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Labour and delivery

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Obstetrics and Gynecolgy

Definition

- **Labour** = process by which the fetus is delivered
- **Live birth** - newborn has at least one signs of life regardless of pregnancy duration
- **Stillbirth** - fetus born without signs of life and
  - Weighting **500g** and more
  - If weight cannot be determined, born after **finished 22. week** of gestation
  - If the duration of pregnancy cannot be determined, at least **25cm long**

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Labour date

- estimated data of the labour according:

- first fetal movement
- date of the conception
- **ultrasound measurement**
- date of the last menstrual period

- average pregnancy duration:
- 40 weeks (280 days) from the last date of the menstrual period
- 38 weeks (266 days) from the conception

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Labour date

- Premature labour
  - 24 – 36 gestational weeks
- Term labour
  - 38 – 42 gestational week
- Post term labour
  - after 42 gestational week

- until 24 gestational week = abortion

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Overview

- Vaginal / Caesarean section
- Spontaneous / induced labour
- Medicamental labour (spontaneous beggining)
- Operative labour (VEX, forceps)

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Overview

- Onset of labour – uterine contractions become regular and cervical effacement and dilatation becomes progressive.
- 4 stages
- 3 factors affecting progression of labor (3 P)
  - **Power** – uterine activity
  - **Passage** – birth canal
  - **Passenger** – position, presentation, size

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Labour forces

- **Uterine activity**
  - Relaxed during pregnancy
  - Mild irregular non-progressive contractions may occur - **Braxton Hicks contractions**
  - **(dolores praesagientes)**
    - may be falsly preceived as onset of labour
  - During labour **regular contractions** and **retraction** of myometrium
  - **Frequency**, **length** of contractions and **time between** contractions is monitored
- **Abdominal muscles**
- **Gravitation**

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Labour forces - disorders

Hyperkinetic	Hypokinetic	Discoordination	Abdominal muscles
• Hyperactivity • Hypertonus	• Primary hypoactivity • Secondary hypoactivity	• Discoordinated contraction wave	• Neurodegenerative disorders (myasthenia gravis, spinal lesions) • Lowered defecation reflex (epidural analgesia) • Insufficient abdominal muscles

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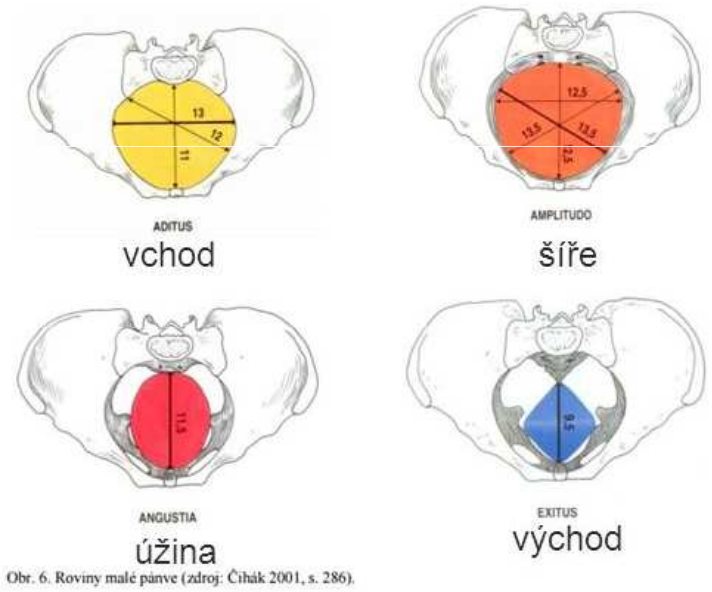
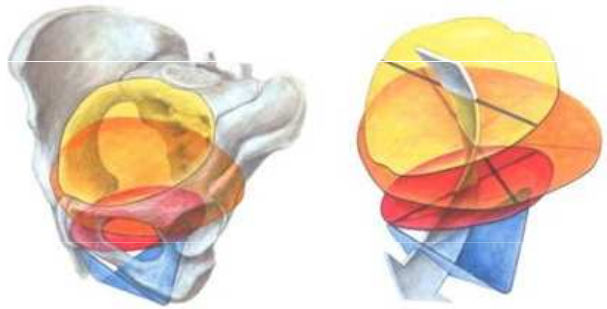
Birth canal

- Bony pelvis
  - Aditus pelvis
  - Amplitudo pelvis
  - Angustia pelvis
  - Exitus pelvis
- Soft tissue
  - Lower uterine segment
  - Vaginal walls
  - Vulva
  - Pelvic floor muscles
  - Perineum



Obr. 6. Roviny malé pánve (zdroj: Čihák 2001, s. 286).



