

Virological assessment of patients: a brief guide for General Practitioners



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Tests for recent infection or acute infection (see table on the reverse)

- Polymerase chain reaction (PCR) for viral nucleic acid (either RNA or DNA) is our front-line assay to detect many viral pathogens. Preferred specimens for virus detection are the ones taken as early as possible. For example, in suspected viral respiratory infection please collect respiratory specimens rather than blood for antibodies and in patients with a vesicular rash, collect vesicle fluid or a swab rather than blood for antibodies.
- Sera remain useful, especially for HIV, hepatitis viruses, parvovirus B19, measles, rubella, EBV and CMV. In acute infections IgM may not appear early on in illness. Please do not send serum for gastrointestinal viruses.
- In illnesses with non-specific features such as malaise, tiredness and myalgia, it is not worth sending sera unless there are localising symptoms / signs
- In suspected viral haemorrhagic fever or SARS or other exotic viruses in a returning traveller: please contact the virus laboratory for discussion (020 3299 6298 or via King's switchboard out of hours). The Public Health Unit may have to be involved at a very early stage.

Specimen collection

Please use **Virus Transport Medium (VTM)** for non-blood sample transport. Commercially available VTM can also be used. VTM is ideal for swabs from genital herpes, vesicular rash, eyes and upper respiratory tract. Using a dry swab, squeeze the swabbed material into VTM and leave the swab in VTM. Use sterile saline for throat gargles and **NOT** VTM as VTM contains antibiotics / antifungals to which the patient may be allergic. Please use an **APTIMA collection kit for swabs or urine for *Chlamydia trachomatis* and *Neisseriae gonorrhoea*** Nucleic Acid Testing. To obtain any of these, telephone laboratory reception staff on 020 3299 6214 / 6050 and leave your name, address and quantity required.

Oracol kits are preferred for swabbing the mouth to confirm a case of measles, mumps or rubella infection and are available from your South East London Health Protection Unit (020 3049 4280). This is the preferred method in children.

www.clinical-virology.org or www.kingspath.co.uk for Virology User Manual

Tests for evidence of previous exposure to that virus or immunisation response

- Blood (yellow serum separation tube SST or red topped) is the preferred.
- Please request an IgG test to determine previous exposure to CMV, EBV, parvovirus B19, HAV, HBV (HB core total antibody) and VZV.
- Post-vaccine testing is recommended following hepatitis B virus immunisation. Please tell us about the dates and doses of HBV vaccines administered.
- Post-vaccine testing for immunity is **NOT** recommended for measles, mumps, VZV and HAV as the assays used may not be sensitive enough for vaccine induced IgG.

Some HBV terminology

- HBV carrier: HBsAg +^{ve}, HB core total antibody +^{ve} and any HBeAg / HB 'e' antibody status (we no longer use the term 'low infectivity HBV carrier' for HBeAg -^{ve} patients but HBeAg +^{ve} = high infectivity carrier).
- Evidence of past HBV exposure: HBsAg -^{ve}, HB core total antibody +^{ve} and any HB surface antibody level. Do not vaccinate these patients. It is always useful to test for HB core total antibody in individuals born in areas of the world where HBV is endemic.
- Immune to HBV because of vaccination: HB surface antibody level > 10 mIU/ml (tested within 6 months of full vaccination). These are also HBsAg -^{ve}, HB core total antibody -^{ve}, but these tests are not necessary in all patients

Who tests what?

- **Blood Sciences Laboratory at KingsPath** performs the following screening tests: HAV (IgM and total antibody), HBV (HB surface antibody, HB core total antibody), rubella (IgG and IgM) and HCV antibody.
- **South London Specialist Virology Centre, HPA Regional Laboratory** tests a wider portfolio as described in these pages.

