P

P1NP (BONE FORMATION MARKER)
   Specimen required: Serum (1 x SST)
   Department: Referred test

P4
   See PROGESTERONE

PAPP - A
   See FIRST TRIMESTER SCREEN

PAP SMEAR
   See CYTOLOGY (Gynaecological & Non-Gynaecological) and THIN PREP

PANCREATIC ELASTIN TEST
   See ELASTASE

PANCREATIC ISLETS AUTO ANTIBODY
   See ISLETS AUTO ANTIBODY

PANCREATIC LIPASE
   See LIPASE

PANCREATIC POLYPEPTIDE
   Specimen required: 2 x SST (Serum)
   Department: Referred test
   Note: This is a non-rebatable test. Patients will receive a private account from the testing laboratory.

PARACETAMOL (ACETOMINOPHEN)
   Specimen required: Serum (1 x SST)
   Department: Referred test
   Results: Refer to relevant Paracetamol Treatment Nomogram
   Interpretation: For cases of overdose a time of ingestion is useful in establishing a prognosis.

PARAINFLUENZA VIRUS
   See RESPIRATORY VIRUS DETECTION

PARAPROTEIN
   See PROTEIN ELECTROPHORESIS

PARATHYROID HORMONE (PTH)
   Specimen required: Serum (1 x SST) dedicated tube. Treat as Process Immediately specimen for special processing. Refrigerate but do not spin specimen after collection.
   Preferably fasting, but if known renal impairment, non-fasting is OK. Specimen must reach Laboratory within six hours of collection.
   Department: Biochemistry
   Reference range: 1.3 – 7.0 pmol/L
   Interpretation: HIGH – Hyperparathyroidism
                   – Vitamin D deficiency
                   LOW – Hyypoparathyroidism
PARTIAL THROMBOPLASTIN TIME (APTT, PTTK)
Specimen required: 1 x Sodium citrate
Department: Haematology
Results: Reference range: Less than 34 seconds.
Therapeutic Range: 1.5 - 2.5 times the normal control for heparin therapy monitoring.

PARVOVIRUS B19
Specimen required: Serum (1 x SST). Dedicated tube should be collected for PCR if requested
Department: Serology
Results: Reported as Detected / Not detected with appropriate interpretive comments.
Symptoms: May include rash, arthropathy, red cell aplasia, spontaneous abortions, hydrops fetalis
Consider also Rubella, Measles, Scarlet Fever, Ross River Virus or Barmah Forest Virus.
Note: A PCR confirmatory test for IgM positive sera is also available if needed
Comment: PAVOVIRUS B19 also known as ERYTHEMA INFECTOSUM - SLAPPED FACE DISEASE, FIFTH DISEASE

PATERNITY TESTING
See DNA Paternity Testing

PAUL BUNNELL
See IM SCREEN (Monospot)

PCR TESTING (POLYMERASE CHAIN REACTION)
Specimen required: Various sample types e.g. urine, sputum, swabs and blood.
1) SWABS
   Swabs should be plain dry swabs (orange top handle).
   DO NOT USE SWABS WITH TRANSPORT MEDIUM (gel for transport interferes with PCR tests)
   If more than two PCR tests are being requested; two swabs should be sent in to ensure there is enough material to perform all tests.
2) BLOOD
   NOTE: All PCR blood test must have dedicated tubes.
   EBV PCR  1 x EDTA whole blood
   CMV Viral Load 2 x EDTA
   Parvovirus B19 1 x EDTA whole blood (by special arrangement only)
   HIV Provirus PCR 2 x EDTA whole blood
   Hep C PCR 1 x 10mL SST.
3) FIRST VOID URINE
   Chlamydia trachomatis and Neisseria gonorrhoea (See also listing for Chlamydia DNA detection)
   HSV
   Mycoplasma + Ureaplasma
Note: Please see specific infection for further information

PERHEXILINE
Specimen required: 1 x Heparin NO GEL
Collect blood just prior to next dose.
Department: Referred test
Therapeutic range: As stated on report

PERTUSSIS TESTS
Specimens required: Perinasal Aspirate for culture, PCR and nasal IgA (Note one ml required)
Throat swab for PCR and Serum (1 x SST) for IgA if PNA not possible
Nasal swabs x2 are acceptable in an outbreak if no PNA.
Department: Microbiology
Note: Prefer PNA for acute symptoms and Serum IgA for chronic symptoms (2-4 weeks)
IgA can also be done on PNA if the volume is >1mL, usually paediatric only
See also: Respiratory viruses as tests are often combined
PESTICIDE SCREEN (ORGANOCHLORINES)
Specimen required: 1 x Heparin NO GEL
Department: Referred test
Reference range: As stated on report.
Note: For ORGANOPHOSPHATE Pesticides please see CHOLINESTERASE.
Specimens referred to a reference laboratory. Please list pesticides in contact if known.
Medicare rebate available only if applicable. Patient may receive a private account.

