

Nutrition and growth in children with chronic renal insufficiency

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Volume II - Appendices

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Contents

Volume II – Appendices

List of tables	ii
List of figures	vii

Appendix 1

Chapter 4	Estimation of glomerular filtration rate	1
-----------	--	---

Appendix 2

Chapter 5	Baseline results	7
-----------	------------------	---

Appendix 3

Chapter 6	Longitudinal results and discussion of individuals	53
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<u>Appendix 4</u>	Dietary information for children with CRI	108
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Individual sheets on the following:

Why is a special diet necessary?

Energy -	Overview
Carbohydrate -	Starches and sugars
Fats and oils -	Types and how to increase or decrease
Protein -	Animal and protein sources
Phosphate -	Dairy products and other sources, medications
Salt -	Foods high in salt and low salt alternatives
Iron -	Good sources and foods that affect absorption
So what can my child eat? -	individualised meal structure for the day

Nutritional supplements

Exercise

Dietary advice summary for nurseries, schools and colleges

List of tables Volume II - Appendices

Appendix 1

Chapter 4	Estimation of glomerular filtration rate	
4.3.5.2	Change in individual renal function at 1 and 2 years compared with baseline, as determined by estimated GFR from plasma creatinine/ height or serum cystatin C concentration in children originally classified with mild CRI	4
4.3.5.3	Change in individual renal function at 1 and 2 years compared with baseline, as determined by estimated GFR from plasma creatinine/ height or serum cystatin C concentration in children originally classified with moderate CRI	5
4.3.5.4	Change in individual renal function at 1 and 2 years compared with baseline, as determined by estimated GFR from plasma creatinine/ height or serum cystatin C concentration in children originally classified with severe CRI	6

Appendix 2

Chapter 5	Baseline results	
	<i>Anthropometric evaluation and blood pressure</i>	
5.1.1	Baseline anthropometric data for all 27 children with mild CRI	8
5.1.2	Baseline anthropometric data for all 21 children with moderate CRI	9
5.1.3	Baseline anthropometric data for all 19 children with severe CRI	10
5.1.4	Baseline anthropometric data for all 58 children with 'normal' renal function	11-12
	<i>Nutrient intake</i>	
5.2.1	Baseline energy and protein intakes from food alone (and from food inclusive of nutritional supplements) in the 23 children with mild CRI who completed a food diary	13
5.2.2	Baseline energy and protein intakes from food alone (and from food inclusive of nutritional supplements) in the 19 children with moderate CRI who completed a food diary	14
5.2.3	Baseline energy and protein intakes from food alone (and from food inclusive of nutritional supplements) in the 18 children with severe CRI who completed a food diary	15
5.2.4	Baseline energy and protein intakes from food alone in the 35 children with 'normal' renal function who completed a food diary	16-17
5.2.6	Baseline fat and carbohydrate intakes from food and nutritional supplements in the 23 children with mild CRI who completed a food diary	18
5.2.7	Baseline fat and carbohydrate intakes from food and nutritional supplements in the 19 children with moderate CRI who completed a food diary	19
5.2.8	Baseline fat and carbohydrate intakes from food and nutritional supplements in the 18 children with severe CRI who completed a food diary	20

5.2.9	Baseline fat and carbohydrate intakes from food in the 35 children with ‘normal’ renal function who completed a food diary	21-22
5.2.11	Baseline sodium and vitamin & mineral intakes from food (inclusive of nutritional supplements, micronutrients excluded) in the 23 children with mild CRI who completed a food diary	23
5.2.12	Baseline sodium and vitamin & mineral intakes from food (inclusive of nutritional supplements, micronutrients excluded) in the 19 children with moderate CRI who completed a food diary	24
5.2.13	Baseline sodium and vitamin & mineral intakes from food (inclusive of nutritional supplements, micronutrients excluded) in the 18 children with severe CRI who completed a food diary	25
5.2.14	Baseline sodium and vitamin & mineral intakes from food (micronutrients excluded) in the 35 children with ‘normal’ renal function who completed a food diary	26-27
	<i>Biochemical parameters</i>	
5.3.1	Baseline plasma concentrations of relevant electrolytes and metabolites in all 27 children with mild CRI	28
5.3.2	Baseline plasma concentrations of relevant electrolytes and metabolites in all 21 children with moderate CRI	29
5.3.3	Baseline plasma concentrations of relevant electrolytes and metabolites in all 19 children with severe CRI	30
5.3.4	Baseline plasma concentrations of relevant electrolytes and metabolites in all 58 children with ‘normal’ renal function	31-32
5.3.6	Baseline plasma concentrations of variables relating to bone activity in all 27 children with mild CRI	33
5.3.7	Baseline plasma concentrations of variables relating to bone activity in all 21 children with moderate CRI	34
5.3.8	Baseline plasma concentrations of variables relating to bone activity in all 19 children with severe CRI	35
5.3.9	Baseline plasma concentrations of variables relating to bone activity in all 58 children with ‘normal’ renal function	36-37
5.3.11	Baseline markers of protein status in all 27 children with mild CRI	38
5.3.12	Baseline markers of protein status in all 21 children with moderate CRI	39
5.3.13	Baseline markers of protein status in all 19 children with severe CRI	40
5.3.14	Baseline markers of protein status in all 58 children with ‘normal’ renal function	41-42
5.3.16	Baseline serum lipid concentrations in all 27 children with mild CRI	43
5.3.17	Baseline serum lipid concentrations in all 21 children with moderate CRI	44
5.3.18	Baseline serum lipid concentrations in all 19 children with severe CRI	45
5.3.19	Baseline serum lipid concentrations in all 58 children with ‘normal’ renal function	46-47
5.3.21	Baseline plasma iron-related variables in all 27 children with mild CRI	48

5.3.22	Baseline plasma iron-related variables in all 21 children with moderate CRI	49
5.3.23	Baseline plasma iron-related variables in all 19 children with severe CRI	50
5.3.24	Baseline plasma iron-related variables in all 58 children with 'normal' renal function	51-52

Appendix 3

Chapter 6 Longitudinal results and discussion of individuals

Growth, other anthropometric indices, energy and protein intakes

6.2.1.1	Change in individual height, weight and BMI SDS's at 1 & 2 years compared to baseline in children originally classified with mild CRI	57
6.2.1.2	Change in individual height, weight and BMI SDS's at 1 & 2 years compared to baseline in children originally classified with moderate CRI	58
6.2.1.3	Change in individual height, weight and BMI SDS's at 1 & 2 years compared to baseline in children originally classified with severe CRI	59
6.2.2.1	Change in individual dietary energy (including supplements) and protein intakes at 1 & 2 years compared to baseline in children originally classified with mild CRI	62
6.2.2.2	Change in individual dietary energy (including supplements) and protein intakes at 1 & 2 years compared to baseline in children originally classified with moderate CRI	63
6.2.2.3	Change in individual dietary energy (including supplements) and protein intakes at 1 & 2 years compared to baseline in children originally classified with severe CRI	64

Macronutrient intake and hyperlipidaemia

6.3.1	Change in individual dietary fat and carbohydrate intakes (including supplements) at 1 & 2 years compared to baseline in children originally classified with mild CRI	65
6.3.2	Change in individual dietary fat and carbohydrate intakes (including supplements) at 1 & 2 years compared to baseline in children originally classified with moderate CRI	66
6.3.3	Change in individual dietary fat and carbohydrate intakes (including supplements) at 1 & 2 years compared to baseline in children originally classified with severe CRI	67
6.3.5	Change in individual serum lipid concentrations at 1 & 2 years compared to baseline in children originally classified with mild CRI	69
6.3.6	Change in individual serum lipid concentrations at 1 & 2 years compared to baseline in children originally classified with moderate CRI	70
6.3.7	Change in individual serum lipid concentrations at 1 & 2 years compared to baseline in children originally classified with severe CRI	71