Urgent specimens

- Pregnant, in recent contact with a case of chickenpox: no testing is necessary if there is convincing evidence of chickenpox in the past. Otherwise, please supply details of date of contact and type of contact (face-to-face / same room for 15 minutes / own child).
- For all other urgent testing please phone the laboratory prior to despatching the samples so that we can process your patient's specimen immediately. Please include your contact number on the request form.

Dispatching

- **Routine specimens** – route through local microbiology laboratories or through the collection van in the case of Kings College Hospital NHS Foundation Trust or through alternate local arrangements.
- **Urgent specimens during working hours** – discuss with lab first, then send by collection van or Taxi. 020 3299 6298 / 6155 / 6156 / 6296
- **Urgent specimens out-of-hours** - discuss with on-call virologist 020 3299 9000

Table showing acute diseases and specimens to be collected for virological diagnosis; = preferred sample, = second-choice sample

System involved ↓	ACUTE clinical features ↓	Common pathogens in community ↓	Lesion specimens					Respiratory specimens (any one of these is enough)				Excretory specimens		Blood (clotted)	
			Vesicle	Eye	Conjunctival	Genital	Mouth / oral swab	Throat and nasal swab	Throat gargle	NPA	Sputum	Urine	Faeces	Acute + convalescent serum	
			Swabs in Virus Transport Medium (VTM)					using saline							
LABORATORY METHOD OF DIAGNOSIS →			Molecular methods: Real time PCR or APTIMA (TMA), qualitative or quantitative.										Serology		
Systemic	Pyrexia	Influenza viruses (winter)						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
	Lymphadenopathy	EBV (<40 years), CMV, <i>Toxoplasma gondii</i>													<input checked="" type="checkbox"/>
Gastrointestinal	Hepatitis	HAV, HBV, HCV, CMV, EBV													<input checked="" type="checkbox"/>
	Gastroenteritis	Rotavirus (< 5 year old) Norovirus												<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
Genito-urinary (GUM)	Suspected HIV	HIV-1 and HIV-2													<input checked="" type="checkbox"/>
	Vaginal discharge, urethritis, PID	<i>C. trachomatis</i> + <i>N gonorrhoeae</i>				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
	Vesicles / ulcers / erythema	HSV	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>									
Haematological	Persistent anaemia	Parvovirus B19													<input checked="" type="checkbox"/>
	Thrombocytopenia	EBV													<input checked="" type="checkbox"/>
	Atypical lymphocytes	EBV, CMV													<input checked="" type="checkbox"/>
Ophthalmic	Conjunctivitis, keratitis	Adenovirus, HSV, VZV		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
Nervous system	Aseptic Meningitis	Enterovirus													<input checked="" type="checkbox"/>
	Encephalitis	HSV, VZV												<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Febrile convulsions	Any virus					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Peripheral neuropathy	Viral aetiology is rare in UK	Call the lab to discuss possibilities based on patient travel history or ethnic origin												
Respiratory	Common cold, croup, bronchiolitis, 'flu', pharyngitis	Rhinovirus, parainfluenza virus, RSV, adenovirus, influenza virus, HMPV					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
	Pneumonia	<i>M pneumoniae</i> , <i>C. pneumoniae</i> , influenza					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Skin and mucosa	Mouth ulcers	HSV, enteroviruses	<input checked="" type="checkbox"/>												
	Maculopapular rash	Parvovirus B19/ measles / rubella					<input checked="" type="checkbox"/>	Oracol							<input checked="" type="checkbox"/>
	Vesicular rash	VZV, HSV, enteroviruses	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>
	Nodule	Molluscum contagiosum	Consider sending nodule biopsy for histopathology												
	Warts	HPV	Consider sending biopsy for histopathology												
Musculo-skeletal	Myalgia, arthralgia	B19, influenza, mycoplasma					<input checked="" type="checkbox"/> for flu	<input checked="" type="checkbox"/> for flu	<input checked="" type="checkbox"/> for flu	<input checked="" type="checkbox"/> for flu	<input checked="" type="checkbox"/> for flu				<input checked="" type="checkbox"/>