

Monash Children's Hospital

Referral Guidelines

NEPHROLOGY

EXCLUSIONS

Services not offered by **Paediatric Nephrology** at Monash Children's Hospital

- Faecal incontinence / encopresis / constipation: refer to [General Paediatrics](#)
- Urinary incontinence management for children under 7yrs
- Mild Hydronephrosis < 7mm in one of two kidneys with no other abnormalities
- Mild haematuria < 25 RBC and no other abnormalities
- Single afebrile urinary tract infection with no other findings over 2 years of age
- Patients over 18 years of age: [Click here](#) for adult Monash Health Nephrology guidelines

CONDITIONS

HYDRONEPHROSIS

[Antenatal hydronephrosis](#)
[Hydronephrosis / hydroureter](#)

CONGENITAL ABNORMALITIES OF THE KIDNEY AND URINARY TRACT

[Crossed fused renal ectopic](#)
[Horseshoe kidney](#)
[Obstructive uropathy](#)
[Renal dysplasia / hypoplasia](#)
[Multicystic dysplastic kidney](#)
[Single kidney](#)

ACUTE OR CHRONIC RENAL FAILURE

[Renal failure](#)

HAEMATURIA

[Haematuria](#)
[Macroscopic haematuria](#)
[Microscopic haematuria – isolated](#)
[Microscopic/macroscopic haematuria +/- proteinuria, rash, hypertension, systemic symptoms, haemoptysis](#)

OTHER

[Hypertension](#)
[Immunosuppressed with fever](#)
[Nephrotic syndrome](#)
[Proteinuria – isolated](#)
[Proteinuria – nephrotic range](#)
[Reflux nephropathy](#)
[Renal cyst](#)
[Renal stones](#)
[Urinary incontinence: day and/or night](#)
[Urinary Tract Infection \(UTI\)](#)

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Last updated:
27/06/2019

Monash Children's Hospital

Referral Guidelines

NEPHROLOGY

PRIORITY

All referrals received are triaged by **Monash Children's Hospital clinicians** to determine **urgency of referral.**

EMERGENCY

For emergency cases please do any of the following:

- send the patient to the Emergency department OR
- Contact the on call registrar OR
- Phone 000 to arrange immediate transfer to ED

URGENT

The patient has a condition that has the potential to deteriorate quickly with significant consequences for health and quality of life if not managed promptly.

ROUTINE

The patient's condition is unlikely to deteriorate quickly or have significant consequences for the person's health and quality of life if the specialist assessment is delayed beyond one month

REFERRAL

How to refer to **Paediatric Nephrology** at Monash Children's Hospital

Find up-to-date information about how to send a referral to Monash Health [on the eReferrals page on our website.](#)

CONTACT US

Medical practitioners

To discuss complex & urgent referrals contact: On-call paediatric nephrology ATR during hours or nephrologist on call after hours through Monash Health switchboard **9594 6666**

To discuss **routine referrals** email: MCH_nephrology@monashhealth.org (checked only during business hours, response within 48 hours)

General enquiries

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HYDRONEPHROSIS

ANTENATAL HYDRONEPHROSIS

WHEN TO REFER?

Initial GP Workup

Refer to [antenatal hydronephrosis](#) guidelines for more information

Initial postnatal scan timing. If patient has FMU plan continue to follow, otherwise patient requires ultrasound in 72 hours if any of the following are found:

- Unilateral hydronephrosis >15mm
- Bilateral hydronephrosis >10mm
- Single kidney with hydronephrosis > 10 mm
- Hydroureter with any degree of hydronephrosis
- Abnormal bladder
- Palpable kidney
- Oligohydramnios

Urgent

Conditions listed are deemed high risk urgent. Please contact paediatric nephrology ATR or nephrologist on call via Monash Health switchboard **9594 6666** following post natal ultrasound scan to discuss prior to discharging baby.

Routine

APD 7-15mm. Consider emailing renal team to discuss specific individual patients

Management Options for GP

- All other patients can have ultrasound at 4-6 weeks
- If any of the above conditions present please discuss with renal team
- If hydronephrosis resolved, nil further scans required
- All other patients repeat renal ultrasound at 3 months
- Consider emailing renal team for further specific individual advice.

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HYDRONEPHROSIS OVER 12 MONTHS OLD

WHEN TO REFER?

Presentation

- Any new diagnosis in child over 12 months of age of hydronephrosis > 10 mm; or
- Hydronephrosis with hydroureter.