	<i>Progression of CRI</i>	
6.4.1.1	Change in individual plasma urea and electrolytes at 1 & 2 years compared to baseline in children originally classified with mild CRI	72
6.4.1.2	Change in individual plasma urea and electrolytes at 1 & 2 years compared to baseline in children originally classified with moderate CRI	73
6.4.1.3	Change in individual plasma urea and electrolytes at 1 & 2 years compared to baseline in children originally classified with severe CRI	74
6.4.2.1	Individual blood pressure and change in SDS's at 1 & 2 years compared to baseline in children originally classified with mild CRI	77
6.4.2.2	Individual blood pressure and change in SDS's at 1 & 2 years compared to baseline in children originally classified with moderate CRI	78
6.4.2.3	Individual blood pressure and change in SDS's at 1 & 2 years compared to baseline in children originally classified with severe CRI	79
	<i>Sodium, phosphorus and calcium intakes and bone metabolism</i>	
6.5.1	Change in individual dietary sodium, phosphate and calcium intakes at 1 & 2 years compared to baseline in children originally classified with mild CRI	83
6.5.2	Change in individual dietary sodium, phosphate and calcium intakes at 1 & 2 years compared to baseline in children originally classified with moderate CRI	84
6.5.3	Change in individual dietary sodium, phosphate and calcium intakes at 1 & 2 years compared to baseline in children originally classified with severe CRI	85
6.5.5	Change in individual plasma concentrations relating to bone activity at 1 & 2 years compared to baseline in children originally classified with mild CRI	88
6.5.6	Change in individual plasma concentrations relating to bone activity at 1 & 2 years compared to baseline in children originally classified with moderate CRI	89
6.5.7	Change in individual plasma concentrations relating to bone activity at 1 & 2 years compared to baseline in children originally classified with severe CRI	90
	<i>Anaemia and iron, folate and vitamin C intakes</i>	
6.6.1	Change in individual iron, folate and vitamin C intakes (excluding micronutrient supplements) at 1 & 2 years compared to baseline in children originally classified with mild CRI	91
6.6.2	Change in individual iron, folate and vitamin C intakes (excluding micronutrient supplements) at 1 & 2 years compared to baseline in children originally classified with moderate CRI	92
6.6.3	Change in individual iron, folate and vitamin C intakes (excluding micronutrient supplements) at 1 & 2 years compared to baseline in children originally classified with severe CRI	93
6.6.5	Change in individual plasma concentrations of iron-related variables at 1 & 2 years compared to baseline in children originally classified with mild CRI	95

6.6.6	Change in individual plasma concentrations of iron-related variables at 1 & 2 years compared to baseline in children originally classified with moderate CRI	96
6.6.7	Change in individual plasma concentrations of iron-related variables at 1 & 2 years compared to baseline in children originally classified with severe CRI	97
	<i>Adherence to dietary advice</i>	
6.7.1	Means related to the occurrence of foods as either the greatest or second greatest contributor to energy intake (% total energy intake) at baseline, 1 and 2 years	98
6.7.2	Means related to the occurrence of foods as either the greatest or second greatest contributor to protein intake (% total protein intake) at baseline, 1 and 2 years	99
6.7.3	Means related to the occurrence of foods as either the greatest or second greatest contributor to sodium intake (% total sodium intake) at baseline, 1 and 2 years	100
6.7.4	Means related to the occurrence of foods as either the greatest or second greatest contributor to phosphate intake (% total phosphate intake) at baseline, 1 and 2 years	101
6.7.5	Means related to the occurrence of foods as either the greatest or second greatest contributor to calcium intake (% total calcium intake) at baseline, 1 and 2 years	102
6.7.6	Means related to the occurrence of foods as either the greatest or second greatest contributor to iron intake (% total iron intake) at baseline, 1 and 2 years	103
6.7.7	Means related to the occurrence of foods as either the greatest or second greatest contributor to vitamin C intake (% total vitamin C intake) at baseline, 1 and 2 years	104
	<i>Biochemical assessment (plasma proteins) of nutritional status</i>	
6.8.1	Change in individual markers of protein status at 1 & 2 years compared to baseline in children originally classified with mild CRI	105
6.8.2	Change in individual markers of protein status at 1 & 2 years compared to baseline in children originally classified with moderate CRI	106
6.8.3	Change in individual markers of protein status at 1 & 2 years compared to baseline in children originally classified with severe CRI	107

List of figures Volume II - Appendices

Appendix 1

Chapter 4	Estimation of glomerular filtration rate	
4.3.5.1	Change in renal function over the 2 year period between & within groups [based on normalised creatinine/ height ($\mu\text{mol/l/cm}$)]	2
4.3.5.2	Change in renal function over the 2 year period between & within groups [based on normalised cystatin C concentrations (mg/l)]	3

Appendix 3

Chapter 6	Longitudinal results and discussion of individuals	
	<i>Growth, other anthropometric indices, energy and protein intakes</i>	
6.2.1.1	Individual height standard deviation scores over the 2 year period between groups	54
6.2.1.2	Individual weight standard deviation scores over the 2 year period between groups	55
6.2.1.3	Individual body mass index standard deviation scores over the 2 year period between groups	56
6.2.2.1	Individual total energy intakes (% EAR), including supplements over the 2 year period between groups	60
6.2.2.2	Individual protein intakes (g/kg) over the 2 year period between groups	61
	<i>Macromutrient intake and hyperlipidaemia</i>	
6.3	Individual serum HDL concentrations over the 3 year period between groups	68
	<i>Progression of CRI</i>	
6.4.2.1	Individual systolic blood pressure standard deviation scores over the 2 year period between groups	75
6.4.2.2	Individual diastolic blood pressure standard deviation scores over the 2 year period between groups	76
	<i>Sodium, phosphorus and calcium intakes and bone metabolism</i>	
6.5.1	Individual total sodium intakes (mmol/d) over the 2 year period between groups	80
6.5.2	Individual phosphate intakes (mg/d) over the 2 year period between groups	81
6.5.3	Individual calcium intakes (% RNI) over the 2 year period between groups	82
6.5.5	Individual plasma phosphate concentrations over the 2 year period between groups	86
6.5.6	Individual serum parathyroid concentrations over the 2 year period between groups	87
	<i>Anaemia and iron, folate and vitamin C intakes</i>	
6.6	Individual plasma haemoglobin concentrations over the 2 year period between groups	94

Appendix 1

Chapter 4

Estimation of Glomerular Filtration Rate

Figure 4.3.5.1 Change in renal function over the 2 year period between & within groups [based on normalised creatinine/ height ($\mu\text{mol/l/cm}$)]