PHENOBARBITONE
Specimen required: Serum (1 x SST)
Department: Biochemistry
Therapeutic range: 10 - 30 umol/L
Peak level: 6 - 18 hours after oral administration,
            1.5 hours after IM injection
Half life: 2 - 6 days.
Note: (i) Due to phenobarbitone’s long half life sampling time is unimportant. However, when making
      comparative measurements sampling time should be consistent. Please note down time of
      last dose and collection.
      (ii) Valproate may potentiate the effects of phenobarbitone.

PHENYLALANINE
Specimen required: 1 x Heparin NO GEL
Department: Referred test

PHENYTOIN (DILANTIN)
Specimen required: Serum (1 x SST). Trough levels, just prior to next dose.
(Peak levels are only used if toxicity is suspected)
Department: Biochemistry
Results: Therapeutic range: 10 - 20 mg/L
Peak level: 3 - 8 hours after oral administration.

PHOSPHATE (INORGANIC) – SERUM
Specimen required: Serum (1 x SST)
Department: Biochemistry
Reference range: 0.70 - 1.50 mmol/L
Interpretation:
LOW – Hyperparathyroidism, osteomalacia, Fanconi’s syndrome
HIGH – Vitamin D excess, hypoparathyroidism, renal insufficiency
FALSE HIGH – Haemolysed specimen

PHOSPHATE (INORGANIC) – URINARY
Specimen required: Urine - 24 hour collection with NO PRESERVATIVE.
Department: Biochemistry
Reference range: 10 - 45 mmol/day
Interpretation:
HIGH – Hyperparathyroidism, renal tubular damage
LOW – Hypoparathyroidism, parathyroidectomy

PHOSPHOLIPID ANTIBODIES
See ANTI CARDIOLIPIN ANTIBODIES

PLASMA VISCOSITY
See WHOLE BLOOD VISCOSITY

PLASMA FREE METADRENALINES
See METANEPHRINES - PLASMA
PLATELET AGGREGATION STUDIES
Specimen required: 4 x Sodium Citrate tubes - Please send patient to Clinipath Pathology Main Laboratory. Must arrive at RPH within 2 hours of collection AND before 2:00pm Monday-Thursday. Note: On Fridays sample must arrive before 12:00 noon. 
Department: Referred test
Reference range: As stated on report.

PLATELET ANTIBODIES
See ANTI PLATELET ANTIBODIES

PLATELET FUNCTION TEST
Specimen required: 1 x Sodium Citrate do not spin. Process immediately sticker. Must be at Main Laboratory within 4 hours of collection. Do not refrigerate
Department: Haematology
Reference range: As stated on report.
Note: NOT part of a Coagulation Profile and MUST be specifically requested

PLATELET SEROTONIN
See SEROTONIN

PNA
See POST NASAL ASPIRATE

PNEUMOCOCCAL ANTIBODIES
Specimen required: Serum (1 x SST) Test is used in the investigation of immune response to Pneumovax vaccination. Pre and 2 - 4 week post vaccination samples are taken. NOT to be used as a diagnostic test in pneumonia infections.
Department: Referred test

PNEUMOCYSTIS
Specimen required: Bronchial lavage, sputum.
Department: Referred test
Comment: Cause of pneumonia in immunocompromised patients, particularly in HIV patients.

