

H

H Pylori (Titre)

Please see HELICOBACTER SEROLOGY

5HIAA

Please see HYDROXYINDOLACETIC ACID (5HIAA)

21 HYDROLASE ANTIBODIES

Specimen required: **1 x SST (Serum)**

Department: Referred

HAEMOCHROMATOSIS GENE STUDIES (HLA-H)

Specimen required: **1 X EDTA – DO NOT REFRIGERATE**

Note: **A single unshared EDTA tube is required for this test.** If other biochemical tests are required please collect additional tubes.

Department: Referred test

Reference range: As stated on report

Comment: Haemochromatosis gene mutation test identifies the C282Y major and H63D minor mutations.

HAEMOGLOBIN A1C (HbA1c)

Specimen required: **1 x EDTA**

Department: Haematology

Reference range: Non diabetic level < 6%

Target < 7%

Poorly controlled range > 8%

Note: Levels of HbA1c are indicative of the circulating levels of glucose over the previous 60 days (which is the half-life of haemoglobin). The report will include an estimate of the mean blood glucose level over this period. Medicare Australia will only allow a rebate if the patient is a proven diabetic.

HAEMOGLOBINOPATHY STUDIES / HAEMOGLOBIN ELECTROPHORESIS

Specimen required: **1 x EDTA.**

Department: Haematology

This request includes: (i) HbA2
(i) HbF
(ii) HbH
(iii) Haemoglobin Electrophoresis for abnormal Hb bands
(iv) Hbf (by flow cytometry analysis in Feto-maternal haemorrhage)

HAEMOPHILIA GENE STUDIES

Specimen required: **1 x EDTA**

Department: Referred test

Note: Molecular test which may be requested for carrier diagnosis.

HAEMOPHILUS INFLUENZAE

Specimen required: **Sputum, Eye swabs or Ear swab (ruptured drum)**

Department: Microbiology

Note: Rarely isolated from genital sites or urine and can be invasive.

HAEMOPHILUS DUCREYI

Specimen required: **Gel swabs (Blue) for culture - Microbiology**

Dry swab (orange/white) for PCR

Department: Microbiology

Comment: Cause of ulcerating genital disease (SEA etc)

HAEMOSIDERIN

Specimen required: **Spot urine.**
Department: Histopathology
Reference range: Not detected.

HALASCA SCREEN

See THROMBOPHILIA SCREEN

HAMS TEST

TEST NO LONGER PERFORMED - REPLACE WITH FLOW CYTOMETRY FOR CD55, CD59.

SEE IMMUNOPHENOTYPING

Comment: These neutrophil and red cell antigens (CD55 and CD59) are decreased in Paroxysmal Nocturnal Haemoglobinuria (PNH)

HAND/FOOT/MOUTH DISEASE / ENTEROVIRUS

Specimen required: **Throat swab (Dry orange/white) swab for PCR, or Faeces samples, vesicle swab.**
Department: Referred test
Note: Serology testing is not available for Enteroviruses in WA, PCR is the preferred test.
Comment: Rash appearing in children. Vesicles/lesions appearing on hands and feet and mouth. Caused by Coxsackie or other enterovirus.

HAPTOGLOBIN

Specimen required: **Serum (1 x SST)**
Department: Biochemistry
Reference range: 0.3 - 2.0 g/L
Interpretation: HIGH - Acute phase response, Oestrogen or Steroid therapy
LOW - Intravascular haemolysis, megaloblastic anaemia, massive tissue haemorrhage

HB ELECTROPHORESIS / HB DNA

See HAEMOGLOBINOPATHY STUDIES

HCG

See HUMAN CHORIONIC GONADOTROPHIN

HEAVY METAL SCREEN

Specimen required: **2 x Trace Element (Royal blue top K₂EDTA) and Spot Urine** depending on metals requested.
Department: Biochemistry
Reference range: See individual metals.
Note: Please specify heavy metals required e.g. Lead, Mercury, Cadmium and Arsenic.

HEINZ BODIES

Specimen required: **Please refer patient to Clinipath Pathology Main Laboratory.**
1 x EDTA - Sample dispatched immediately after collection.
Department: Referred test
Reference range: Negative.
Interpretation: Positive in certain drug induced haemolytic anaemias.