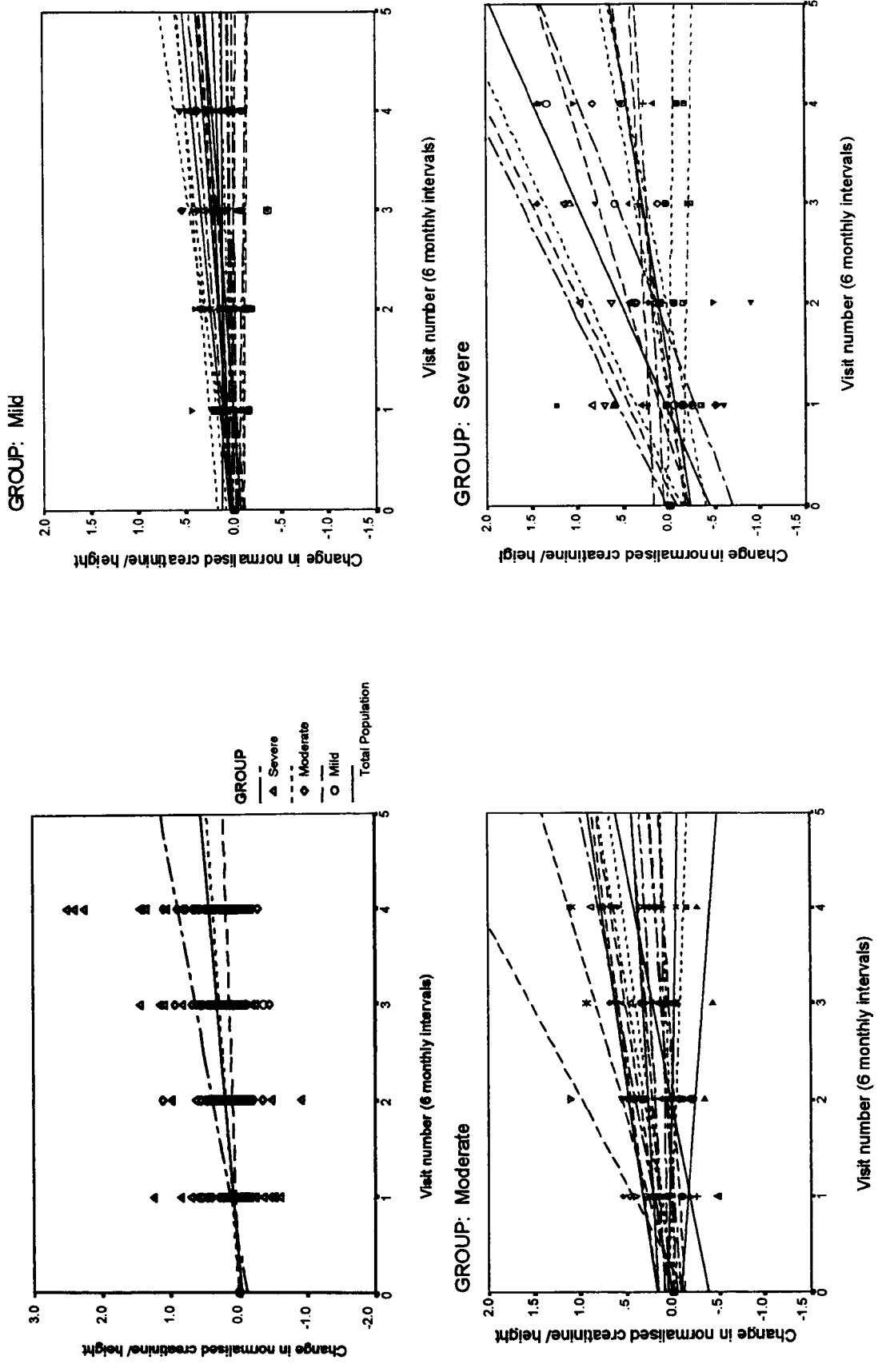


Figure 4.3.5.2 Change in renal function over the 2 year period between & within groups [based on normalised cystatin C concentrations (mg/l)]

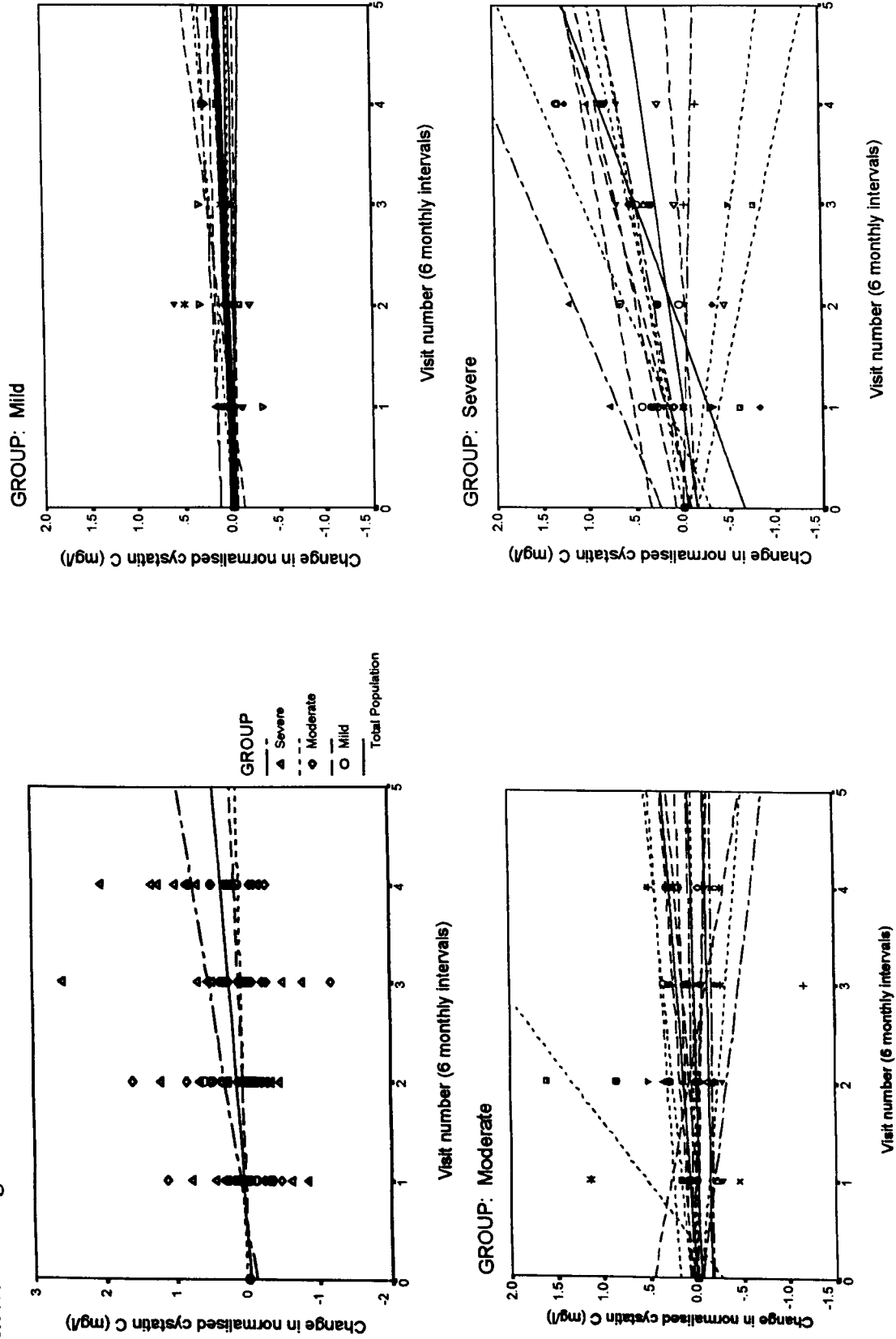


Table 4.3.5.2 Change in individual renal function at 1 and 2 years compared with baseline, as determined by estimated GFR from plasma creatinine/height or serum cystatin C concentration in children originally classified with mild CRI

Patient number	Change in GFR _{creat/height}			Change in GFR _{cys C}		
	1 year	2 year	CRI group at 2 years	1 year	2 year	CRI group at 2 years
1	-7	0	Mild	12		
4	-3	-19	Moderate	-3		
5						
6	4	-3	Mild	0		
7	7	-2	Moderate	2		
8	-7	-13	Mild	-1		
9	6	3	Mild	-5	-12	Moderate
10	-1			-2		
11						
12						
13	-18	-21	Moderate		-8	Mild
14	-1	-6	Moderate			
15						
16						
17	-17	-15	Mild	-24	-7	Mild
18	-21	-22	Moderate		-11	Mild
19	-16	-23	Moderate	-11	-9	Moderate
20	-19	-20	Moderate	-1		
21	2	3	Mild	-12		
22	-6			-2		
23	-5	-8	Mild	-5		
24	-9	-1	Moderate			
25	-1	4	Mild			
26	1	-8	Mild	-6		
27	0	-2	Mild	5		

GFR, glomerular filtration rate

Table 4.3.5.3 Change in individual renal function at 1 and 2 years compared with baseline, as determined by estimated GFR from plasma creatinine/height or serum cystatin C concentration in children originally classified with moderate CRI

Patient number	Change in GFR _{creat/height}			Change in GFR _{cys c}		
	1 year	2 year	CRI group at 2 years	1 year	2 year	CRI group at 2 years
28	0	-6	Moderate	0	1	Moderate
29	1	-4	Moderate	0	-3	Moderate
30	2	-7	Moderate	-5	-8	Moderate
31	5	-4	Moderate	-12	-11	Moderate
32	-4	-7	Moderate	-4	-2	Moderate
33						
34	-7	-4	Moderate		3	Mild
35	-6	-12	Severe	0	-6	Severe
36	-26		ESRD	-19		ESRD
37	-4	-9	Severe	0	2	Moderate
38	-8	-11	Severe	6	8	Moderate
39	-3	-5	Moderate	2	-7	Moderate
40	-7	-6	Moderate			
41	-7	-8	Moderate	3		
42	-6	-10	Severe			
43	-2	-3	Severe	-8	-3	Severe
44	6	4	Moderate	-7		
45	-6	-6	Severe			
46	-9	-12	Moderate	-4		
47	4	6	Mild	9		
48	-1	1	Moderate	5		

