

PROTEINURIA + eGFR > 60

Screening

(Summarised in flow chart over page).

1. DETERMINE RISK:

High risk	<ul style="list-style-type: none"> Diabetes. Cerebro/cardio/peripheral vascular disease. Hypertension. History of kidney disease. History of chronic kidney disease in first degree relative.
Moderate risk	<ul style="list-style-type: none"> Aboriginal people ≥ 15 years. BMI > 30. Smokers.

2. ANNUALLY TEST:

High risk	<ul style="list-style-type: none"> MSU for dipstick – if nitrites, leucocytes and / or blood present, exclude infection. Send: <ul style="list-style-type: none"> MSU for MC&S. SOLVS (women) or FVU (men) for PCR for gonorrhoea and chlamydia. ACR. Serum urea, electrolytes and creatinine (UEC). eGFR (see Case Definition).
Moderate risk	<ul style="list-style-type: none"> MSU for dipstick. If: <ul style="list-style-type: none"> Nitrites, leucocytes and/or blood detected, send: <ul style="list-style-type: none"> MSU for MC&S. SOLVS (women) and FVU (men) for NAT (PCR) gonorrhoea and chlamydia. Protein and / or blood present in the absence of infection - manage as high risk; see Box 1 - Haematuria.

BOX 1: HAEMATURIA

- Haematuria plus proteinuria in the absence of current or recent infection is glomerulonephritis (GN) until proven otherwise - screen according to high risk screening protocol above, and follow management guidelines in this protocol. If eGFR ≤ 60 see [CHRONIC KIDNEY DISEASE](#) Protocol.
- If clinical picture is suggestive of a systemic disease [(e.g. facial rash, polyarthritis, lethargy, abnormal investigations (see baseline assessment))] - refer to Nephrologist.
- Persisting isolated haematuria in over 40 year olds requires further urine for cytology, renal ultra sound + IVP +/- cystoscopy to exclude malignancy.

Case Definition

x 2 elevated ACRs (> 3.6mg/mmol) performed at least a week apart and in the absence of urinary tract infection or STI (urethritis / cervicitis), **PLUS** eGFR > 60.

If eGFR is ≤ 60, refer to [CHRONIC KIDNEY DISEASE](#) protocol.

To exclude infection, collect MSU for MC+S plus SOLVS (women) or FVU (men) for PCR for gonorrhoea/chlamydia.

eGFR (estimated Glomerular Filtration Rate) is automatically reported by the pathology laboratory when a creatinine test is requested. eGFR values are currently reported only as "> 60" rather than an actual number.

To determine the exact value for patients with a lab report of "> 60", an eGFR calculator is available at www.kidney.org.au. Keep in mind that eGFR values > 90 may be unreliable.

Principles of Management

- Proteinuria is predictive of **cardiovascular disease**.
- There is a strong correlation between proteinuria and progression to kidney failure.
- In people with proteinuria and hypertension or diabetes, drug treatment reduces mortality and progression to CKD.

BASELINE ASSESSMENT:

If ACR < 100mg/mmol without haematuria

- Review and address cardiovascular risk factors.
- If not already known to have diabetes, screen for diabetes (see [TYPE II DIABETES](#) protocol).

If ACR > 100mg/mmol OR ACR > 3.6mg/mmol with haematuria

- as above plus:
- Urine:** urine immunoelectrophoresis.
- Bloods:** FBP, CRP, ESR, UEC, Ca, LFT's, ANA, DNA-Ab, C3, C4, c&p ANCA, and Hep B s Ag, Hep C, syphilis, HIV serology if not performed in last 12 months.
- Renal ultrasound scan.**

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Therapeutic Protocols

- Encourage **healthy diet, smoking cessation and safe alcohol** use (see [HEALTHY LIVING](#) protocol).
- Aim for **optimal** control of diabetes, hypertension and dyslipidaemia.

Drug treatment for proteinuria is recommended in:

- ALL people with diabetes and / or hypertension.
- Anyone with persistent ACR > 50mg/mmol.

Start ramipril 2.5mg daily doubling every 2 weeks to maximum dose of 10mg daily or development of symptomatic hypotension.

Then add irbesartan 75mg daily doubling dose every 2 weeks to maximum dose of 300mg daily or development of symptomatic hypotension.

Whilst titrating therapy, review every two weeks.

BOX 2: 2 WEEKLY CHECKLIST WHILE CHANGING THERAPY

- **BP** - If symptomatic hypotension develops, correct any dehydration, review other medications (e.g. diuretics), reduce dose until symptoms resolve / BP normalizes, and attempt gradual increase in dosage again. Discuss with Nephrologist if not tolerating ACE-i / ARB.
- Some rise in urea, creatinine and potassium is expected after commencing ACE-i / ARB; if the increase is small and asymptomatic, no action is necessary.
- A rise in creatinine of up to 30% above baseline is acceptable.
- An increase in potassium to ≤ 5.9 mmol/L is acceptable.
- If potassium ≥ 6.0 mmol/L and / or creatinine increases by > 30%, **STOP** medications and discuss with nephrologist. A persistent excessive rise in creatinine may indicate bilateral renal artery stenosis and needs investigation.