HELICOBACTER BREATH TEST

Specimen required: **Breath Sample (Collected into special foil balloon)**
Please ensure patient is FASTING for minimum 4 hours including water
Follow instructions on the Kit box
Can ONLY be performed at Collection Centres

Department: Serology
Reference range: < 50 DPM
Note: Patient should have avoided the medications below **but only after** consultation with their doctor
i. Antibiotics for 4 weeks before test
ii. Sucralfate for at least 2 weeks before test
iii. Proton-pump inhibitors such as Losec, Somac or Zoton for at least 1 week before test
iv. H2 receptor antagonists and antacids during test and fasting period.

Comment: All Helicobacter breath tests are now eligible for a Medicare rebate. **Results** are reported Mon-Fri, all tests performed on Fri/Sat/Sun will be reported by 12.00noon Monday morning.

HELICOBACTER SEROLOGY

Specimen required: **Serum (1 x SST)**
Department: Serology
Reference values: < 6.25 U : Negative
6.25 - 7.00 U: Equivocal
> 7.00 U : Positive

Indications: Helicobacter pylori is accepted as a causative agent of type B gastritis and peptic ulcer disease, and is strongly associated with dyspepsia and several other upper gastrointestinal diseases.

Comment: The preferred test to assess successful eradication of Helicobacter pylori is Urea (C14) Breath test: 4-6 weeks after treatment is completed, see Helicobacter Breath Testing

HEPARIN CONTROL

Specimen required: **1 x Sodium citrate tube.**
Department: Haematology
Note: See PARTIAL THROMBOPLASTIN TIME.

HEPASCORE

Specimen required: **1 x dedicated (Serum no gel).**
Department: Referred

HEPATITIS SEROLOGY (HEP A, B & C)

Specimen required: **Serum (1 x SST)**
Department: Serology

Tests performed:	HEPATITIS A – Total	HAV-Total
	HEPATITIS A – IgM	HAV-IgM
	HEPATITIS B – SURFACE ANTIGEN	HBsAg
	HEPATITIS B – SURFACE ANTIBODY	Anti HBs
	HEPATITIS B – CORE ANTIBODY (Total)	Anti HBc
	HEPATITIS B – CORE IgM ANTIBODY	Anti HBc IgM
	HEPATITIS B – e ANTIGEN	HB e Ag (only if HBsAg are positive)
	HEPATITIS C – ANTIBODY	HCV

Recommended screening tests:

- (a) **Initial screen for acute hepatitis with elevated transaminase levels:**
Hepatitis A IgM Antibody (HAV-IgM)
Hepatitis B Surface Antigen (HBsAg)
Hepatitis B Core Antibody (Anti HBc)
Hepatitis B Core IgM Antibody (Anti HBc IgM) if indicated
Hepatitis C Antibody (Hep C)
- (b) **STD screen or post sexual exposure**
Hepatitis B Surface Antigen (HBsAg)
Hepatitis B Core Antibody (Anti HBc)

- (c) **Post-immunisation Screening:**
Hepatitis B Surface Antibody (Anti HBs)
Hepatitis A IgG Antibody
- (d) **Antenatal Screening:**
Hepatitis B Surface Antigen (HBsAg)
Hepatitis C Antibody (Hep C)
Other HBV tests can be added if desired
- (e) **Follow-up of known Hepatitis B Positive patients:**
Hepatitis B Surface Antigen (HBsAg)
Hepatitis B Core Antibody (Anti HBc)
Hepatitis B e Antigen (HB e Ag)
Hepatitis B e Antibodies
- (f) **Needlestick - PLEASE SPECIFY Donor or Recipient** (if not specified Needle Stick routine tests will be done; HBsAg, anti-HBS, Anti HB core HCV, HIV)
Note: These are initial tests only. For follow-up testing please discuss with Clinical Microbiologist
RECIPIENT (Urgent Serology Test)
Hepatitis B Surface Antibody (Anti HBs)
Hepatitis C Antibody
HIV Antibody

DONOR (Urgent Serology Test)
Hepatitis B Surface Antigen (HBsAg)
Hepatitis C Antibody
HIV Antibody

Comment: Reported as Detected or Not Detected for Hepatitis with appropriate interpretive comments.