GFR, glomerular filtration rate

Table 4.3.5.4 Change in individual renal function at 1 and 2 years compared with baseline, as determined by estimated GFR from plasma creatinine/height or serum cystatin C concentration in children originally classified with severe CRI

Patient number	Change in GFR _{creat/height} CRI group at 2 years			Change in GFR _{cys c} CRI group at 2 years		
	1 year	2 year		1 year	2 year	
49	-2	-8	Severe	3	-8	Severe
50	0	1	Severe	-3	-9	Severe
51	-1	-8	Severe	-3	-8	Severe
52	-3	-8	Severe	0	-7	Severe
53	-1	-3	Severe	-7	-8	Severe
54	-3	-10	Severe		-10	Severe
55			ESRD			ESRD
56			ESRD			ESRD
57	3	-3	Severe	0	-2	Severe
58	-1	-4	Severe		3	Moderate
59			ESRD			ESRD
60	-1	-1	Severe	-8	-7	Severe
61			ESRD			ESRD
62	0		ESRD	-1		ESRD
63	-5	-12	Severe	2	-1	Severe
64			ESRD			ESRD
65	3	3	Severe			
66	-5	-10	Severe		-8	Severe
67	3	-4	Severe			

GFR, glomerular filtration rate

Appendix 2

Chapter 5

Baseline Results

Table 5.1.1 Baseline anthropometric data for all 27 children with mild CRI

Patient number	Weight SDS	Height SDS	BMI SDS	MUAC SDS	SBP	SBP SDS	DBP	DBP SDS
1	1.17	2.08	-0.27	0.67	115	1.28	57	0.00
2	-0.52	-0.77	0.03	0.67	114	0.00	71	0.67
3	1.89	-0.49	2.61	1.28	130	1.65	80	2.00
4	0.13	0.29	-0.55	0.67	130	2.00	73	1.65
5	0.00	0.62	-0.55	0.67	120	2.00	80	2.00
6	0.04	0.44	-0.35	0.67	111	1.28	55	0.00
7	0.17	-0.46	0.68	0.67	98	0.00	59	0.67
8	0.31	0.37	0.1	0.00	119	1.65	67	1.28
9	-0.82	-2.07	0.41	0.00	129	2.00	83	2.00
10	2.48	0.73	2.29	2.00	142	2.00	74	1.28
11	0.15	-0.79	0.89	0.67	120	1.65	67	0.67
12	0.84	0.17	0.96	1.28	112	-0.67	70	0.67
13	-0.68	-0.06	-1.0	-0.67	97	-0.67	55	0.00
14	0.11	-0.22	0.32	0.67	103	0.00	61	0.00
15	-1.38	-0.97	-1.4	-1.28	118	1.28	67	0.67
16	-0.61	-1.41	0.39	0.00	100	0.67	66	1.28
17	1.46	-0.02	1.96	1.28	113	0.67	67	0.67
18	-1.04	-0.39	-1.3	-0.67	114	0.67	65	0.67
19	-2.11	-0.38	-2.8	-1.65	118	0.67	71	0.67
20	0.2	-1.23	1.23	1.28	131	1.65	67	0.67
21	-0.1	0.42	-0.59	0.00	126	1.28	62	0.00
22	-1.6	-2.64	0.06	0.67	116	1.65	76	2.00
23	-0.52	-0.48	-0.19	0.00	129	1.28	78	1.65
24	-2.91	-1.85	-2.4	-2.00	113		101	
25	-0.82	-0.85	-0.47	0.00	106	0.67	73	1.65
26	0.08	0.8	-0.65	-0.67	120	1.28	53	0.67
27	1.88	0.7	2.05	1.65	123	2.00	68	1.28

SDS, standard deviation score;
DBP, diastolic blood pressure

SBP, systolic blood pressure;

Table 5.1.2 Baseline anthropometric data for all 21 children with moderate CRI

Patient number	Weight SDS	Height SDS	BMI SDS	MUAC SDS	SBP	SBP SDS	DBP	DBP SDS
28	-2.4	-1.71	-2.0	-1.28	107	0.00	57	0.00
29	-1.38	-1.97	0.08	0.00	116	1.65	70	1.65
30	-1.61	0.91	-2.5	-1.28	114	0.00	69	0.67
31	0.36	-0.21	0.73	0.67	114	1.28	64	0.67
32	1.63	-0.04	2.03	2.00	138	1.28	65	0.67
33	-1.98	-1.31	-1.6	-0.67	118		70	
34	-0.04	0.3	-0.9	-1.28	109	1.28	79	2.00
35	0.65	-0.3	1.11	1.65	125	2.00	55	0.67
36	-2.01	-2.45	-0.4	-0.67				
37	-1.64	-1.17	-1.2	-0.67	101		64	
38	-1.6	-2.24	-0.19	-0.67	124	2.00	70	1.28
39	-0.56	-0.79	-0.04	-0.67	119	0.67	72	1.28
40	1.74	0.84	1.91	1.65	131	2.00	70	0.67
41	1.71	1.07	1.76	1.28	123	1.28	64	0.67
42	0.8	-0.76	1.61	1.28	128	1.28	66	0.67
43	0.39	-0.01	0.53	0.00	122	1.28	79	2.00
44	-2.24	-2.44	-0.8	-0.67	111	1.28	60	0.67
45	-2.06	-1.71	-1.2	-1.65	138	2.00	79	2.00
46	-1.06	-0.01	-1.8	-0.67	126	1.28	63	0.00
47	1.82	1.51	1.44	1.28	116	1.28	72	1.28
48	-0.25	0.22	-0.67	-0.67	145	2.00	65	0.67

SDS, standard deviation score;
DBP, diastolic blood pressure

SBP, systolic blood pressure;

Table 5.1.3 Baseline anthropometric data for all 19 children with severe CRI

Patient number	Weight SDS	Height SDS	BMI SDS	MUAC SDS	SBP	SBP SDS	DBP	DBP SDS
49	-2.16	-3.52	0.22	-1.28	122	2.00	59	0.00
50	-2.33	-2.00	-1.2	-2.00	105	0.67	79	2.00
51	-1.75	-1.98	-0.58	-0.67	129	2.00	62	0.67
52	-1.97	-0.53	-1.9	-2.00	120	0.67	60	0.00
53	-1.2	-1.23	-0.61	-0.67	129	2.00	85	2.00
54	-1.39	-1.35	-0.88	-0.67	114	0.67	64	0.67
55	-0.73	-2.86	1.25		149	2.00	92	2.00
56	-2.46	-1.22	-2.5	-1.28	118	1.65	62	0.67
57	-1.67	-1.51	-1.3	-1.28	135	2.00	71	1.28
58	-2.63	-1.15	-2.4	-2.00	121	0.67	79	2.00
59	0.82	1.07	0.45	0.67	136	2.00	75	1.28
60	-1.15	-2.04	-0.06	0.00	123	1.65	77	2.00
61	-0.39	-1.37	0.51	0.00	126	2.00	85	2.00
62	-2.88	-3.66	-0.2	0.00	117		71	
63	-0.28	-0.69	0.15	0.67	113	0.67	64	0.00
64	-0.12	-1.57	1.03	0.67	137	2.00	100	2.00
65	0.38	-0.24	0.69	0.67	122	0.67	48	-1.28
66	-1.95	-2.11	-0.78	-0.67	131	2.00	81	2.00
67	-1.2	-1.46	-0.32	-0.67	89		39	

SDS, standard deviation score;
DBP, diastolic blood pressure

SBP, systolic blood pressure;

Table 5.1.4 Baseline anthropometric data for all 58 children with ‘normal’ renal function