Obr. 7. Roviny malé pánve a naznačení rotace hlavičky plodu během porodu (zdroj: Čihák 2001, s. 285–287).

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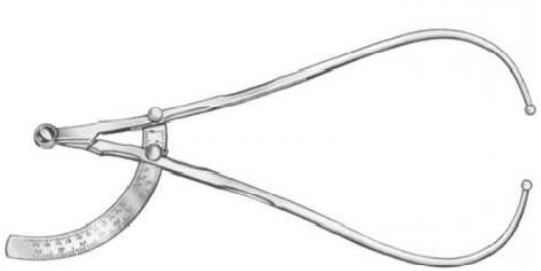
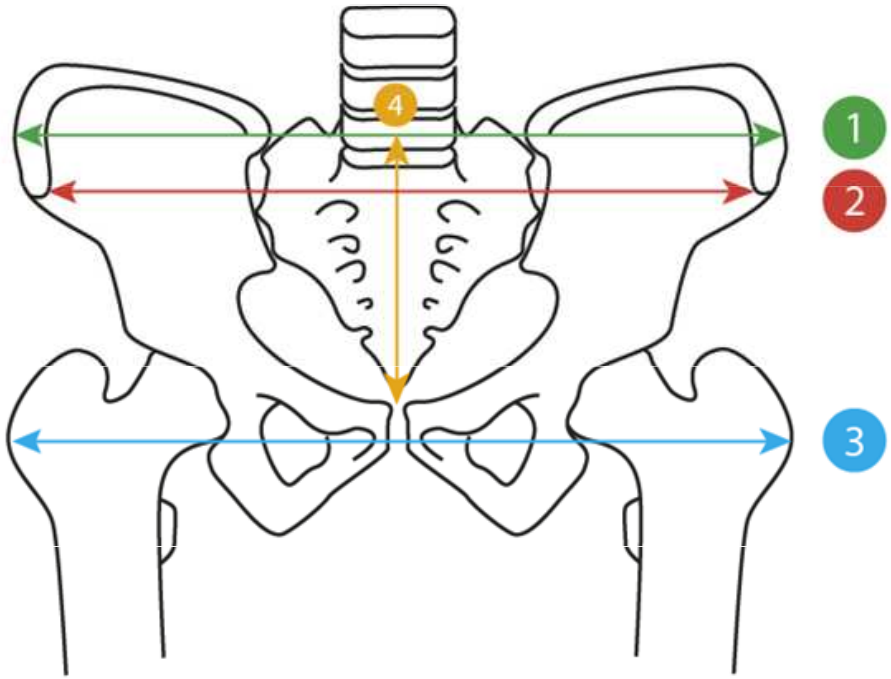
Birth canal

- Pelvic diamteres
  - Disatntia bicristalis
  - Distatntia bispinalis
  - Distantia bitrochanterica
  - Conjugata externa
- Pelvimetry





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Birth canal - disorders

Pelvic deformity	Cephalopelvic disproportion	Symphyseolysis
• Posttraumatic • Postoperative • Rickets in past	• Disproportion in the size of fetus and the patients pelvis	

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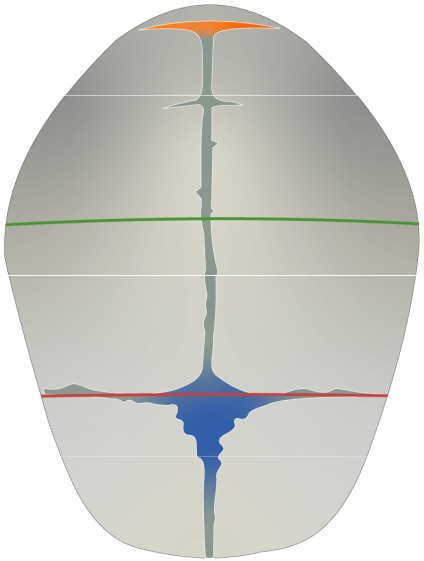
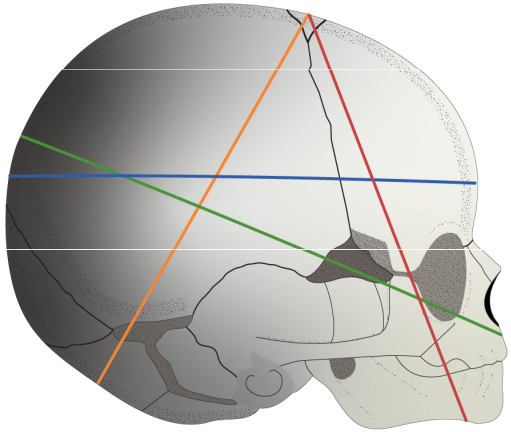
Fetus