HEPATITIS B DNA

Specimen required: **2 x EDTA . DO NOT USE HEPARINISED BLOOD Dedicated tubes are required.**
Required minimum sample of 200ul. Separate sample within 3 hours of collection. Freeze and transport frozen if the sample is to arrive at testing Laboratory longer than 72 hours after collection.

Department: Referred test

Note: Patient must be HbsAg positive before this test will be performed.
Usually only accepted if request is from a hepatologist specialist, must be discussed with the clinical microbiologist and Pathwest notified.

HEPATITIS C GENOTYPING

Specimen required: **Serum (1 x SST) Dedicated tube is required**

Department: Referred test

Comment: Performed in patients on HCV treatment and follow-up but only in discussion with microbiologist or if requested by hepatologist.

HEPATITIS C RNA (PCR)

Specimen required: **Serum (1 x SST). Dedicated tube is required.**

Department: Referred test

Note: Can be requested as Hep C PCR

HEPATITIS C RNA (QUANTITATIVE/VIRAL LOAD)

Specimen required: **Serum (1 x SST) Dedicated tube is required**

Department: Referred test

Note: Performed on patients on HCV treatment and follow-up but only in discussion with microbiologist or if requested by hepatologist.

HEPATITIS D ANTIBODY

Specimen required: **Serum (1 x SST)**

Department: Referred test

Note: Only performed if HBsAg is positive

HEPATITIS E ANTIBODY

Specimen required: **Serum (1 x SST)**
 Department: Referred test

HERBICIDES

Specimen required: **Spot urine sample after exposure to herbicides.**
 Department: Referred test
 Note: Specimens are referred. A private fee will apply for the test.

HERPES SIMPLEX I AND II

Specimen Required: **IMMUNOFLUORESCENCE: Special slides to be submitted using HSV I and HSV II kit,** available from Laboratory. Herpes can be detected rapidly (1-2 days turn-around time) by immunofluorescence if lesions are fresh. i.e. not healing yet
PCR: Dry swab for PCR is the preferred method (Dry orange swab)

See also: VIRUS DETECTION

HERPES SIMPLEX I AND II IGG ANTIBODY

Specimen required: **Serum (1 x SST)**
 Department: Referred test
 Results: Reported as Detected or Not Detected with appropriate interpretative comments.
 Comment: Demonstrates past Herpes Simplex infection. If lesions are present then Viral PCR is the appropriate test.

HFE GENE

SEE HAEMOCHROMATOSIS GENE STUDIES.

HISTAMINE

Specimen required: **1 X Lithium Heparin & 24 hr Urine (20ml HCL) Warn patient of acid danger**
Transport frozen

Department: Referred test
 Comment: Diet 24hrs prior to and during test should contain no fish, seafood, cheese or cheese spread.

HISTOPATHOLOGY

Comment: Routine processing of surgical biopsies is undertaken 6 days per week (Monday to Saturday) and most written reports are obtainable by mid morning, (Monday to Friday), for specimens processed the previous working day.

Some specimens such as large excision specimens, fatty specimens and excessively bloody specimens may require longer fixation for proper processing and hence the result may be delayed 24hrs.

Cases requiring additional stains are usually available by the afternoon, but in some cases may take longer. The Doctor concerned is usually notified of protracted delays in having reports finalized.

For urgent biopsies, a verbal report is obtainable early morning, providing they are clearly labelled as "urgent" and are received by 8.00pm the previous day. Urgent reports can also be generated by direct contact with any of the pathologists or scientific staff.

All requests should identify the site of the lesion and the type of biopsy specimen eg excisional, incisional, punch, shave curettage etc. Some indication as to the clinical diagnosis, eg ?dysplastic naevus, greatly assists the pathologist in making the final report.

Cont. over pg

COLLECTION PROCEDURES:

1) **Routine biopsies:** Should be placed in a specimen jar containing 10% buffered formalin as soon as possible after removal. The amount of formalin necessary for adequate fixation is about ten times the volume of the specimen. Formalin jars are blue topped and labelled as containing 10% buffered formalin. The Laboratory provides formalin jars on request.

Specimens accompanying paps should be double bagged to ensure formalin vapour is contained. **Pap Smears and Histo specimens should never be placed in the same bag.**

Please note that it is a NATA requirement that specimen jars are labelled with the full name of the patient and the date of birth. Please also ensure that the site given on the specimen jar and the request form are identical.