Patient number	Weight SDS	Height SDS	BMI SDS	MUAC SDS	SBP	SBP SDS	DBP	DBP SDS
68	-1.40	-0.71	-1.50	-1.28	119	1.28	70	1.28
69	-0.17	1.10	-1.60	-0.67	94	-0.67	61	0.00
70	-0.70	0.78	-1.40	-1.65	121	0.67	58	-0.67
71	-0.64	-2.38	1.15	0.00	120	2.00	71	1.65
72	0.95	1.83	0.17	0.00	112	0.00	59	0.00
73	1.08	0.38	1.18	1.65	147	2.00	69	1.28
74	1.05	1.35	0.39	0.00	112	0.67	54	-0.67
75	-0.63	0.60	-1.50	-1.28	112	-1.28	71	0.67
76	0.16	-0.37	0.49	1.28	99	0.00	58	0.00
77	0.39	0.56	0.04	1.28	127	2.00	72	1.28
78	-0.62	-0.45	-0.57	-0.67	129	2.00	75	1.65
79	0.35	-0.19	0.62	1.28	103		60	
80	1.52	1.96	0.52	0.00	110	0.67	70	1.28
81	-0.86	-0.63	-0.66	-0.67	97	0.00	41	-1.65
82	0.43	0.24	0.48	0.67	107	-0.67	55	-0.67
83	-0.29	0.00	-0.47	0.67	112	1.28	49	-0.67
84	0.63	1.03	0.13	0.00	114	1.28	57	0.00
85	-0.05	-0.04	-0.05	0.67	107	0.67	70	1.65
86	0.17	0.18	0.07	0.00	98	0.00	47	-0.67
87	-0.78	-0.30	-0.87	-0.67	111	1.28	59	0.00
88	-2.15	-0.98	-2.4	-2.00	106	0.00	67	0.67
89	0.85	0.78	0.43	1.28	113		67	
90	0.00	0.76	-0.58	-0.67	105	0.00	64	0.67
91	-0.43	-0.46	-0.29	0.00	125	1.65	73	1.28
92	1.51	1.77	0.93	1.28	151	1.65	47	-1.65
93	0.94	1.20	0.25	0.67	88	-1.28	57	0.00
94	-1.04	-1.7	-0.18	0.67	105	0.00	46	-1.28
95	2.73	-0.68	3.55	2.00	136	2.00	79	2.00
96	-0.13	-0.14	-0.08	0.67	104	0.00	48	-0.67
97	0.61	-0.22	1.09	1.28	106	0.67	56	0.00
98	1.66	2.25	0.38	1.28	105	0.67	59	0.00
99	-0.2	-0.53	0.2	0.67	110	0.67	46	-0.67
100	2.12	0.61	2.32	2.00	97	0.00	44	-0.67
101	0.45	0.82	0.05	0.67	115	1.28	67	0.67

Table 5.1.4 Baseline anthropometric data for all 58 children with ‘normal’ renal function

Patient number	Weight SDS	Height SDS	BMI SDS	MUAC SDS	SBP	SBP SDS	DBP	DBP SDS
102	0.95	-0.06	1.32	1.28	146	2.00	67	0.67
103	0.03	-0.99	0.72	0.67	93	-1.28	62	0.00
104	-1.55	-1.17	-1.1	-1.28	122	2.00	79	2.00
105	1.49	1.28	1.24	1.28	137	2.00	80	2.00
106	1.40	1.04	1.28	1.28	129	1.65	74	1.28
107	0.29	-0.59	0.99	1.28	121	2.00	62	0.67
108	0.72	1.51	-0.32	0.67	121	1.65	70	1.28
109	0.50	-0.58	1.06	1.28	122	2.00	60	0.00
110	0.28	-0.82	0.94	1.28	104	0.00	69	1.28
111	-0.32	-0.81	0.21	-0.67	128	1.28	68	0.67
112	-2.01	-0.67	-3.00	-2.00	114	1.28	67	1.28
113	2.15	1.62	1.66	1.65	111	-0.67	65	0.00
114	0.88	1.62	0.19	0.67	128	1.65	74	1.28
115	-0.46	-1.08	0.21	-0.67	93	-1.28	73	1.65
116	0.32	-0.11	0.59	0.67	109	1.28	51	0.00
117	-0.42	-1.05	0.37	0.00	81		53	
118	0.91	1.67	-0.27	0.67				
119	0.03	-0.19	0.21	0.67	108	1.28	57	0.00
120	-0.67	-0.71	-0.41	-0.67				
121	0.31	1.20	-0.58	0.67	139	2.00	80	2.00
122	2.38	1.38	2.22	2.00	133	2.00	76	2.00
123	0.60	1.06	0.07	0.00	96	-0.67	55	-0.67
124	0.18	-0.39	0.6	0.67	140	2.00	62	0.67
125	0.72	-0.39	1.43	0.67	104	0.67	56	0.00

SDS, standard deviation score;
DBP, diastolic blood pressure

SBP, systolic blood pressure;

Table 5.2.1 Baseline energy and protein intakes from food alone (and from food inclusive of nutritional supplements) in the 23 children with mild CRI who completed a food diary

Patient number	Energy as %EAR (+ suppl)	% total energy intake from supplement	Energy as kcal/kg (+ suppl)	Protein as % total energy (+ suppl)	Protein (g/kg)
1	96		72	11	2.0
2					
3					
4	85		74	12.2	2.2
5	118		110	11.1	3.1
6	103		92	13.7	3.2
7	103		86	9.7	2.1
8					
9	105		63	9.9	1.4
10	95		24	17.1	1.0
11	96		76	12.9	2.2
12					
13	77		77	13.8	2.6
14	108		76	11.8	2.2
15	99		63	9.7	1.5
16	118		107	10.8	2.9
17	96		45	14.2	1.6
18	106		85	13.5	2.7
19	98		53	12.6	1.7
20	96		43	13.6	1.5
21	92		56	14.2	1.5
22	80		69	17.5	3.0
23	90		35	12.4	1.1
24	102 (110)	6.8	132 (142)	12.2 (11.3)	4.0
25	110		91	12.4	2.8
26	96		71	12.2	2.2
27	100		65	22.0	3.6

%EAR, % Estimated average requirement; suppl, nutritional supplement

Figures in brackets represent the value when the energy from the nutritional supplement is included

Table 5.2.2 Baseline energy and protein intakes from food alone (and from food inclusive of nutritional supplements) in the 19 children with moderate CRI who completed a food diary

Patient number	Energy as %EAR (+ suppl)	% total energy from supplement	Energy as kcal/kg (+ suppl)	Protein as % total energy (+ suppl)	Protein (g/kg)
28	58		49	17.1	2.1
29	81		81	8.7	1.8
30	107		50	12.9	1.6
31	98		82	13.5	2.8
32					
33					
34	101		96	11.6	2.9
35	102		61	13.7	2.1
36	113		132	14.5	4.8
37	89 (131)	32	101 (148)	8.7 (6.0)	2.2
38	94		81	11.5	2.3
39	101		45	9.1	1.0
40	96		40	19.2	2.0
41	95		44	13.6	1.5
42	97		41	11.4	1.2
43	104		56	14.4	2.0
44	47 (73)	35.5	49 (76)	9.7 (6.3)	1.2
45	90		94	16.7	3.9
46	56		32	11.3	0.9
47	114		70	12.7	2.2
48	106		99	11.7	2.9

%EAR, % Estimated average requirement; suppl, nutritional supplement

Figures in brackets represent the value when the energy from the nutritional supplement is included

Table 5.2.3 Baseline energy and protein intakes from food alone (and from food inclusive of nutritional supplements) in the 18 children with severe CRI who completed a food diary

Patient number	Energy as %EAR (+ suppl)	% total energy from supplement	Energy as kcal/kg (+ suppl)	Protein as % total energy (+ suppl)	Protein (g/kg)
49	53 (78)	31.7	52 (76)	12.0 (8.3)	1.6
50	146		161	12.0	4.8
51	73 (97)	24.8	68 (90)	8.9 (6.6)	1.5
52	94		47	11.6	3.3
53	134		114	11.6	3.3
54	80		62	15.2	2.4
55	56		30	13.0	1.0
56	64 (77)	17	68 (82)	10.2 (8.5)	1.8
57	66 (93)	29	41 (57)	10.8 (7.7)	1.1
58	85		48	17.9	2.1
59	92		42	8.2	0.9
60	81		49	11.9	1.5
61	89 (98)	8.7	55 (60)	12.5 (11.5)	1.7
62	33 (129)	74	45 (163)	29.4 (7.5)	3.1
63	105		54	10.8	1.5
64	98		57	12.0	1.7
65	103		36	6.7	0.6
66					
67	75 (88)	14.2	85 (99)	13.7 (11.8)	2.9