- The most freqent fetus presentation – cephalic.
- Fetus head - (size, shape) – influence on conduct of labour, labour outcome
- Skull: two frontal bones, two parietal bones, two temporal bones, one occipital bone
- Joints: frontal, saggital, lambdoid, occipital
- Fontanelle – big and small



Hlavička donošeného plodu – pohled shora

Malá fontanela
Velká fontanela
Biparietální průměr (9,5 cm)
Bitemporální průměr (8 cm)



Hlavička donošeného plodu – pohled ze strany:

Subokcipitobregmatický průměr (9,5 cm, obvod 32 cm)
Frontookcipitální průměr (12 cm, obvod 34 cm)
Maxiloparietální průměr (13,5 cm, obvod 36 cm)
Submentobregmatický průměr (9,5 cm, obvod 32 cm)

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I. Stage of labour

- Preparatory stadium (dolores praesagientes, preparing of uterine muscles, going down uterus, cervical slimy secretion)

- Onset: **regular uterine contractions which cause progress in cervical effacement and dilatation**
- End of the I. stage: **complete cervical dilatation**
- Latent phase and active phase (from 3 cm)
- According to our standards no longer than **10 hours** (regardless of the use of epidural)

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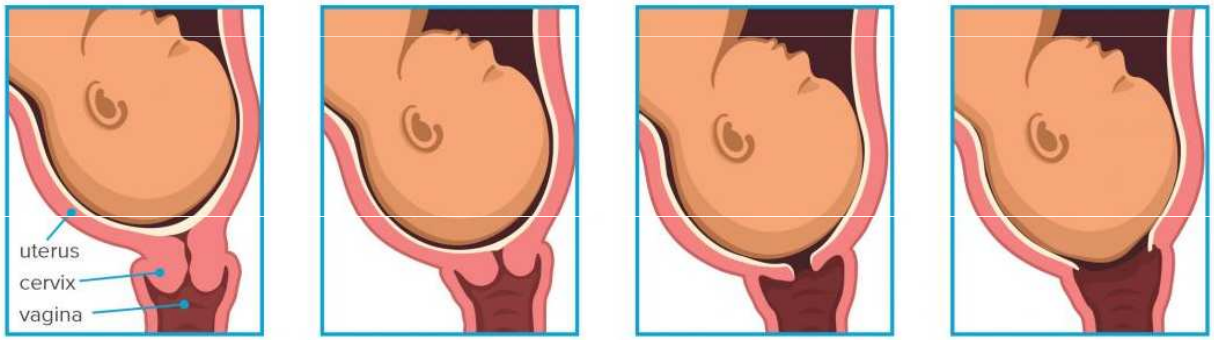
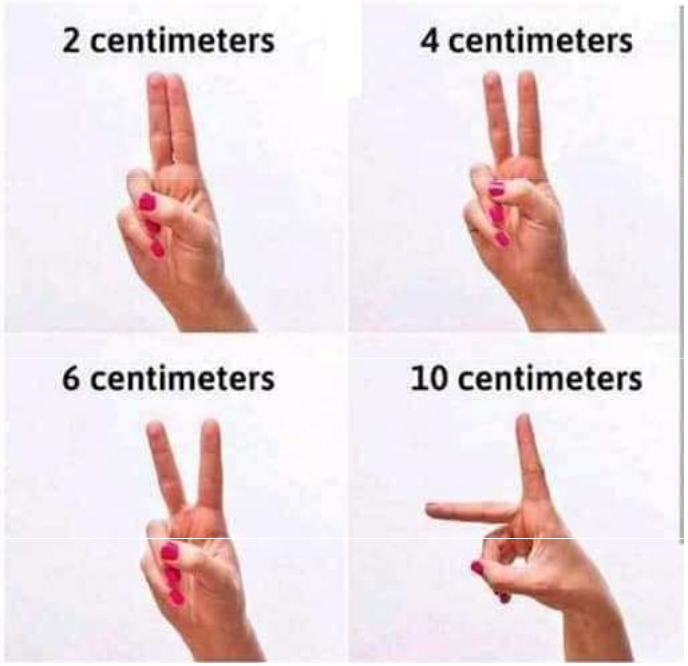
I. Stage of labour – monitoring