Follow-up

Check smoking status, alcohol use, weight, BP, UEC and eGFR:

- every 6 months if ACR > 50mg/mmol.
- annually if ACR < 50mg/mmol.

If not already known to have diabetes, screen for diabetes (see [TYPE II DIABETES](#) protocol).

Women of Child Bearing Age

- Stop all ACE-i / ARBs (including ramipril / irbesartan) as soon as pregnancy planned or suspected.
- If ACE-i / ARBs are inadvertently taken in pregnancy, discuss with Regional Obstetrician.
- Encourage early antenatal care.
- Encourage reliable contraception in those on ACE-i / ARBs.
- Breastfeeding: use enalapril 5 - 40mg daily (instead of ramipril / irbesartan).

Refer / Discuss

TO NEPHROLOGIST:

- ACR > 100mg/mmol.
- suspected connective tissue disease based on clinical picture +/- abnormal baseline investigations.

TO OBSTETRICIAN:

- If **ACE-i / ARBs** are taken inadvertently in pregnancy for consideration of increased ultrasound monitoring and counselling.

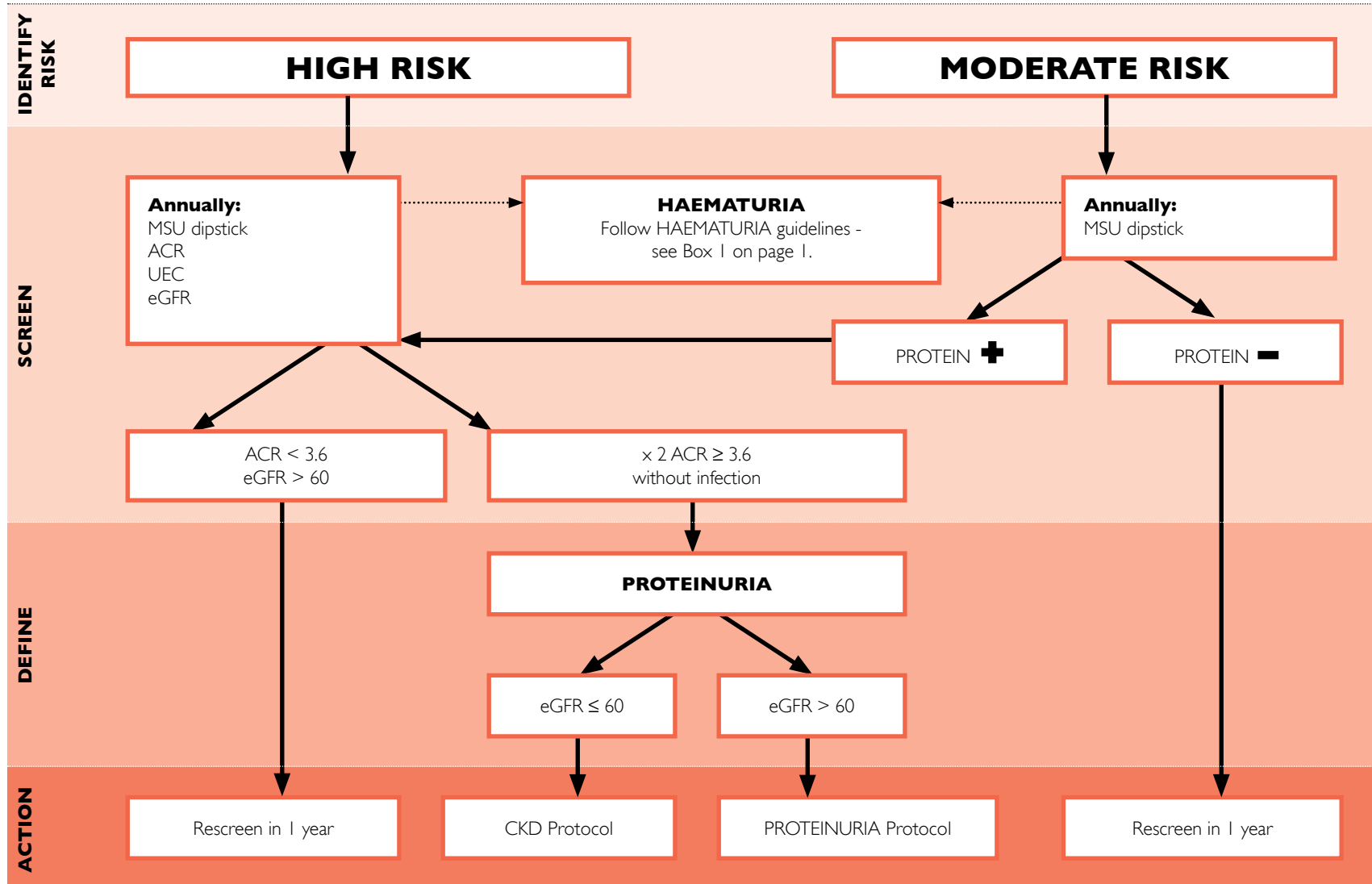
TO SURGEON:

- Persisting haematuria may need further investigation with cystoscopy - see Box 1 "Haematuria" on page 1.

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SCREENING FOR PROTEINURIA



ACR in mg/mmol, eGFR in mL/min/1.73m²

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