Initial GP Workup

- Refer to [hydronephrosis guidelines](#) for more information
- BP
- Urine MCS & protein : creatinine ratio
- UEC if abnormal renal parenchyma

Emergency

Oligo / anuria

Urgent

Urgency and clinic determined by ultrasound abnormalities – the listed conditions warrant further discussion with either paediatric nephrology or urology via Monash Health switchboard **9594 6666**

Routine

APD 7-15mm. Consider emailing renal team to discuss specific individual patients

Management Options for GP

N/A

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CONGENITAL ABNORMALITIES OF THE KIDNEY AND URINARY TRACT

HORSESHOE KIDNEY, CROSS FUSED ECTOPIA, SINGLE KIDNEY, RENAL DYSPLASIA, RENAL HYPOPLASIA, OBSTRUCTIVE UROPATHY EG POSTERIOR URETHRAL VALVES

WHEN TO REFER?

Urgent

Consider hydronephrosis > SFU 3 (see below)

Routine

All other patients

Initial GP Work Up

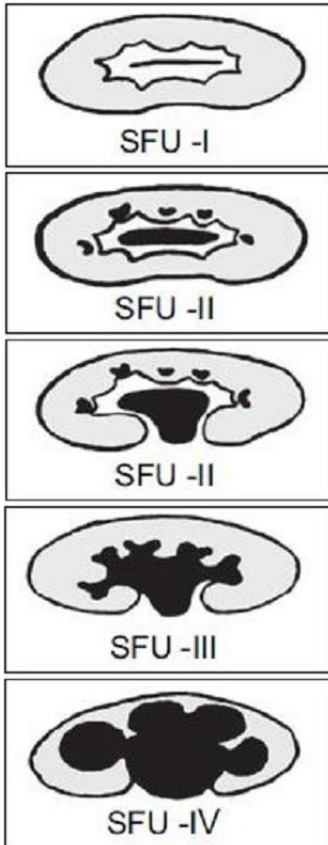
- Measure BP
- Renal ultrasound
- Urine protein: creatinine ratio
- Serum creatinine if reduced / abnormal renal parenchyma

Please ensure you have

- Growth records
- Previous radiographic studies, including films and reports
- Previous laboratory test results
- Details of all treatments offered and tried
- Copies of other relevant letters should accompany the referral

Management Options for GP

Continue to monitor



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ACUTE OR CHRONIC RENAL FAILURE

RENAL FAILURE

WHEN TO REFER?

Initial GP Work Up

- Measure BP
- Electrolytes
- Urea, creatinine
- Calcium, magnesium, phosphorous
- FBE
- Urine MCS
- If completed proteinuria on dipstick, provide protein : creatinine ratio
- Renal ultrasound

Please ensure you have

- Growth records
- Previous radiographic studies, including films and reports
- Previous laboratory test results
- Details of all treatments offered and tried
- Copies of other relevant letters should accompany the referral

Management Options for GP

Refer to nephrologist

Emergency

Please contact Paediatric Nephrology ATR or Nephrologist via Monash Health switch **9594 6666**

- Hyperkalemia > 6
- Bicarbonate < 10
- Hyperphosphatemia

Urgent

Refer if creatinine is twice upper limit of normal or > 25% above upper limit of normal. Please contact Paediatric Nephrology ATR or Nephrologist via Monash Health switch **9594 6666**

Routine

- Routine raised creatinine but less than twice upper limit of normal
- Consider 24 hour urine collection for creatinine clearance

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HAEMATURIA

MICROSCOPIC HAEMATURIA

WHEN TO REFER?

Presentation

The presence of >25 RBC/μl on urine microscopy

Initial GP Work Up

- Perform at least 2 urine microscopies 6 weeks apart at time when child is well. If resolved do not refer
- Check blood pressure and growth

Investigations

- Urine Tests
 - Urinalysis with microscopy (clean catch urine)
 - Urine culture
 - Urine protein and creatinine ratio (early morning)
 - Urine calcium to urine creatinine ratio (N=<0.7mmol/mmol)
 - Urine dipstick on family members
- Serum Tests
 - Creatinine/U&Es
 - Electrolytes
 - Full Blood Count
 - Serum coagulation studies (APTT, INR) if macroscopic haematuria.

Please ensure you have

- Growth records
- Previous radiographic studies, including films and reports
- Previous laboratory test results
- Details of all treatments offered and tried. Copies of other relevant letters should accompany the referral

Management Options for GP

Urgent phone consultation or immediate referral to paediatric nephrology is strongly recommended in the presence of any of the following:

- Constitutional symptoms like weight loss, fever, arthralgia or rash.
- Evidence of poor growth.
- Elevated blood pressure.
- Presence of oedema.
- Elevated serum creatinine and/or potassium.
- Presence of RBC casts upon urine microscopy.
- Abnormal renal ultrasound.
- Haematuria with associated proteinuria.
- Decreased urine output.