- Fetal wellbeing – CTG, amniotic fluid color
- Mothers wellbeing – blood pressure
- Labour progression – dilatation of cervix





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I. Stage of labour – disorders

- Secondary arrest of labour – previously adequate progress
- Primarily dysfunctional labour – slow from onset
- Causes:

Uterine activity (Power)	**Birth canal** (Passage)	**Fetus** (Passenger)
• Inefficient uterine activity • Most common	• Inadequate pelvis	• Malposition • Malpresentation • Large baby

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II. Stage of labour

- Onset: **complete cervical dilatation** (end of the first stage)
- End of the II. stage: **delivery of the baby**
- **Pasive** – descent of the neonates head through birth canal
- **Active** – active pushing efforts of the mother
- According to our standards no longer than **60 minutes**

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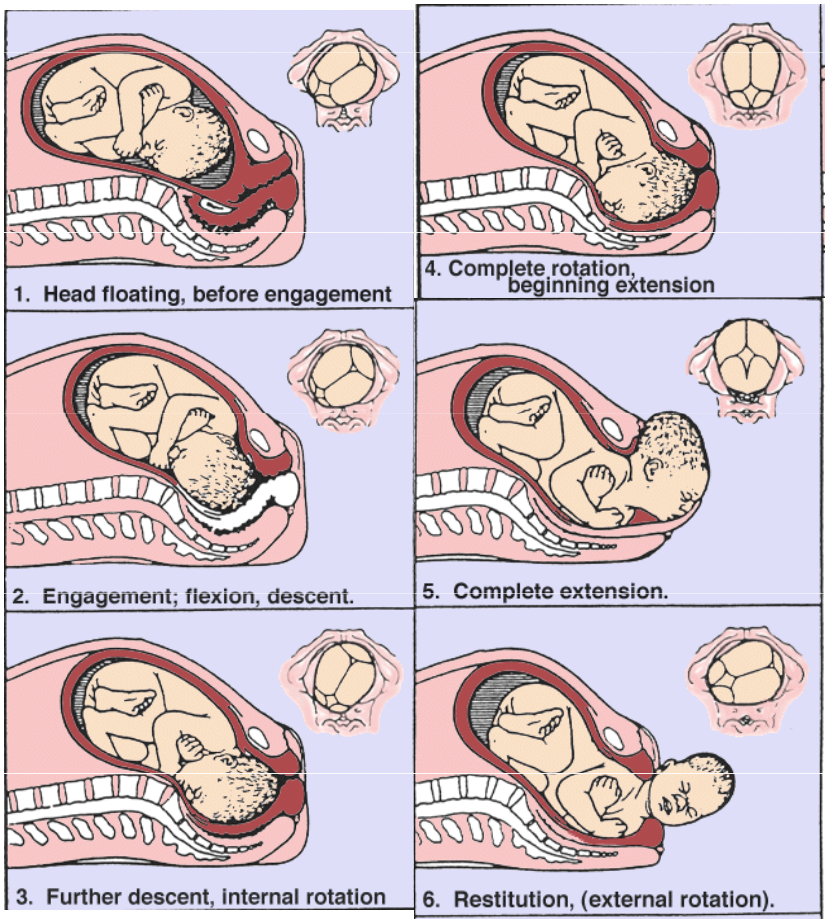
II. Stage of labour

- **Head** delivery
  - Flexion
  - Progression
  - Internal rotation
  - Extension (around symphysis)
  - External rotation



