

# MCN for Neonatology, West Of Scotland, Neonatal Guidelines, Virological assessment of fetuses and neonates

## General



**West of Scotland SPECIALIST VIROLOGY CENTRE**  
Level 5 New Lister Building, Glasgow Royal Infirmary, 10-16 Alexandra Parade, Glasgow, G31 2ER

- Contacting Laboratory - email rather than phone - [west.ssvc2@nhs.scot](mailto:west.ssvc2@nhs.scot)  
Opening hours - Weekdays 8am-8pm Weekend 8am – 2pm
- Out of hours - contact on call clinical virology team via GRI switchboard (0141 211 4000)
- There are only a limited number of tests available out of hours.
- Routine samples are delivered to the laboratory by porter/ pod system/ via other labs.
- For urgent samples during working hours email the lab and arrange a taxi. Check when the results are likely to be available and provide us with contact details.
- All authorised results are available via SCI store or clinical portal providing the CHI number is included on the request form.
- Swabs should be placed in MSS. MSS has a long shelf life at room temperature and is suitable for all types of swab including eye swabs (chlamydia). Use a dry swab, squeeze the swabbed material into MSS by pressing against the side of the vial and discard the swab. Do not leave the swab in the medium. MSS is an irritant and should not come into contact with the baby
- MSS can be obtained directly from us or via procurement.

## Samples

1. Always provide clinical details including age, gestation, date of onset of symptoms and any fetal abnormalities (if relevant). This helps with test selection.
2. We no longer perform TORCH screens on babies with a diagnosis of conjugated hyperbilirubinaemia. These babies should have blood sent for HSV, urine sent for CMV and throat swabs sent for HSV, CMV and enterovirus.
3. It is helpful to provide the mother's name and date of birth. Testing of antenatal samples may help confirm or rule out a specific infection.
4. Routine testing of maternal or fetal samples from IUD cases is rarely helpful. If a specific pathogen is suspected please write this on the form and send with a small piece of placental tissue (not swab).
5. Amniotic fluid / fetal blood samples can be tested but not until at least 6 weeks post acute illness, and not before 18-20 weeks gestation.
6. As a general principle always take a sample from the affected system.

## Prenatal/Postnatal Infections

- Classical features of in utero infections include the following:  
**CMV** - Hepatosplenomegaly, microcephaly, chorioretinitis, cerebral calcification, thrombocytopenia. (see WoS guideline for management)  
**Rubella** - Cardiac, ocular and neurological defects, hepatosplenomegaly, purpura. This is extremely rare.  
**Toxoplasma** - Hydrocephalus, retinochoroiditis, hepatitis, pneumonia, myocarditis  
**Erythrovirus B19** - Fetal anaemia / hydrops (B19 is not associated with congenital malformation)
- Congenital CMV is diagnosed by sending a urine +/- saliva for CMV PCR testing. This must be done within 21 days of life
- To diagnose HIV infection, see WoS policy or discuss with virology.
- Testing for HBV or HCV in the under 1's is not recommended as maternal antibodies may still be present. Please discuss with virologist if testing is required.
- If HSV disease is suspected send swabs, urine and blood +/- CSF. Surface swabs and a blood are required if the baby has been exposed but is not showing signs of infection. (see WoS guideline)

## Recent Infection (Postnatal)

1. Diagnosis relies on samples taken from the system(s) involved (see table).
2. Most tests use PCR technology, these take an average 3-5 hours to complete from arrival in the lab. Most of the tests are multiplexed. This means that a sample may be tested for more viruses than you requested  
**Respiratory Screen by PCR (2 parts)**  
**RS1** – influenza A/B, RSV.  
**RS2** – parainfluenza 1-4, coronaviruses, rhinovirus, human metapneumovirus, adenovirus, mycoplasma.  
In addition, CMV is tested on the respiratory secretions of all babies <21 days of age & Chlamydia is tested on all negative samples in babies (<2month age). (NB- if Pertussis PCR testing is required this must be requested separately)  
**Blood** – CMV, EBV, adenovirus, HSV  
**CSF** – HSV1/2, VZV, enterovirus.  
**Skin swab** – HSV/VZV.  
**Stool samples** – norovirus, rotavirus, sapovirus, astrovirus, adenovirus  
**Eyes** – HSV, VZV, Adenovirus, Chlamydia trachomatis
3. In situations which have infection control implications (e.g. outbreak or VZ contact), please contact the lab and infection control to coordinate testing.

Neonatal guide to virology tests – October 2024	SAMPLES TO SEND to make initial diagnosis **								PATHOGENS TO CONSIDER									
In Utero	Throat Swab OR NPA OR ETT Secretions	Skin Vesicle Swab	Eye Swab <sup>2</sup>	Urine	Faeces	CSF	Blood	Maternal Blood	Respiratory viruses <sup>1</sup>	CMV	B19	Chlamydia	Toxoplasma	Rubella <sup>3</sup>	Gastro viruses <sup>3</sup>	Enteroviruses inc parechoviruses	VZV	HSV
Cytomegalovirus (CMV)	√			√														
Erythrovirus B19							√											
Toxoplasma Gondii							√	√										
Rubella							√	√										
Varicella zoster (VZV)		√					√	√										
Peri / Post Partum																		
Clinical Features in neonate																		
a) myocarditis, meningitis / encephalitis	√			√	√	√	√								√			√
b) Skin vesicular rash		√															√	√
c) Eye conjunctivitis			√									√						
d) Diarrhoea					√									√	√			
e) Colitis					√		√		√					√	√			
f) Upper / Lower Respiratory Tract	√								√									
g) Blood Borne Viruses							√	√										
h) Contact with herpes simplex	√	√	√				√											√
i) Sepsis	√					√	√								√			√

\*\* Samples are from the neonate unless otherwise specified