POLIO SEROLOGY
Test not available

PORPHYRINS SCREEN
Specimen required: 1 x Heparin NO GEL and a Spot Urine. Specimens must be protected from the light at all times (wrap in aluminium foil).
Department: Referred test
Reference range: Qualitative tests are initially performed.
Interpretation: Laboratory will assist, if required.
POST NASAL ASPIRATE (PNA) FOR BORDETELLA CULTURE (also other pathogens such as influenza, RSV and Human Metapneumovirus)

Specimen collection: A post nasal aspirate (PNA) is the preferred specimen for diagnosis of pertussis, although a posterior nasal swab can also be used, although special flexible wire swabs will be needed optimally for this to be performed, (available from the Laboratory if required.)

Department: Serology / Microbiology
Comment: Tests performed include:
(i) Bordetella culture - requires at least 7 days for final result. Posterior nasal SWABS for culture should be placed in Amies transport medium.
(ii) Bordetella PCR on aspirate. If a posterior nasal SWAB is collected for PCR, an orange capped wire transported dry in the sheath is the nearest available sampling swab, if flexible wire not available. (Flexible wire swabs available from the Laboratory on request.)

Note: Collection of PNA is only available at selected collection centres. Please contact Main Laboratory for advice.

See also: BORDETELLA SEROLOGY.

POST PRANDIAL 2 HR
Sample Required: 1 x Fluoride Oxalate. Collected 2hrs after patient has consumed food
Department: Biochemistry
Reference Interval: As stated on report

POTASSIUM (K+)
Specimen required: Serum (1 x SST) - DO NOT refrigerate specimen.
The specimen MUST NOT be haemolysed.
If Whole Blood or Red Cell Potassium requested - Heparin NO GEL.

Department: Biochemistry
Reference range: 3.5 - 5.4 mmol/L
Interpretation: HIGH - Increased intake, renal failure, Addison’s disease, uncontrolled diabetes
Low - Insulin therapy, renal loss (especially diuretics), gastrointestinal loss
FALSE HIGH - Haemolysed specimen or overnight, unseparated specimen.

Note: Refrigeration speeds up the release of potassium from red cells. Store at room temperature.

POX VIRUS
See OFR virus PCR

PREGNANCY PATHOLOGY ASSESSMENT (PPA)
See Antenatal Basic Screening Test

PREGNELONONE
Sample Required: Serum (1 x SST)
Department: Referred test
Reference Interval: As stated on report
Comment: Patient will receive a private account from the testing laboratory

PR – 3
See ANTI NEUTROPHIL CYTOPLASM ANTIBODY

PRIMIDONE
See PHENOBARBITONE.
Specimen required: Serum (1 x SST). Trough specimen.
Department: Biochemistry
Peak level: 3 hours after oral dose.
Half life: 8 hours.
Comment: Primodone is measured via its main metabolite, Phenobarbitone, which accumulates in the body (Half Life 2-6 days).
**PRO - BNP**

See BRAIN NATRIURETIC PEPTIDE

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**PROCALCITONIN**

Specimen required: **Hep no Gel, frozen**  
Department: **Referred test**

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**PROGESTERONE (P4)**

Specimen required: **Serum (1 x SST)**  
Department: **Biochemistry**  
Reference range:  
- Female:  
  - Follicular < 1.0 nmol/L  
  - Luteal 3.8 - 50.0 nmol/L  
  - Menopausal < 0.6 nmol/L  
  - Pregnancy (1st trimester) > 40.0 nmol/L consistent with viability.  
- Male: < 0.6 nmol/L  

Also see: **SALIVARY HORMONES**

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**17-OH PROGESTERONE**

Specimen required: **Serum (1 x SST)**  
Department: **Referred test**  
Reference range: Gender specific as stated on report.  
Interpretation: HIGH – Congenital adrenal hyperplasia

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**PROLACTIN (PROL)**

Specimen required: **Serum (1 x SST)**  
Department: **Biochemistry**  
Note: A **Resting prolactin** may be requested to rule out stress elevation. Patient must rest for 30 minutes prior to taking the sample.  
Reference range:  
- Female: 25 - 628 mIU/L  
- Male: 54 - 380 mIU/L  
Interpretation: High in pituitary tumours, hypothalamic disorders, hypothyroidism, stress, some drugs (e.g. phenothiazines), macroprolactin

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**PROSTATIC MASSAGE**

Specimen required: **Urine for differential culture before and after massage +/- MSU**  
Department: **Microbiology**  
Note: Deliver to Laboratory within 2 hours or refrigerate

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**PROSTATE SPECIFIC ANTIGEN - FREE (FPSA)**