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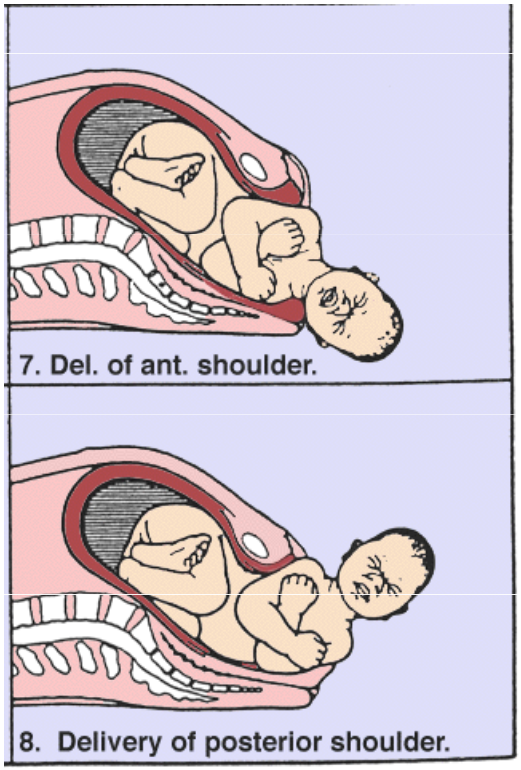
II. Stage of labour

- **Shoulders** delivery
  - Rotation of the anterior shoulder behind symphysis
  - Delivery of the anterior shoulder
  - Delivery of the posterior shoulder
- Rest of the **body**
  - Usually passively follows after delivery of the head and shoulders



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II. Stage of labour – disorders

Progression
• Uterine activity • Malpresentation • Birth canal

Shoulder dystocia
• Anterior shoulder impacted against the symphysis • **1.** McRoberts manoeuvre + suprapubic pressure • **2.** Internal manoeuvers

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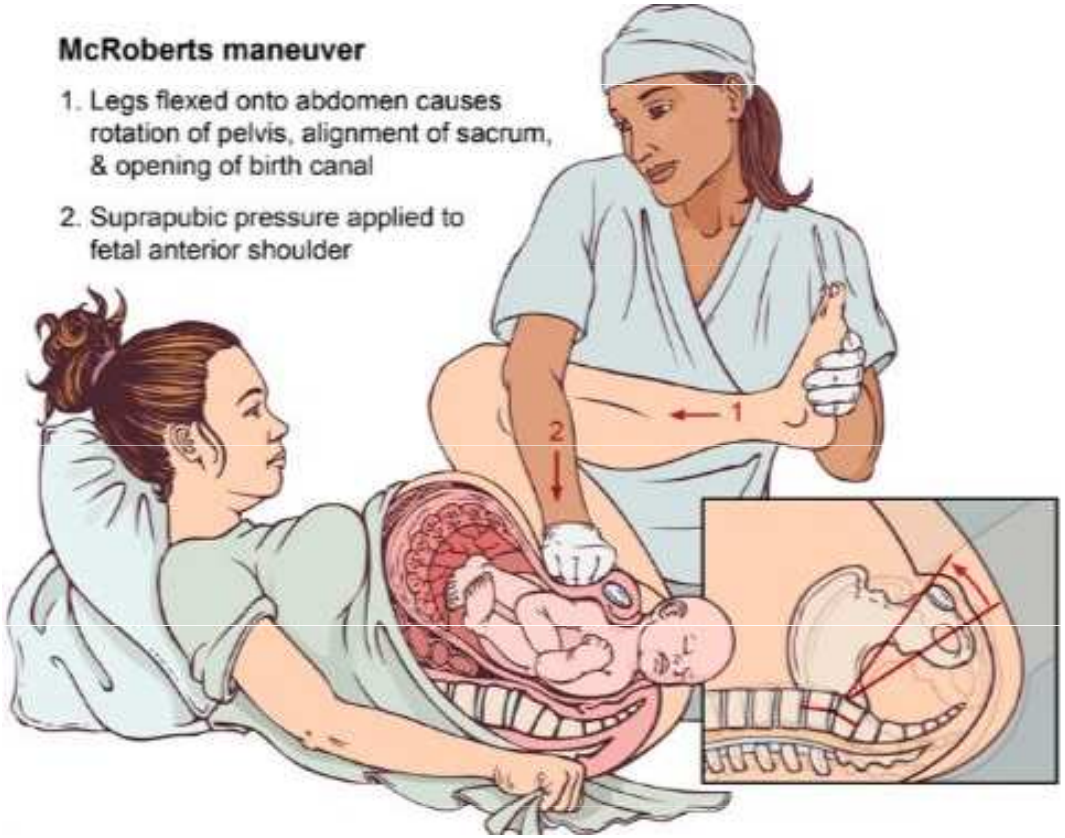
Shoulder dystocia