2) **Special biopsies:** e.g. lymph nodes, skin biopsies for immunofluorescence. All biopsies or tissues received fresh without formalin should be couriered to the Main Laboratory within the hour and urgently brought to the attention of a Histopathology staff member. Packing in ice can help prevent degeneration.

Skin biopsies for immunofluorescence can also be placed into a specific transport medium which is available on request from the laboratory. (Please provide 24hrs notice for delivery)

3) **Frozen section:** Frozen section analysis is currently only performed at Bunbury Pathology.

HIV P24 ANTIGEN

Specimen required: **Serum (1 x SST)**

Department: Referred test

Note: This may also include a non-quantitative test for HIV RNA.

Routine HIV testing includes testing for p24 and antibodies to HIV1/2 (Combination test)

Not to be confused with viral load testing.

HIV SEROLOGY (HUMAN IMMUNODEFICIENCY VIRUS ANTIGEN AND ANTIBODIES)

Specimen required: **Serum (1 x SST)**

Department: Serology

Test performed: Combined Test: HIV 1/2 antibodies + p24 antigen

Note: **Informed consent for patient HIV testing must be obtained by the requesting practitioner.**

Comment: **CODED HIV SPECIMENS**

Medicare Australia will not pay benefits when requests are coded.

If coding patients for HIV **and** other tests are required (uncoded) then please fill out 2 request forms

e.g. for John Citizen DOB 23/09/60:

Code one form for the HIV test (this could be JC230960). Please ensure sample supplied matches code (i.e. label specimen JC230960).

Another form for any non-coded tests (for billing purposes) must be filled out with correct patient details and extra specimens, labelled with the patients true details.

HIV RNA (VIRAL LOAD)

Specimen required: **2 x EDTA (Dedicated)**

Attach process immediately sticker

Department: Referred test

Note: Sample separated within 6 hours of collection and FROZEN.

Transported FROZEN to RPH Immunology. When separated at least 2ml Plasma must be present in the tube.

HLA – B27 (HUMAN LEUCOCYTE ANTIGEN)

Specimen required: **1 x ACD / CPDA tubes (EDTA samples may be used by arrangement with haematology.)**

DO NOT REFRIGERATE

Collected Mon-Sat, but NOT over a long weekend.

Department: Haematology

Reference range: Negative.

Interpretation: A negative result virtually excludes ankylosing spondylitis. HLA-B27 is present in Reiter's syndrome, inflammatory bowel disease and uveitis and can be of little diagnostic value.

Note: Unable to perform by Phoned Request unless arranged directly with haematology department.

HLA DQ 2/8

Specimen required: **1 x ACD / CPDA DO NOT REFRIGERATE**
Collected Mon-Sat, but NOT over a long weekend.

Department: Referred test

Reference range: As stated on report.

HLA - H

See HAEMOCHROMATOSIS STUDIES

HLA TYPING (OTHER ANTIGENS)

Specimen required: **1 x ACD / CPDA DO NOT REFRIGERATE**
Collected Mon-Sat, but NOT over a long weekend.
Can now be collected at ACC's

Department: Referred test

Reference range: As stated on report. Routine testing may have a 3 week turnaround time.

HMMA (3-METHOXY-4-HYDROXYMANDELIC ACID)

See ADRENALINE/NORADRENALINE

HNPP GENE

Specimen required: **1 x EDTA**

Department: Referred test

HOMOCYSTEINE (HOCY)

Specimen required: **1 x PPT dedicated tube – must be full tube**
Patient MUST be FASTING. Mark sample as Process Immediately

Department: Biochemistry

Reference range: Fasting 5.0 - 15.0 umol/L

Interpretation: Elevations are associated with independent risk of cardiovascular disease

Note:

- 1) Sample must be centrifuged at the centre or arrive in the Laboratory within 3 hours of collection and centrifuged immediately on receipt. Sample must be placed on ice until centrifuged**
- 2) If requested in children for "*? homocysteinuria*" then a spot urine is the sample of choice - referred to PMH.

HORMONE (OVULATION) TRACKING

Specimen required: **Serum (1 x SST)**

Department: Biochemistry

Comment: Recommended hormones- oestradiol, FSH, LH and progesterone.

Note:

Weekdays To ensure results are available on the same day, it is requested that patients are bled at collection centres by 9 am Monday to Friday.