Specimen required: **Serum (1 x SST)**  
Department: **Biochemistry**  
Note: Only recommended when the total PSA falls between 2.0 and 10.0 µg/L. The test is useful in discriminating between benign prostatic hyperplasia and cancer of the prostate. Due to the stability of free PSA, this test cannot be added on more than 24hrs after collection.
PROSTATE SPECIFIC ANTIGEN – TOTAL (PSA)
Specimen required: Serum (1 x SST)
Department: Biochemistry
Reference range: Age Related
40 - 49 years < 2.5 ug/L
50 - 59 years < 3.5 ug/L
60 - 69 years < 4.5 ug/L
≥ 70 years < 6.5 ug/L
Interpretation: HIGH - Prostatic cancer, benign prostatic hyperplasia.
Note: Medicare rebatable for 1 episode in a 12 month period in the absence of prostatic disease.

PROTEIN C
Specimen Required: 1 x Sodium Citrate. Bunbury Pathology to collect 3 x Na Citrate
Department: Haematology
Reference range: 70 – 150%

PROTEIN ELECTROPHORESIS (QEP, EPP, EPG)
Specimen required: Serum (1 x SST) Plasma NOT suitable.
Department: Biochemistry

PROTEIN S
Specimen Required: 1 x Sodium Citrate
Department: Haematology
Reference range: 50 – 150%

PROTEIN – TOTAL
Specimen required: Serum (1 x SST)
Department: Biochemistry
Reference range: 63 - 83 g/L
Interpretation: LOW - Over hydration, nephrotic syndrome, malabsorption
HIGH - Dehydration, chronic diseases, paraproteinaemias

PROTEIN – URINE
Specimen required: Urine – 24 hour collection – NO PRESERVATIVE
OR Spot urine sample
Department: Biochemistry
Reference range: 24 hour collection Less than 0.15 g/day
Spot sample 0.5 – 11.5 mg/mmol creatinine
Interpretation: HIGH - Renal disease, UTI, pre-eclampsia, etc.
Comment: Normal persons may show trace proteinuria with dipstick testing. See also Microalbumin.

PROTHIADIN
See DOTHIEPIN

PROTHROMBIN 20210
Specimen Required: 1 x EDTA
Department: Referred test
**PROTHROMBIN TIME ( PT/INR )**

Specimen required: 1 x Sodium citrate tube.

Department: Haematology

Note: Specimen must be “Full Draw” to the required level. Finger prick specimens are not suitable.

Comment: All results are routinely FAXED to the requesting practitioner.

Reference range: 9 - 13 seconds for non-warfarinised patients.

 Therapeutic Range:

<table>
<thead>
<tr>
<th>INR</th>
<th>Condition</th>
<th>Length of Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 - 2.5</td>
<td>Atrial fibrillation</td>
<td>Long term.</td>
</tr>
<tr>
<td>2.0 - 3.0</td>
<td>Bioprosthetic valve</td>
<td>3 months</td>
</tr>
<tr>
<td>2.0 - 3.0</td>
<td>Acute MI</td>
<td>3 months (&gt; if AF)</td>
</tr>
<tr>
<td>2.0 - 3.0</td>
<td>Cardioembolic CVA, Rec.DVT/PE and dilated cardiomyopathy</td>
<td>Long term</td>
</tr>
<tr>
<td>2.0 - 3.0</td>
<td>Venous thrombosis &amp; PE</td>
<td>3 - 6 months</td>
</tr>
<tr>
<td>2.5 - 3.5</td>
<td>Mechanical heart valve</td>
<td>Long term</td>
</tr>
</tbody>
</table>

**PSA**

See PROSTATE SPECIFIC ANTIGEN

**PSEUDOCHOLINESTERASE**

See CHOLINESTERASE

**PSITTACOSIS SEROLOGY**

Specimen required: Serum (1 x SST)

Department: Referred test

Symptoms: Infection of the lower respiratory tract caused by the organism Chlamydophila psittaci.

See also: Chlamydia pneumoniae Serology

**PTTK**

See PARTIAL THROMBOPLASTIN TIME

**PYRIDOXAL**

See VITAMIN B6

**PYRUVATE**

Specimen required: Special Collection is required - Please refer patient directly to Main Laboratory or contact the Duty Manager at Clinipath Pathology.

Department: Referred test