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III. Stage of labour

- expeling placenta and fetal membranes
- From delivery of fetus until **delivery of placenta**
- Should not take longer than **60 minutes**
- Active management – **use of uterotonics**

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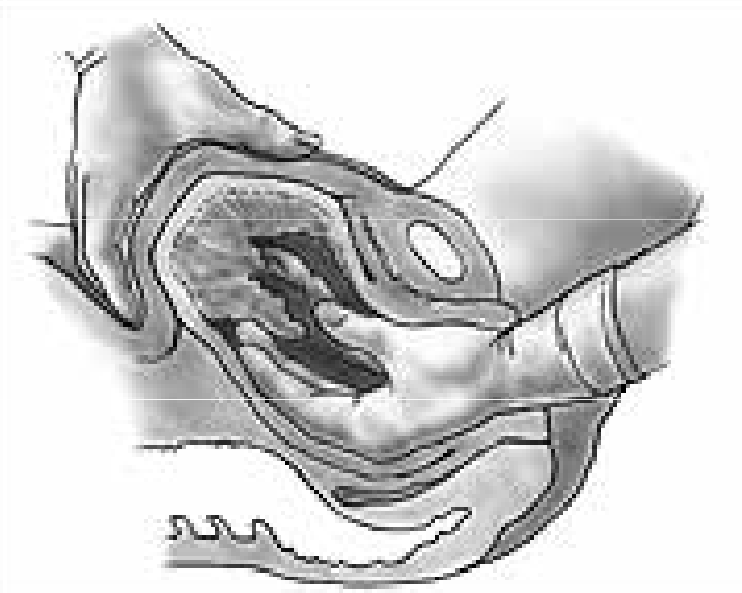
III. Stage of labour - disorders

- **Retention of placenta** – manual extraction in general anesthesia



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IV. Stage of labour

- First **two hours** after delivery
- Complications most commonly occur during this time

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IV. Stage of labour – disorders

- Postpartum bleeding (4 T)
  - **Tone** – uterine hypotonia
  - **Trauma** – birth canal trauma (vaginal wall, perineum, cervix, hematma)
  - **Tissue** – retention of part of the placenta
  - **Thrombin** – coagulopathy

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Delivery room incoming

- Anamnesis
- Examination – external + internal = obstetric
  - blood presure, pulse, body temperature
- Nonstress test - cardiotocography
- Ultrasound - position, estimated weight, (doppler sonography)

