pain during surgery
- Block comes on slowly or is inadequate
- Systemic reaction to the injected local anaesthetic

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# Complications

## Immediate



- Hypotension
- Total spinal

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# The do:s!

## Hypotension



### 1. Give fluids

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# The do:s!

## Hypotension



**1. Give fluids**

**2. Vasoconstrictor**

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# The do:s!

## Hypotension



**Safe**

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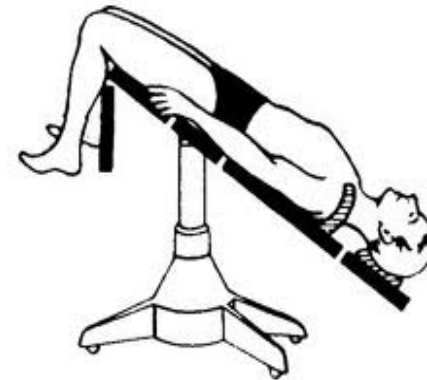


# The don't:s!

## Hypotension

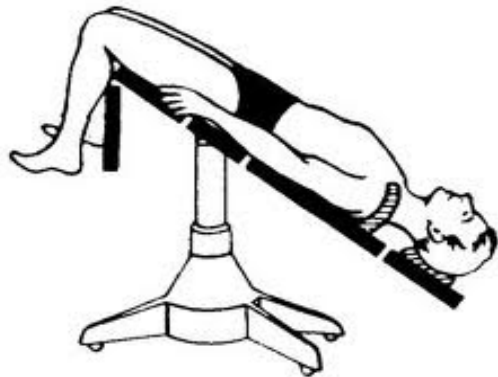
- C-problem
- -> Trendelenburg position!

**NO!**



# The don't:s!

## Hypotension



### 1. Trendelenburg position

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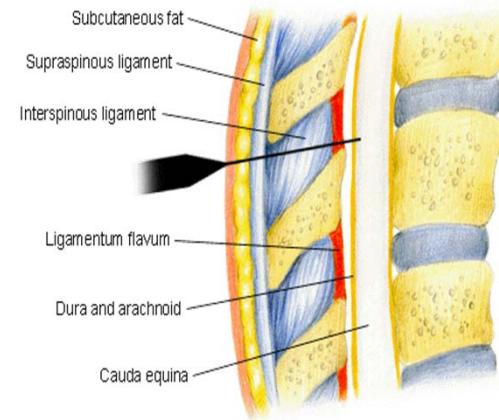
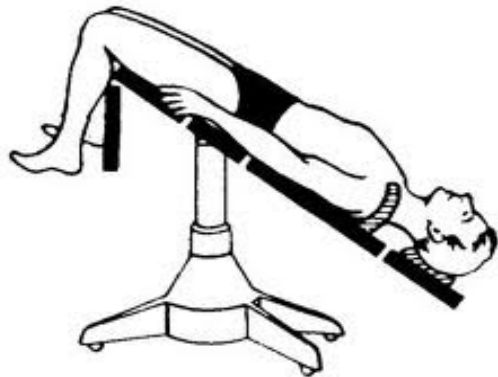


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# The don't:s!

## Hypotension



1. Trendelenburg position

2. SPA

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# The don't:s!

## Hypotension



## Total Spinal!

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# Management after CS



- Mother transferred to recovery or ward area
- **MONITOR**
  1. Blood pressure and heart rate
  2. Respiratory rate and pulse oximetry
  3. Signs of bleeding and uterine atony
  4. Return of sensory and motor function
  5. General well being and level of pain





# Complications

## Late



- Retention of urine
- Sepsis or infection
- Hematoma
- Paralysis (very rare)
- Post dural puncture headache

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# SPA, other procedures



- Perineal repair – sacral roots
- Removal of retained placenta – uterine (T10) -> T8
- Forceps delivery – uterine (T10) -> T8 or if CS -> T4



# Key points again!



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# Thank you!

E-mail me at: [richard.shore@karolinska.se](mailto:richard.shore@karolinska.se)



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Picture from [africa.unfpa.org](http://africa.unfpa.org)

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