Do not refer if mild haematuria < 25 RBC and no other abnormalities

Urgent

Urgent phone consultation or immediate referral to Paediatric Nephrology ATR or Nephrologist via Monash switch 95946666 is strongly recommended in the presence of any of the following:

- Constitutional symptoms like weight loss, fever, arthralgia, haemoptysis or rash.
- Evidence of poor growth.
- Elevated blood pressure.
- Presence of oedema.
- Elevated serum creatinine and/or potassium.
- Presence of RBC casts upon urine microscopy.
- Abnormal renal ultrasound.
- Proteinuria.
- Decreased urine output.

Routine

- Normal renal function, normotensive, normal renal ultrasound, nil proteinuria
- Do not refer if mild haematuria < 25 RBC and no other abnormalities

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HAEMATURIA (cont'd)

MACROSCOPIC HAEMATURIA

WHEN TO REFER?

Presentation

Darkening of urine visible to the naked eye.

Initial GP Work Up

- BP
- Urine MCS
- Urine protein: creatinine ratio
- Renal US
- UEC, FBE, ESR, C3, C4, ASOT, anti- DNase, ANA, LFT
- Coagulation studies – APTT, INR
- Consider ANCA or anti GBM testing

Management Options for GP

- Discuss with nephrologist if any significant abnormalities
- Do not refer if mild haematuria < 25 RBC and no other abnormalities

Urgent

Urgent phone consultation or immediate referral to Paediatric Nephrology ATR or Nephrologist via Monash switch 95946666 is strongly recommended in the presence of any of the following:

- Constitutional symptoms like weight loss, fever, arthralgia, haemoptysis or rash.
- Evidence of poor growth.
- Elevated blood pressure.
- Presence of oedema.
- Elevated serum creatinine and/or potassium.
- Presence of RBC casts upon urine microscopy.
- Abnormal renal ultrasound.
- Proteinuria.

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OTHER

HYPERTENSION

Initial GP Work Up

- Weight
- BP & ambulatory BP
- Urine MCS
- Renal US including Doppler studies of renal arteries
- Urine protein: creatinine ratio,
- UEC, LFT, FBE
- ? renin, aldosterone

Please ensure you have:

- Details of all treatments offered and tried.
- Copies of other relevant letters should accompany the referral

Management Options for GP

- BP → 90-95th centile for age – asymptomatic – monitor, lifestyle measures, consider referral
- BP → 95th centile – asymptomatic – as above and refer.
- Urgent referral if
 - BP > 30mmHg above 95th centile or any symptomatic hypertension
- Call Nephrologist if:
 - Symptomatic hypertension such as headache, nausea, vomiting, abdominal pain, neurological changes, seizures, CCF or blurred vision.
 - Hypertension with extra renal manifestations such as joint pain, rash, joint swelling, haemoptysis, dyspnoea, cough or oedema.
- See [Tables 3 and 4](#) for blood pressure data

WHEN TO REFER?

Emergency

- Symptomatic hypertension, or
- BP > 30mm Hg above 95th centile, or
- BP > 180/120 in adolescent

Urgent

BP > 95th centile + symptomatic. Please contact paediatric nephrology ATR or nephrologist on call via Monash Health switch **9594 6666** to discuss initial management

Routine

As per GP management

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IMMUNOSUPPRESSED WITH FEVER/ ILLNESS EG. NEPHROTIC, TRANSPLANT RECIPIENT

Initial GP Work Up

Discuss with on-call nephrologist

Management Options for GP

Discuss with on-call nephrologist

WHEN TO REFER?

Emergency

If shock / unwell child (see [statewide guideline for febrile child](#))

Urgent

Discuss with on-call nephrologist

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OTHER(cont'd)

NEPHROTIC SYNDROME

Presentation

Proteinuria, Low serum albumin <25g/l or oedema

Initial GP Work Up

- BP
- Urine MCS
- Urine protein: creatinine ratio
- 24hr urine protein excretion
- UEC, LFT
- Details of all treatments offered and tried.
- Copies of other relevant letters should accompany the referral

Management Options for GP

- Urgent – discuss with nephrologist
- Admission usually indicated for all patients with nephrotic syndrome.

WHEN TO REFER?