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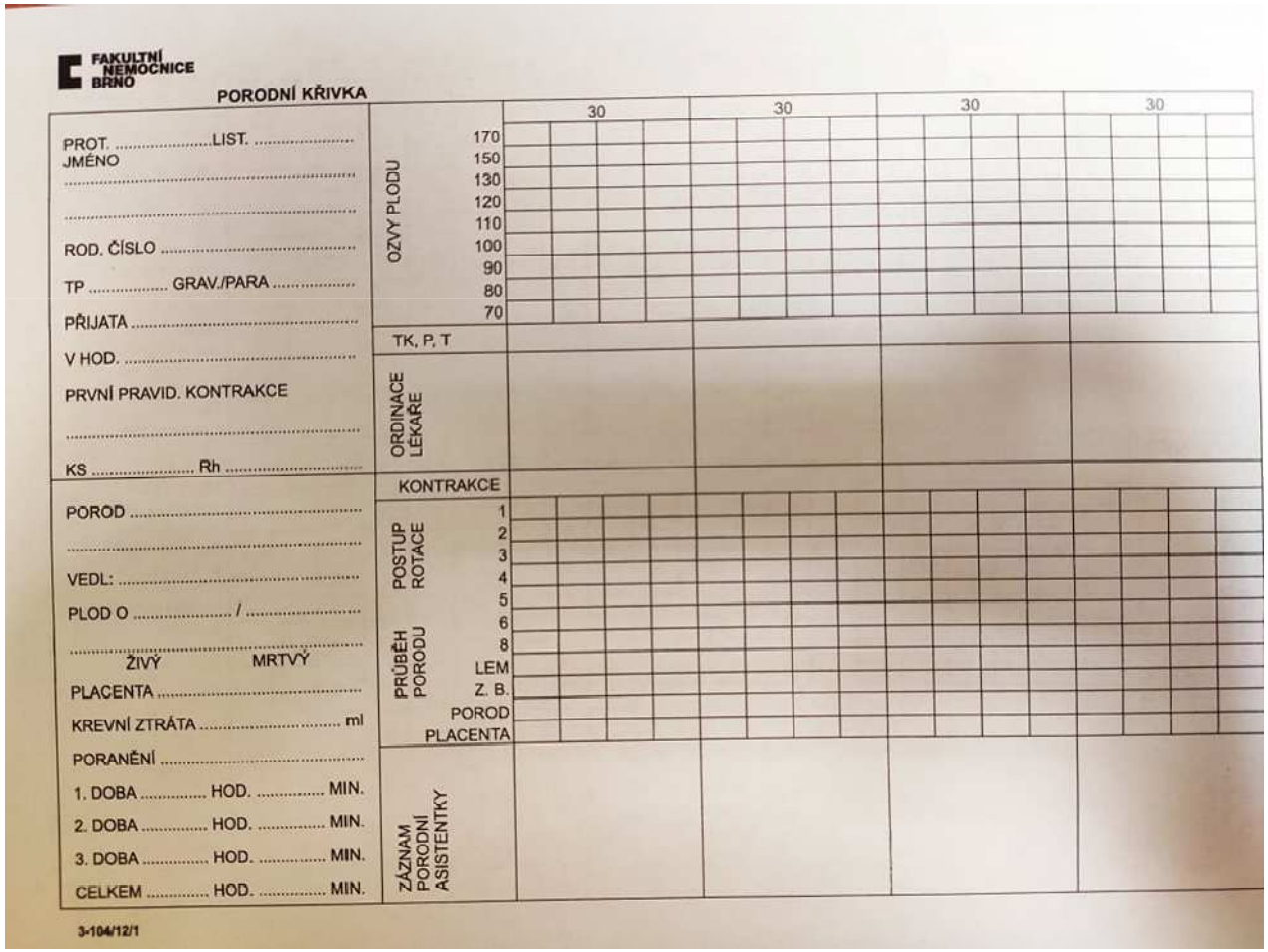
Delivery monitoring

- Partogram


FAKULTNÍ NEMOCNICE BRNO

PORODNÍ KŘIVKA

PROT. ..... LIST. .....
JMÉNO
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ROD. ČÍSLO .....
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1. DOBA ..... HOD. ..... MIN.
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3. DOBA ..... HOD. ..... MIN.
CELKEM ..... HOD. ..... MIN.

OZVY PLODU: 170, 150, 130, 120, 110, 100, 90, 80, 70
30 30 30 30
TK, P, T
ORDINACE LÉKAŘE
KONTRAKCE
POSTUP ROTACE
PRŮBĚH PORODU: 1, 2, 3, 4, 5, 6, 8, LEM, Z. B., POROD, PLACENTA
ZÁZNAM PORODNÍ ASISTENTKY

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Delivery monitoring

- Patient monitoring
  - blood presure, pulse, body temperature, pain, psychical status
  - uterine contractions – external examination and monitoring
  - labour progression – internal examination
  - bleeding and coagulability
- Fetal monitoring
  - Fetal heart rate - cardiotocography (external, internal)
  - intrapartal fetal pulse oxymetry
  - S – T analysis (fetal EKG)
  - Amnionic fluid quality
  - ultrasound examination - presentation,

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Induction and preinduction of labour

- Indication:
  - **Obstetric** (Prodloužené těhotenství, FGR, uteroplacentární insuficiencie, diabetes, …)
  - **Medical** (Závažná hypertenze, renální onemocnění, …)
- Methods:
  - **Mechanical:**
    - **Hamilton manouver** – separation of the membranes from the cervix leads to the local release of prostaglandins
    - **Cervical dilatators**
  - **Pharmacological**: Prostaglandins, Oxytocin
  - **Other methods** (questionable effectivity but not harmful): sexual intercourse, herbal remedies (raspberry leaf tea), nipple stimulation

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Thanks for your attention!

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