The approach to a child with Proteinuria

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Summary
This document is aimed at providing doctors presented with a child with proteinuria with information to guide initial investigation.

Introduction
Proteinuria is an important marker of underlying renal disease. Heavy proteinuria may manifest as nephrotic syndrome and management of this problem is described in another document. Less severe proteinuria is often detected by dipstick analysis of urine.

Investigations
Quantify the proteinuria by sending urine to biochemistry for measurement of protein / creatinine ratio.

If Up/Uc > 20 mg/mmol, need to exclude orthostatic proteinuria.
   • Send at least two early morning urines for protein / creatinine ratio

If these are normal and random urines are > 20 mg/mmol, then a diagnosis of orthostatic proteinuria can be made and patient reassured. No further follow-up required.

If EMU Up/Uc is raised (> 20 mg/mmol) then child needs investigation as to cause of proteinuria. The presence of haematuria should not influence investigation.

A full history and examination is required.
Check blood pressure. If treatment of hypertension required, then use an ACE inhibitor or ARII receptor antagonist.

Perform the following investigations:
   • Urine culture
   • U&E’s
   • Creatinine
   • Bone chemistry
   • Serum albumin
   • C3 & C4
   • ANA
   • Anti-dsDNA
   • Hepatitis serology
   • Serum IgA level
   • Serum cholesterol
   • Urine beta-2-microglobulin / creatinine ratio

The next question is whether a real biopsy is required.

Indications for a biopsy:
   • Up/Uc persistently > 100 mg/mmol
   • Raised creatinine

Further management should be discussed with a paediatric nephrology consultant.