Collection staff should then contact the courier department to organise an **URGENT** pick-up.

Saturdays A number of collection centres are available for sample collection. Please ask patient to phone the centre the day prior to the blood test to ensure Saturday collection for Hormone Tracking is available.

Samples must be collected from patients **before 9 am**.

Tracking patients unable to attend any of the appropriate centres by 9 am should attend the **West Perth** collection centre before 1 pm.

Sunday & Public Holidays Sample collection must be between 9 and 10 am at **West Perth ONLY**. Please inform patient to contact Endocrinology Laboratory for results after 2pm.

HPV

See HUMAN PAPILLOMA VIRUS (HPV) DNA TESTING

HSV

See HERPES SIMPLEX ANTIBODY or HERPES SIMPLEX I AND II (IF FOR PCR)

HUMAN CHORIONIC GONADOTROPHIN (QUANTITATIVE) RANGES IN PREGNANCYSpecimen required: **Serum (1 x SST) Process Immediately sticker**

Department: Biochemistry

Results:

Weeks after fertilisation	HCG mIU/ml	
	Median	5-95 th percentile
1	17.5	5.8 - 71.2
2	141	9.5 - 750
3	1398	217 - 7138
4	3339	158 - 31795
5	39759	3697 - 163563
6	90084	32065 - 149571
7	106257	63803 - 151410
8	85172	46509 - 186977
10	66676	27832 - 210612
12	34440	13950 - 62530
13	28962	12039 - 70971
14	23930	9040 - 56541
15	20860	8175 - 55868
16	19817	8099 - 58176

HUMAN CHORIONIC GONADOTROPHIN (HCG) - TOTAL (PREVIOUSLY BETA HCG)Specimen required: **Serum (1 x SST) Process Immediately sticker**

Urine can also be used but this is not as sensitive in early pregnancy.

Department: Biochemistry

Reference range: Female: > 20 U/L - Consistent with pregnancy
 5 - 20 U/L - Equivocal
 < 5 U/L - Negative
 Male: < 2 U/L - As a tumour marker
 Premenopausal female < 1 U/L - As a tumour marker
 Postmenopausal female < 7 U/L - As a tumour marker

HUMAN IMMUNODEFICIENCY VIRUS (HIV)

See HIV serology

HUMAN PAPILLOMA VIRUS (HPV) DNA TESTING

Specimen required: **1) ThinPrep Sample;** for Digene-Hybrid Capture II
2) Digene Swab; for Digene-Hybrid Capture II
3) Dry Swab or ThinPrep sample to be sent for PCR testing.

Department: Referred

Note: A Medicare rebate is available on this test (for 2 tests in 24 months) for those patients who have had treatment for a High Grade Epithelial Lesion or previously had a positive test for high risk HPV.

Test results are available within 14 days.

Comment: Molecular biology tests are used for the specific detection of high risk types of HPV. The most precise way of detecting the virus is by PCR or DNA Hybrid Capture using a sample from a ThinPrep vial or DIGENE SWAB.

HUMAN T-CELL LYMPHOTROPIC VIRUS (HTLV) TYPE I & II ANTIBODIESSpecimen required: **Serum (1 x SST)**

Department: Referred test

HVS (HIGH VAGINAL SWAB)

See GENITAL SPECIMENS

HYDATID SEROLOGY

Specimen required: **Serum (1 x SST)**
Department: Referred test
Comment: Disease caused by the tapeworm *Echinococcus granulosus*. Hydatid cysts may grow in any organ but are most common in the liver and lungs.

HYDROXYINDOLACETIC ACID (5HIAA)

Specimen required: **Urine – 24 hour collection in a strong acid preservative.**
Preservative = 20 mls of 50% HCl. Warn Patient of acid risk
Department: Referred test
Reference range: As stated on report
Comment: Elevated levels found with carcinoid tumours. Falsely elevated levels may be seen after ingestion of certain foodstuffs. If requested with ADRENALINE / NORADRENALINE (Catecholamines), only ONE 24 hour specimen is required.
Note: Please see Patient instructions [PIBI-008](#) for special dietary requirements regarding this test

HYDROXY PROLINE

Specimen required: **Urine – Spot**
Protect from light: Wrap in alfoil
Department: Referred test

Left blank