%EAR, % Estimated average requirement; suppl, nutritional supplement

Figures in brackets represent the value when the energy from the nutritional supplement is included

Table 5.2.4 Baseline energy and protein intakes from food in the 35 children with 'normal' renal function who completed a food diary

Patient number	Energy (%EAR)	Energy (kcal/kg)	Protein (% E)	Protein (g/kg)
68	92	63	13.4	2.1
69				
70	110	45	10.4	1.2
71				
72	133	67	13.8	2.1
73	104	64	14.5	2.3
74				
75	65	35	12.2	1.1
76				
77				
78	108	77	11.3	2.2
79	93	85	19.2	4.1
80	102	74	11.1	2.1
81	120	122	11.6	3.5
82	98	36	14.8	1.3
83	107	102	12.3	3.2
84	122	81	13.9	2.8
85				
86				
87				
88	83	73	18.6	3.4
89	108	90	15.5	3.5
90	116	78	11.9	2.3
91	112	69	11.2	1.9
92	70	25	14.7	0.9
93	95	79	15.5	3.1
94				
95	120	46	12.7	1.4
96				
97				
98				
99	93	88	13.1	2.9
100				
101	114	69	13.4	2.3

Table 5.2.4 Baseline energy and protein intakes from food in the 35 children with 'normal' renal function who completed a food diary

Patient number	Energy (%EAR)	Energy (kcal/kg)	Protein (% E)	Protein (g/kg)
102				
103				
104	129	138	12.7	4.3
105	97	56	18.6	2.6
106	96	37	12.6	1.2
107	109	97	10.0	2.4
108	104	77	14.6	2.8
109				
110				
111				
112	70	46	12.1	1.4
113	145	37	12.0	1.1
114				
115	80	61	11.5	1.7
116				
117				
118	105	84	14.1	3.0
119				
120				
121	112	76	13.2	2.5
122	98	56	14.4	2.0
123	97	61	10.9	1.7
124	112	94	12.4	2.9
125	88	69	14.4	2.5

%EAR, % Estimated average requirement; E, energy;

NB/. Nutritional supplements were not taken by any of the 58 children

Table 5.2.6 Baseline fat and carbohydrate intakes from food and nutritional supplements in the 23 children with mild CRI who completed a food diary

Patient number	Total fat (% total E)	SFA (% total energy)	PUFA (% total energy)	Total CHO (% total E)	Sugar (% total E)
1	39	17.2	4.4	50	22.4
2					
3					
4	28	12.0	4.3	60	38.0
5	41	19.6	3.8	48	25.2
6	36	17.6	3.8	53	32.9
7	29	9.3	4.2	61	35.8
8					
9	34	14.4	5.2	56	27.0
10	37	18.7	4.4	46	9.5
11	33	13.7	1.9	54	31.0
12					
13	33	15.1	2.6	64	28.0
14	33	11.4	6.5	56	29.3
15	44	16.3	5.5	47	24.2
16	38	19.5	3.0	52	28.1
17	32	11.5	3.4	54	20.9
18	36	14.4	7.5	51	25.0
19	32	10.6	4.9	56	20.0
20	38	14.2	5.8	49	21.1
21	37	15.5	3.7	49	17.7
22	38	15.4	5.8	45	16.1
23	39	18.6	5.1	48	12.1
24	25	11.8	3.9	64	24.1
25	43	16.7	8.0	44	15.4
26	37	15.3	5.0	51	26.4
27	30	13.7	2.7	48	27.2

E, energy intake; SFA, saturated fat; PUFA, poly-unsaturated fat; CHO, carbohydrate

Table 5.2.7 Baseline fat and carbohydrate intakes from food and nutritional supplements in the 19 children with moderate CRI who completed a food diary

Patient number	Total fat (% total E)	SFA (% total energy)	PUFA (% total energy)	Total CHO (% total E)	Sugar (% total E)
28	40	16.4	5.5	43	20.8
29	39	13.8	3.6	53	25.2
30	38	12.1	7.5	50	27.4
31	43	15.6	5.8	43	14.7
32					
33					
34	38	16.9	3.4	50	27.8
35	32	12.9	4.7	55	30.7
36	44	21.7	5.0	42	16.1
37	21	10.0	1.8	71	33.9
38	35	14.6	5.8	54	24.8
39	38	17.3	3.4	53	33.2
40	34	12.2	5.5	47	17.1
41	34	13.1	4.3	52	20.0
42	35	11.4	3.0	64	40.6
43	45	15.7	9.7	41	14.7
44	21	6.5	3.9	70	17.7
45	41	15.4	5.8	43	18.5
46	25	10.4	6.8	64	42.8
47	34	12.6	5.0	54	26.8
48	35	17.9	10.5	53	28.2

E, energy intake; SFA, saturated fat; PUFA, poly-unsaturated fat; CHO, carbohydrate

Table 5.2.8 Baseline fat and carbohydrate intakes from food and nutritional supplements in the 18 children with severe CRI who completed a food diary

Patient number	Total fat (% total E)	SFA (% total energy)	PUFA (% total energy)	Total CHO (% total E)	Sugar (% total E)
49	27	9.2	3.7	63	21.1
50	38	11.3	5.3	49	17.4
51	31	7.1	9.7	60	15.0
52	34	13.4	3.3	55	38.1
53	34	13.4	6.6	54	30
54	35	14.8	2.4	50	22.5
55	29	9.7	5.3	58	19.2
56	33	14.6	4.9	57	16.5
57	29	7.1	6.5	61	13.3
58	36	14.0	6.0	40	12.9
59	27	8.9	4.1	65	30.7
60	36	10.2	7.7	53	19.8
61	34	11.8	7.9	54	20.1
62	43	6.4	1.1	46	9.3
63	43	16.8	6.3	46	17.6
64	40	13.9	6.1	48	22.9
65	34	11.1	6.2	59	33.6
66					
67	25	10.1	2.5	63	22.3

E, energy intake; SFA, saturated fat; PUFA, poly-unsaturated fat; CHO, carbohydrate

Table 5.2.9 Baseline fat and carbohydrate intakes from food in the 35 children with 'normal' renal function who completed a food diary

Patient number	Total fat (% total E)	SFA (% total energy)	PUFA (% total energy)	Total CHO (% total E)	Sugar (% total E)
68	40	17.0	2.5	47	25.8
69					
70	35	12.9	9.6	52	25.5
71					
72	33	14.2	3.6	53	28.4
73	33	10.5	11.4	53	22.8
74					
75	37	10.0	9.2	51	28.0
76					
77					
78	38	15.2	4.7	50	24.1
79	34	14.9	2.8	47	27.9
80	39	14.1	3.8	50	18.4
81	41	20.6	3.7	47	23.9
82	45	14.3	7.2	41	14.6
83	32	14.3	4.1	56	31.3
84	43	20.6	4.9	43	22.1
85					
86					
87					
88	34	14.2	5.2	48	28.1
89	38	14.3	4.9	47	19.7
90	37	13.3	4.9	51	25.0
91	35	14.7	5.0	53	26.4
92	41.3	12.6	11.1	44	26.3
93	36.2	13.2	6.3	48	18.0
94					
95	40	16.6	4.7	47	21.9
96					
97					
98					
99	35	14.3	6.1	52	33.8
100					
101	41	16.7	6.1	46	22.6

Table 5.2.9 Baseline fat and carbohydrate intakes from food in the 35 children with 'normal' renal function who completed a food diary