Emergency

Admission usually indicated for all patients with newly diagnosed nephrotic syndrome

Urgent

Please contact paediatric nephrology ATR or nephrologist on call via Monash switch **9594 6666**

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PROTEINURIA - ISOLATED

Initial GP Work Up

- BP
- Urine MCS
- Renal US
- Urine protein: creatinine ratio
- Early morning urine for protein: creatinine ratio x3
- 24 hour urine protein excretion
- UEC, LFT

Please ensure you have:

- Growth records
- Details of all treatments offered and tried.
- Copies of other relevant letters should accompany the referral

Management Options for GP

- Do not measure albuminuria
- Proteinuria < 500 mg/ day – non urgent referral unless other abnormalities

WHEN TO REFER?

Urgent

Non-orthostatic proteinuria > 500 mg per 24 hours or proteinuria with any other abnormality

Routine

Proteinuria < 500mg/day

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OTHER(cont'd)

REFLUX NEPHROPATHY

WHEN TO REFER?

Initial GP Work Up

- BP
- Urine analysis
- Renal US
- Include results of all images including any prior MCU in referral
- Do not request MCU or nuclear medicine imaging

Management Options for GP

Monitor BP and urine protein: creatinine

Urgent

Refer if:

- scarred kidneys on US
- Abnormal BP
- Urine or renal function
- Poor somatic
- Renal growth

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RENAL CYST

WHEN TO REFER?

Initial GP Work Up

- BP
- Urine MCS
- Renal US
- Parental renal US

Management Options for GP

Monitor BP and urine protein

Urgent

If hypertensive, bilateral cystic kidney disease, any evidence of hydronephrosis or CAKUT

Routine

- Refer for discussion of cyst aetiology and management
- Refer if familial

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OTHER(cont'd)

RENAL STONES

Initial GP Work Up

- BP
- Urine analysis
- Renal US
- Stone analysis

Management Options for GP

Refer for stone evaluation

WHEN TO REFER?

Emergency

If renal colic/signs of obstruction/hydronephrosis, oligoanuria

Urgent

Please refer to urology for acute stone management

Routine

All patients for metabolic evaluation and education

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URINARY INCONTINENCE: DAY AND OR NIGHT

Initial GP Work Up

- Developmental history, toilet training history
- Associated behaviour patterns
- Parent and child's attitude to problem
- Details of all treatments offered and tried
- Copies of other relevant letters should accompany the referral

Night wetting

- Offer treatment if 7yrs or older
- Use diary to measure and monitor
- Explore parenting practices e.g. night fluid restricting, overnight toileting, punitive practices
- Urine microscopy not required unless separate symptoms indicative of UTI
- Assess whether constipation is a problem

Day wetting

- Consider overactive bladder, low awareness of bladder sensation, poor attention / concentration
- Exclude UTI - urine MCS
- Consider constipation

Management Options for GP

- Refer to the [Australian Continence Foundation](#) for GP management
- Refer to Monash Children's Hospital [day wetting](#) and [abnormal bladder function](#) fact sheet for further information and management options

WHEN TO REFER?

Urgent

Refer the following to [Urology](#)

- Abnormal urinary tract ultrasound
 - Hydronephrosis
 - Bladder anomaly
- Associated genital anomaly

Routine

Refer to Nephrology

- Night wetting persistent following failed treatment in child over 7 years of age
- Day wetting persistent after constipation / UTI treated in child over 5 years of age

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OTHER(cont'd)

URINARY TRACT INFECTION

Initial GP Work Up

- Urine culture - clean catch urine
- Renal Ultrasound
- Assess bladder function
- Assess for constipation

Please ensure you also include

- Growth records
- Details of all treatments offered and tried.
- Copies of other relevant letters should accompany the referral

Management Options for GP

- Consider role of prophylactic antibiotics.
- Do not arrange a routine VCUG (voiding cystourethrogram)
- See relevant fact sheet and guidelines for further information:
 - [Urinary tract infection](#) - child
 - [Urinary tract infection](#) – infant

WHEN TO REFER?

Emergency

- Refer to [statewide guideline for febrile child](#)
- Infant <1 month old
- Any infant < 6 months with signs of sepsis

Urgent

- Any renal impairment or abnormal renal ultrasound please discuss with paediatric nephrology ATR or nephrologist on call via Monash switch **9594 666**
- Ultrasound shows anatomical defect such as [hydronephrosis](#)

Routine

Refer the following to Nephrology:

- Febrile UTI
- Recurrent afebrile UTI (more than 3 in one year)
- Associated hypertension or can't take blood pressure
- Do not refer if single afebrile UTI over 24months of age with no other findings

Refer the following to [General Paediatrics](#)

- A infant that has a confirmed UTI without fever
- A child with 3 or more recurrent UTIs without fever

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