

EXAMINATION OF THE NEWBORN

INDICATIONS

- Comprehensive physical examination performed within <72 hr of life
- See: <https://www.gov.uk/government/publications/newborn-and-infant-physical-examination-programme-handbook/newborn-and-infant-physical-examination-screening-programme-handbook>
- See: <https://www.gov.uk/topic/population-screening-programmes/newborn-infant-physical-examination>
- Newborn assessments should take into account any impacts of race and ethnicity, especially in relation to skin colour assessment, jaundice and cyanosis. See **RHO- Neonatal Executive-Summary.pdf**
- Includes screening for:
 - palatal defects
 - developmental dysplasia of the hip
 - congenital cataracts
 - cryptorchidism
 - heart murmurs
- General physical examination
- Examination has limitations and cannot identify all abnormalities that may be present in the newborn period
- Provides reassurance to parents and opportunity for discussion

EQUIPMENT

- Maternal and baby notes
- Stethoscope
- Ophthalmoscope
- Tongue depressor
- Torch
- 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 available
 - family health, history of congenital diseases, hip dysplasia, congenital heart problems
 - identify drugs mother may have taken during pregnancy and in labour
 - newborn health history of siblings and father
 - 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 of membranes, condition of liquor
 - Apgar scores and whether resuscitation required
 - birth weight, gestational age, head circumference

Consent and preparation

- Introduce yourself to parent and gain verbal 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, congenital dermal melanocytosis (formerly called Mongolian blue spots), birth marks, café au lait spots
- Bruises: traumatic lesions, petechiae
- Cutis aplasia
- Tufts of hair other than on head
- Vascular lesions: haemangioma, port wine stain, simple naevus
- Colour: pink/cyanosis/jaundice/pallor/plethora – may be challenging to assess in some babies due to race or ethnicity. Assess sclera and gums for jaundice and mouth mucosa for cyanosis
- Consider transcutaneous bilirubinometer reading check for jaundice
- Consider pulse oximetry check for cyanosis
- 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
- Check sclera for jaundice

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 (using tongue depressor) and palpation]
- Sucking
- Check gums for jaundice
- Check mouth mucosa for cyanosis

Skull

- Palpate:
 - skull for sutures and shape/cranio-synostosis

Examination of the newborn 2025–28

- swellings on scalp, especially crossing suture lines, cephalhaematoma
- signs of trauma associated with birth (e.g. chignon from vacuum extraction)
- subgaleal haemorrhage [see **Subgaleal haemorrhage (SGH)** guideline]
- 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

Hands and feet

- Extra digits (polydactyly)
- Syndactyly, clinodactyly, camptodactyly
- Palmar 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 [see **Developmental dysplasia of the hip (DDH)** guideline]

Spine

- Curvatures
- Dimples
- Sacrococcygeal pits
- Hairy tuft on skin overlying spine

Systems

- Examine (inspection, palpation, auscultation) each system

Respiratory

- 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

- 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 check – see **Pulse oximetry (universal) screening** guideline

Gastrointestinal tract

Ask mother how well baby is feeding, whether baby has vomited and, if so, colour of vomit

Bilious vomiting may have a surgical cause and needs prompt stabilisation and referral

- 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

Ask mother if baby has passed urine, and how frequently

- Inspect appearance of genitalia: any disorder of sexual development?
- Routine palpation of kidneys not always necessary as antenatal scans will have assessed presence

Male genito-urinary system

- Penis size (should be >1 cm)
- Position of urethral meatus. Look for hypospadias
- Inguinal hernia
- Chordee
- Urinary stream
- Scrotum for colour
- Palpate scrotum for presence of 2 testes and absence of hydrocele

Female genito-urinary system

- Presence of vaginal discharge (reassure parents about pseudomenstruation)
- Skin tags
- Inguinal hernia
- Proximity of genitalia to anal sphincter

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

- Input findings onto NIPE Smart including need for BCG and pulse oximetry findings. Print one sided. Print out can be added to Red Book (Child Health Record).

Document on Badgernet completion of neonatal examination and any discussion or advice given to parents.**Normal examination**

Examination of the newborn 2025–28

- If no concerns raised, reassure parents of apparent normality and advise to seek advice if concerns arise at home
- GP will re-examine baby aged 6–8 weeks

Abnormal examination

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