Patient number	Total fat (% total E)	SFA (% total energy)	PUFA (% total energy)	Total CHO (% total E)	Sugar (% total E)
102					
103					
104	37	16.8	3.2	51	24.8
105	34	12.3	5.7	48	17.9
106	37	10.4	7.0	51	18.0
107	32	12.3	4.6	59	36.0
108	35	15.4	5.6	51	27.8
109					
110					
111					
112	42	14.7	11.3	47	16.0
113	33	9.5	7.8	55	29.1
114					
115	40	12.7	7.9	48	21.1
116					
117					
118	35	17.2	3.5	51	26.7
119					
120					
121	30	9.1	4.2	57	27.3
122	34	14.7	4.1	52	22.8
123	37	15.7	4.7	52	30.1
124	37	14.5	5.4	51	26.5
125	37	19.1	3.0	49	27.5

E, energy intake; SFA, saturated fat; PUFA, poly-unsaturated fat; CHO, carbohydrate

Table 5.2.11 Baseline sodium and vitamin & mineral intakes from food (inclusive of nutritional supplements, micronutrients excluded) in the 23 children with mild CRI who completed a food diary

Patient number	Sodium (mmol)	Calcium (% RNI)	Phosphate (mg)	Iron (% RNI)	Folate (% RNI)	Vitamin C (% RNI)
1	60	171	609	79	238	71
2						
3						
4	84	257	1134	120	230	206
5	124	132	861	140	176	189
6	68	260	920	80	215	301
7	95	104	539	94	176	54
8						
9	116	119	869	50	59	122
10	163	121	1182	53	75	76
11	78	102	989	91	94	107
12						
13	81	178	855	140	298	293
14	125	195	1278	133	137	494
15	84	77	769	41	62	107
16	108	158	820	122	144	30
17	105	113	1321	91	114	117
18	119	178	1296	127	147	271
19	147	114	1062	62	148	84
20	134	89	1220	96	95	496
21	122	72	1064	71	81	58
22	87	190	1160	81	116	188
23	103	86	786	50	88	135
24	38	200	786	86	146	113
25	132	168	921	106	114	69
26	106	129	1115	99	88	198
27	97	285	1614	171	300	204

RNI, Reference nutrient intake

**Table 5.2.12 Baseline sodium and vitamin & mineral intakes from food
(inclusive of nutritional supplements, micronutrients excluded) in
the 19 children with moderate CRI who completed a food diary**

Patient number	Sodium (mmol)	Calcium (% RNI)	Phosphate (mg)	Iron (% RNI)	Folate (% RNI)	Vitamin C (% RNI)
28	100	72	937	56	68	46
29	97	101	709	108	82	17
30	75	127	1316	57	73	175
31	86	230	1193	150	210	224
32						
33						
34	64	146	632	68	115	179
35	124	120	1218	112	188	634
36	94	307	1176	85	703	241
37	44	160	612	38	224	540
38	163	190	1124	104	178	240
39	89	88	820	46	53	139
40	147	117	1220	136	153	284
41	127	147	917	93	128	363
42	113	89	1282	94	98	108
43	135	112	1401	87	101	147
44	57	34	214	51	26	158
45	117	117	980	98	128	99
46	55	50	581	26	45	28
47	82	210	1359	186	174	300
48	149	191	983	148	201	349

RNI, Reference nutrient intake

Table 5.2.13 Baseline sodium and vitamin & mineral intakes from food (inclusive of nutritional supplements, micronutrients excluded) in the 18 children with severe CRI who completed a food diary

Patient number	Sodium (mmol)	Calcium (% RNI)	Phosphate (mg)	Iron (% RNI)	Folate (% RNI)	Vitamin C (% RNI)
49	39	49	473	44	54	164
50	137	211	1371	167	248	245
51	119	75	730	87	69	128
52	92	65	853	48	59	78
53	168	241	1378	137	124	154
54	113	50	837	85	105	165
55	114	68	970	107	81	104
56	67	80	563	55	81	251
57	76	72	616	33	37	78
58	124	71	1101	62	104	131
59	117	99	576	98	138	201
60	90	70	873	44	58	59
61	153	73	1123	104	69	172
62	61	300	791	179	916	432
63	155	80	1054	70	133	110
64	157	82	997	72	73	248
65	113	39	669	39	46	209
66						
67	93	123	600	99	244	346

RNI, Reference nutrient intake

Table 5.2.14 Baseline sodium and vitamin & mineral intakes from food (micronutrients excluded) in the 35 children with ‘normal’ renal function who completed a food diary

Patient number	Sodium (mmol)	Calcium (% RNI)	Phosphate (mg)	Iron (% RNI)	Folate (% RNI)	Vitamin C (% RNI)
68	80	162	878	82	141	242
69						
70	129	103	1030	55	78	207
71						
72	117	268	1533	113	192	217
73	95	108	819	164	190	87
74						
75	71	44	865	68	69	141
76						
77						
78	117	93	1177	85	111	182
79	62	208	861	75	215	160
80	102	159	882	179	217	243
81	109	197	1027	119	98	103
82	130	128	1215	81	115	135
83	102	181	1138	108	120	209
84	111	248	1326	89	152	127
85						
86						
87						
88	126	164	1205	87	95	284
89	83	157	851	88	167	189
90	135	108	939	99	102	254
91	122	187	1194	114	159	107
92	93	54	1169	69	111	198
93	82	137	928	128	177	106
94						
95	152	164	964	137	80	19
96						
97						
98						
99	77	161	855	112	197	503
100						
101	118	204	1240	106	93	350

Table 5.2.14 Baseline sodium and vitamin & mineral intakes from food (micronutrients excluded) in the 35 children with 'normal' renal function who completed a food diary

Patient number	Sodium (mmol)	Calcium (% RNI)	Phosphate (mg)	Iron (% RNI)	Folate (% RNI)	Vitamin C (% RNI)
102						
103						
104	113	260	1504	260	214	377
105	138	119	1213	136	179	369
106	127	93	934	56	70	70
107	91	198	986	125	175	363
108	104	212	1369	139	146	342
109						
110						
111						
112	60	101	990	68	60	71
113	170	133	1447	92	178	262
114						
115	132	89	871	105	138	296
116						
117						
118	74	214	832	82	218	173
119						
120						
121	131	150	1267	150	234	327
122	104	145	835	126	173	202
123	84	139	851	78	132	704
124	127	254	1426	170	192	277
125	75	196	914	91	175	212

RNI, Reference nutrient intake

Table 5.3.1 Baseline plasma concentrations of relevant electrolytes and metabolites in all 27 children with mild CRI

Patient number	Sodium (mmol/l)	Potassium (mmol/l)	Bicarbonate (mmol/l)	Urea (mmol/l)	Creatinine (μmol/l)
1	138	4.3	28	6.3	52
2	133	3.5	22	5.0	83
3	141	4.2	28	5.8	91
4	138	4.6	19	9.5	61
5	138	4.4	19	4.5	43
6	141	4.1	19	5.7	46
7	137	3.7	24	6.2	57
8	140	3.8	20	5.1	54
9	139	4.2	25	6.2	93
10	138	5.2	24	9.9	102
11	137	4.0	22	5.6	55
12	143	3.7	23	4.7	80
13	131	3.6	23	4.4	50
14	139	4.1	26	7.3	98
15	141	4.2	23	3.7	69
16	137	4.5	24	7.3	59
17	137	3.7	21	4.9	61
18	137	4.0	23	8.9	58
19	138	4.6	18	6.1	79
20	138	3.7	24	6.6	74
21	138	4.6		4.6	115
22	142	4.3	21	6.0	71
23	141	3.6	25	3.3	79
24	135		15	8.2	53
25	140	3.9		5.2	66
26	137	3.7	24	4.5	57
27	138	4.6	20	7.1	83

Table 5.3.2 Baseline plasma concentrations of relevant electrolytes and metabolites in all 21 children with moderate CRI

