

# Case Study: The use of Renastep™ as part of the dietary management of Acute Kidney Injury (AKI)

Written by a Paediatric Renal Dietitian, UK



## Patient Details & Medical History

**Age:**  
16 years

**Gender:**



**Diagnosis:**

Acute Kidney Injury (AKI) with hypercalcaemia.  
Background of Trisomy 21 and oral aversion.

### Relevant History:

Patient was admitted following routine blood tests having been found to be in AKI. At the time of admission it was unknown if there was a background of Chronic Kidney Disease (CKD) or evolving AKI with unknown cause. The patient was given IV fluids, with serum and urinary investigations.

### Anthropometry:

- **Weight on admission: 27.3kg** <0.4th centile\*
- **Current weight: 36.7kg** 2nd centile\*
- **Height on admission: 128cm** 0.4th centiles\*
- **Current height: 131.2cm** 0.4th-2nd centile\*

\* All adjusted for Trisomy 21

### Biochemistry:

	Hospital Reference Range	Serum Levels
Urea	2.5-6.6 mmol/L	<b>13.5 ↑</b>
Creatinine	34-72 umol/L	<b>143 ↑</b>
Potassium	2.6-5.0mmol/L	<b>5.9 ↑</b>
Calcium	2.2-2.6 mmol/L	<b>3.63 ↑</b>
Phosphate	0.8-1.4 mmol/L	<b>1.41 ↑</b>
Albumin	36-47 g/L	<b>33 ↓</b>



## Dietetic Assessment

### Feeding history:

Only managing porridge with milk and the occasional yogurt at school. Fluid intake is poor.

### Plan:

Meet energy and protein requirements whilst managing potassium and phosphate intake by reducing the patients intake of cow's milk and using Renastep and a juice based oral nutritional supplement (ONS) instead.

### Nutritional Requirements:

EAR based on weight on admission = **1201kcal/day**

EAR based on ideal body weight of 55.3kg = **2430 kcals/day**

Protein: **45.4g/day**

**12-20 mmol Ca/day**



## Dietetic Management

The patient was regularly reviewed in clinic; she was keen to take more porridge at home and had started taking yogurts at school. Her kidney function was improving; her serum potassium and phosphate levels had normalised. Her family were making 5 bowls of porridge per day for her; 3 bowls made with 125mls of Renastep per bowl, 1 with juice-based ONS, and 1 with cow's milk.

Estimated Dietary Intake: 1398kcal, 38g protein, potassium 117mmol, phosphate 11.3mmol, calcium 19.5mmol.

It was felt that the patient could eat more so the family were advised to make any additional bowls of porridge with a non-calcium fortified plant-based milk alternative.

### Six months after admission:

- Once the patients serum potassium and phosphate levels normalised, Renastep was discontinued.
- Cow's milk and yogurts have been increased to meet LRNI for calcium.
- Non-calcium fortified plant-based milk alternatives continue.

Estimated Dietary Intake: 1590kcal, 51g protein, 25.4mmol potassium, 22mmol phosphate, 22mmol calcium.



## Conclusions

- The use of Renastep enabled a reduction in potassium and phosphate intake which meant the patients serum potassium and phosphate levels returned to be within the reference range.
- Renastep is 2kcal/ml which resulted in energy and protein being provided whilst limiting potassium and phosphate intake – this was an ideal way to provide nutrition support for this patient.
- Renastep can be taken as a drink, added to foods or used in recipes. .
- Renastep is convenient and easy to use.

### Reference:

Scientific Advisory Committee on Nutrition (SACN) Dietary Reference Values for Energy (2011). London: The stationary office.

Dietary reference values for food energy and nutrients for the United Kingdom. Report no. 41 (1991) Report on Health and Social Subjects. London: HMSO.

### This information is intended for use by Healthcare Professionals only.

Renastep is for the dietary management of kidney disease from 3 years onwards. Renastep is a Food for Special Medical Purposes and must only be used under strict medical supervision with regular monitoring of nutritional status and electrolyte levels. Renastep is not suitable for use as a sole source of nutrition. Renastep contains **Milk** (milk protein) and **Fish** (tuna oil). Renastep is for enteral use only. For detailed product information refer to product label.



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All information correct at the time of print.

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