EXAMINATION OF THE NEWBORN

INDICATIONS

Routine discharge check
A thorough physical examination of every newborn baby is good practice and forms a core item of the UK Child Health Surveillance programme

- Ideally performed >24 hr after birth to:
  - confirm apparent normality
  - detect abnormalities/anomalies
  - provide plan of care
  - provide reassurance to parents and opportunity for discussion

EQUIPMENT

- Maternal and baby notes
- Stethoscope
- Ophthalmoscope
- Measuring tape

AIMS

- Identify congenital malformations
- Identify common neonatal problems and initiate management
- Continue with screening, begun antenatally, to identify need for specific interventions (e.g. immunisation)

PRE-PROCEDURE

- Before undertaking clinical examination, familiarise yourself with maternal history and pregnancy records, including:
  - maternal medical, obstetric and social history
  - paternal medical history, if appropriate
  - family health, history of congenital diseases
  - identify drugs mother may have taken during pregnancy and in labour
  - health of siblings
  - identify pregnancy complications, blood tests, ultrasound scans, admissions to hospital
  - identify maternal blood group, presence of antibodies, serology results for sexually transmitted diseases
  - duration of labour, type of delivery, duration of rupture or membranes, condition of liquor
  - Apgar scores and whether resuscitation required
  - birth weight, gestational age, head circumference

Consent and preparation

- Introduce yourself to mother and gain oral consent. Ask about particular concerns
- Keep baby warm and examine in quiet environment

PROCEDURE

Skin examination

- Hydration
- Rashes: including erythema toxicum, milia, miliaria, staphylococcal skin infection, candida
- Pigmented lesions: naevi, Mongolian blue spots, birth marks, café au lait spots
- Bruises: traumatic lesions, petechiae
- Cutis aplasia
- Tufts of hair not on head
- Vascular lesions: haemangioma, port wine stain, simple naevus
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- Colour: pink/cyanosis/jaundice/pallor/plethora
- Acrocyanosis
- Cutis marmorata

**Facial examination**
- General facial appearance to identify common syndromes

**Eyes**
- Shape
- Slant
- Size
- Position
- Strabismus
- Nystagmus
- Red reflex
- Presence of colobomata
- Discharges

**Nose**
- Nasal flaring
- Patency

**Ears:**
- Shape
- Position
- Tags or pits

**Mouth**
- Size
- Cleft lip
- Symmetry of movement
- Swellings, Epstein's pearls, ranula, tongue tie (for parental reassurance)
- Teeth
- Cleft palate, hard/soft palate, (by both inspection and palpation)
- Sucking

**Skull**
- Palpate:
  - skull for sutures and shape/cranio-synostosis
  - swellings on scalp, especially crossing suture lines, cephalhaematoma
  - signs of trauma associated with birth (e.g. chignon from vacuum extraction)
  - sutures for ridging or undue separation

**Neck**
- Swellings
- Movement
- Webbing
- Traumatic lesions from forceps delivery

**Clavicles**
- For fracture

**Arms and legs**
- Position and symmetry of movement
- Swelling and bruising
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**Hands and feet**
- Extra digits (polydactyly)
- Syndactyly, clinodactyly
- Palmer creases
- Skin tags
- Position and configuration of feet looking for fixed/positional talipes
- Overlapping toes

**Hips**
- Developmental dysplasia using Ortolani's and Barlow's manoeuvres, symmetry of gluteal skin folds (if abnormal or close family history of CDH: refer for hip scan)

**Spine**
- Curvatures
- Dimples
- Sacrococcygeal pits
- Hairy patches/naevi
- Hairy tuft on spine

**Systems**
Examine (inspection, palpation, auscultation) each system

**Respiratory system**
- Respiratory rate
- grunting
- nasal flaring
- Chest shape, asymmetry of rib cage, swellings
- nipple position, swelling/discharge/extra nipples
- Chest movement
- presence/absence of recession
- Auscultate for breath sounds

**Cardiovascular system**
- Skin colour/cyanosis
- Palpate:
  - precordium for thrills
  - peripheral and femoral pulses for rate and volume
  - central perfusion
- Auscultate for heart sounds, murmur(s), rate, rhythm
- Pulse oximetry of right arm and left leg (<3% difference in \( \text{SpO}_2 \) normal)

**Gastrointestinal tract**

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<th>Ask mother how well baby is feeding, whether baby has vomited and, if so, colour of vomit Biliary vomiting has a surgical cause and needs prompt stabilisation and referral</th>
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- Abdominal shape
- Presence of distension
- Cord stump for discharge or inflammation/umbilical hernia
- Presence and position of anus and patency
- Stools passed
- Palpate abdomen for tenderness, masses and palpable liver
- Auscultation is not routinely undertaken unless there are abdominal concerns
Genito-urinary system

- Inspect appearance of genitalia: ambiguous?
  
**Male genito-urinary system**
- Penis size (>1 cm)
- Position of urethral meatus. Look for hypospadias
- Inguinal hernia
- Chordee
- Urinary stream
- Scrotum for colour
- Palpate scrotum for presence of two testes and presence of hydrocoele

**Female genito-urinary system**
- Presence of vaginal discharge (reassure parents about pseudomenstruation)
- Skin tags
- Inguinal hernia
- Proximity of genitalia to anal sphincter
- Routine palpation of kidneys is not always necessary as antenatal scans will have assessed presence

**Neurological system**
- Before beginning examination, observe baby’s posture
- Assess:
  - muscle tone, grasp, responses to stimulation
  - behaviour
  - ability to suck
  - limb movements
  - cry
  - head size in relation to body weight
  - spine, presence of sacral pits, midline spinal skin lesions/tufts of hair
  - If neurological concerns, initiate Moro and stepping reflexes
- Responses to passive movements:
  - pull-to-sit
  - ventral suspension
- Palpate anterior fontanelle size (<3 cm × 3 cm) and tone

OUTCOME

**Documentation**
- Complete neonatal examination record in medical notes and sign and date it. Also complete child health record (Red book)
- Record any discussion or advice given to parents

**Normal examination**
- If no concerns raised, reassure parents of apparent normality and advise to seek advice if concerns arise at home
- GP will re-examine baby when 6 weeks old

**Abnormal examination**
- In first instance, seek advice from neonatal registrar/consultant
- Refer to postnatal ward guidelines for ongoing management
- Refer abnormalities to relevant senior doctor