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
- Night wetting management for children under 7yrs
- Day wetting management for children under 5 years
- Mild Hydronephrosis < 10 mm in one of two kidneys with no other abnormalities
- Isolated persistent microscopic haematuria for < 6 months
- 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

CONGENTIAL 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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Program Director: Prof Nick Freezer

Last updated: 18/10/2021

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

Mandatory referral content

Demographic:
Full name
Date of birth
Next of kin
Postal address
Contact number(s)
Email address
Medicare number
Referring GP details
including **provider number**
Usual GP (if different)
Interpreter requirements

Clinical:
Reason for referral
Duration of symptoms
Management to date and response to treatment
Past medical history
Current medications and medication history if relevant
Functional status
Psychosocial history
Dietary status
Family history
Diagnostics as per referral guidelines

Click here to download the outpatient referral form

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)

Submit a referral

Refer via electronic referral using HealthLink. Details available at https://monashchildrenshospital.org/for-health-professionals/gp-ereferrals/
OR
Email: scmonashchildrens@monashhealth.org
Fax: 8572 3007

General enquiries

Phone: **8572 3004**

Head of Department: Dr Lilian Johnstone
Program Director: Prof Nick Freezer
Last updated: 27/06/2019

Monash Children's Hospital

HYDRONEPHROSIS

ANTENATAL HYDRONEPHROSIS

Initial GP Workup

Refer to antenatal hydronephrosis guidelines for more information

Initial postnatal scan timing: If patient has MFM 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

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.

WHEN TO REFER?

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 8-15mm. Consider emailing renal team to discuss specific individual patients

BACK

HYDRONEPHROSIS OVER 12 MONTHS OLD

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

Management Options for GP

N/A

WHEN TO REFER?

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 8-15mm. Consider emailing renal team to discuss specific individual patients

BACK

CONGENTIAL ABNORMALITIES OF THE KIDNEY AND URINARY TRACT

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

Initial GP Work Up

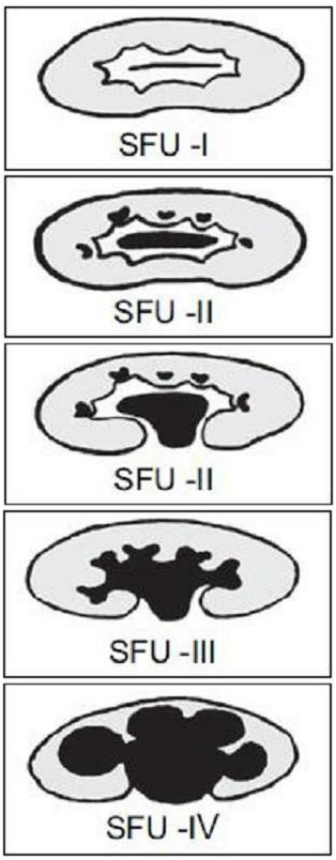
- Measure BP
- Renal ultrasound
- Urine protein: creatinine ratio
- Serum creatinine if reduced / abnormal renal parenchyma

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



WHEN TO REFER?

Urgent

Consider hydronephrosis > SFU 3 (see below) or as per hydronephrosis guideline

Routine

All other patients

BACK

ACUTE OR CHRONIC RENAL FAILURE

RENAL FAILURE

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

WHEN TO REFER?

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

BACK

HAEMATURIA

MICROSCOPIC HAEMATURIA

Presentation

The presence of >10 RBC 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.
- Please closely evaluate for any voiding dysfunction or vulvovaginitis and treat.
- If microhaematuria remains please start additional testing as per below.
- For isolated microhaematuria referrals will only be accepted once the patient has had >6 months of persistent microhaematuria.
- Check blood pressure and growth

Investigations

- Renal ultrasound
- Urine Tests
  - Urinalysis with microscopy (clean catch urine) – 3 or more samples within 6 months
  - Urine culture
  - Urine albumin: creatinine ratio (early morning) - 3 or more samples within 6 months
  - Urine calcium to urine creatinine ratio (N=<0.7mmol/mmol)
  - Urine dipstick on parents
- 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 the microhaematuria is isolated and there have been <3 urines over 6 months that document this.

WHEN TO REFER?

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

BACK

HAEMATURIA (cont'd)

MACROSCOPIC HAEMATURIA

Presentation
Darkening of urine visible to the naked eye.

Initial GP Work Up
- BP
- Urine dipstick
- 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
- If urine does not show any red cells but dipstick is positive consider CK and urine myoglobin.

WHEN TO REFER?

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.

BACK

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

BACK

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

BACK

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 new 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**

BACK

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 unless patient is diabetic or has persistent isolated microscopic haematuria
- 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

BACK

OTHER (cont'd)

REFLUX NEPHROPATHY

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

WHEN TO REFER?

Urgent

Refer if:

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

BACK

RENAL CYST

Initial GP Work Up

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

Management Options for GP

Monitor BP and urine protein

WHEN TO REFER?

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

BACK

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

BACK

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

Night wetting

- Offer treatment if 7 years or older
- Use diary to measure and monitor
- Explore parenting practices e.g. night fluid restricting, overnight toileting, punitive practices
- 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
- Renal ultrasound

Investigations

Day wetting

- Urine MCS
- Renal US with pre and post void bladder volumes

Night wetting

- Urine MCS

- Consider bladder diary http://www.monashchildrenshospital.org/wp-content/uploads/2017/05/bladder-diary-form.pdf

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

BACK

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

BACK