Patient number	Sodium (mmol/l)	Potassium (mmol/l)	Bicarbonate (mmol/l)	Urea (mmol/l)	Creatinine (μmol/l)
28	138	3.9	23	10.3	86
29	141	3.7	16	13.1	160
30	139	4.4	23	7.3	112
31	138	3.7	25	7.9	93
32	143	4.4	24	8.5	198
33	136	4.4	18	7.2	64
34	141	4.0	23	6.8	61
35	141	3.6	20	11.7	134
36	137	4.1	19	12.8	50
37	135	3.5	21	8.4	83
38	139	4.9	21	5.1	104
39	140	4.4	23	5.1	89
40	139	3.5	27	11.8	114
41	138	4.1	23	5.8	109
42	138	3.9	24	10.2	153
43	138	4.8	21	10.1	142
44	138	4.5	20	4.7	107
45	140	3.5	22	12.6	124
46	138	4.6	25	6.3	110
47	138	4.4	26	9.0	88
48	140	4.2	24	8.7	91

Table 5.3.3 Baseline plasma concentrations of relevant electrolytes and metabolites in all 19 children with severe CRI

Patient number	Sodium (mmol/l)	Potassium (mmol/l)	Bicarbonate (mmol/l)	Urea (mmol/l)	Creatinine (μmol/l)
49	140	4.0	19	12.8	146
50	136	4.4	15	16.0	140
51	137	4.8	13	17.0	133
52	141	5.1	22	13.5	212
53	140		20	19.9	189
54	141	4.7	23	14.4	202
55	140	4.7	17	19.6	464
56	141	3.8	17	17.0	301
57	136	5.0	19	11.6	351
58	142	3.8	24	10.1	152
59	139	4.9	24	17.1	289
60	142	4.9	20	18.3	285
61	138	4.0	20	18.1	345
62	141	3.1	23	19.1	276
63	140	4.5	24	14.5	197
64	138	3.3	19	17.9	360
65	141	4.8	27	16.0	155
66	139	4.2	16	17.8	194
67	137	3.6	18	17.4	140

Table 5.3.4 Baseline plasma concentrations of relevant electrolytes and metabolites in all 58 children with 'normal' renal function

Patient number	Sodium (mmol/l)	Potassium (mmol/l)	Bicarbonate (mmol/l)	Urea (mmol/l)	Creatinine (μmol/l)
68	138	4.3	23	4.5	47
69	137	4.1	17	4.7	42
70	138	3.7	27	3.4	72
71	138	4.1	17	4.1	36
72	141	4.2	23	4.9	48
73	138	3.4	25	4.7	52
74	132	3.5	21	7.9	43
75	142	4.2	29	4.3	70
76	139	3.7	24	5.0	46
77	135	3.7	22	5.7	47
78	141	4.2	27	4.7	85
79	137	3.9	19	8.4	38
80	140	4.0	23	4.8	55
81	134	4.3	19	5.6	34
82	141	3.7	23	4.5	63
83	134	4.1	21	9.0	47
84	141	4.1	22	3.9	49
85	138	4.2	23	5.1	57
86	140	3.8	25	6.6	58
87	140	3.7	24	5.3	48
88	140	4.4	19	5.7	56
89	139	4.3	21	8.7	39
90	139	4.0	24	4.6	55
91	141	3.6	19	5.3	66
92	143	4.4	26	5.0	115
93	138	4.0	19	4.4	47
94	133	3.9	30	5.2	43
95	140	3.6	25	6.4	66
96	136	3.7	18	6.3	61
97	141	3.7	22	6.2	47
98	136	4.0	22	4.5	46
99	136	3.8	24	4.0	54
100	142	3.9	24	5.0	37
101	142	4.2	23	4.6	50

Table 5.3.4 Baseline plasma concentrations of relevant electrolytes and metabolites in all 58 children with 'normal' renal function

Patient number	Sodium (mmol/l)	Potassium (mmol/l)	Bicarbonate (mmol/l)	Urea (mmol/l)	Creatinine (μmol/l)
102	135	3.1	25	5.8	68
103	139	3.6	26	4.6	58
104	136	4.1	23	4.6	47
105	138	3.6	26	6.9	48
106	143	4.4	27	3.3	57
107	137	3.5	22	4.1	48
108	142	4.2	22	6.0	53
109	140	3.7	22	4.7	46
110	137	3.7	22	3.4	42
111	140	3.9	23	3.4	59
112	137	4.1	22	3.9	51
113	140	4.3	23	5.7	72
114	140	3.9	22	3.9	53
115	137	4.0	25	5.5	46
116	140	3.7	20	6.2	37
117	137	3.9	21	3.3	30
118	137	5.4		4.2	31
119	138	4.0	22	4.6	43
120	139	4.5	18	4.7	76
121	139	3.7	28	5.7	82
122	137	3.7	22	4.4	59
123	140	4.3	24	6.8	65
124	140	3.9	22	5.4	66
125	139	4.1	25	6.1	55

Table 5.3.6 Baseline plasma concentrations of variables relating to bone activity in all 27 children with mild CRI

Patient number	Calcium (mmol/l)	Phosphate (mmol/l)	Alkaline Phosphatase (mmol/l)	PTH (ng/l)
1	2.37	1.57	432	39
2	2.57	1.26	190	35
3	2.52	1.08	656	13
4	2.47	1.58	519	22
5	2.46	1.43	486	17
6	2.42	1.42	428	
7	2.46	1.35	411	19
8	2.31	1.32	655	44
9	2.39	1.71	453	26
10	2.50	1.33	403	13
11	2.35	1.51	641	
12	2.45	0.98	141	10
13	2.42	1.36	568	21
14	2.46	1.16	554	33
15	2.39	1.38	862	8
16	2.48	1.71	538	37
17	2.42	1.32	526	26
18	2.48	1.32	445	2
19	2.35	1.49	345	28
20	2.55	1.36	484	8
21		1.24	596	49
22	2.56	1.15	589	13
23	2.78	1.19	269	9
24	2.51	1.74	732	18
25	2.51	1.23	451	29
26	2.36	1.21	695	13
27	2.4	1.36	543	34

Table 5.3.7 Baseline plasma concentrations of variables relating to bone activity in all 21 children with moderate CRI

Patient number	Calcium (mmol/l)	Phosphate (mmol/l)	Alkaline Phosphatase (mmol/l)	PTH (ng/l)
28	2.45	1.48	384	32
29	2.32	1.41	504	57
30	2.34	1.35	202	36
31	2.54	1.37	719	40
32	2.41	0.97	323	84
33	2.83	1.53	536	
34	2.58	1.41	413	22
35	2.37	1.46	344	70
36	2.42	1.61	352	59
37	2.44	1.59	565	145
38	2.45	1.0	679	32
39	2.36	1.37	699	37
40	2.48	1.46	598	75
41	2.46	1.55	795	57
42	2.4	1.2	854	66
43	2.43	1.5	477	280
44	2.41	1.33	514	43
45	2.37	1.27	579	71
46	2.32	1.41	678	65
47	2.47	1.53	589	46
48	2.53	1.45	463	46

Table 5.3.8 Baseline plasma concentrations of variables relating to bone activity in all 19 children with severe CRI

Patient number	Calcium (mmol/l)	Phosphate (mmol/l)	Alkaline Phosphatase (mmol/l)	PTH (ng/l)
49	2.23	1.40	313	50
50	2.23	1.74	1407	98
51	2.23	1.76	338	64
52	2.24	1.69	434	127
53	2.25	1.44	670	170
54	2.38	1.4	410	
55	2.37	1.97	789	639
56	2.48	1.6	264	18
57	2.46	1.45	1076	164
58	2.44	1.34	681	67
59	2.18	1.35	1116	426
60	2.35	1.5	725	100
61	2.54	1.59	445	59
62	2.56	1.58	620	333
63	2.45	1.55	436	23
64	2.41	1.36	764	234
65	2.45	1.5	310	157
66	2.38	1.4	690	52
67	2.64	1.47	403	64

Table 5.3.9 Baseline plasma concentrations of variables relating to bone activity in all 58 children with 'normal' renal function

Patient number	Calcium (mmol/l)	Phosphate (mmol/l)	Alkaline Phosphatase (mmol/l)	PTH (ng/l)
68	2.39	1.50	476	18
69	2.35	1.40	432	16
70	2.41	1.0	258	11
71	2.44	1.47	397	13
72	2.42	1.50	524	28
73	2.47	1.30	504	18
74	2.35	1.43	591	
75	2.33	1.37	453	38
76	2.29	1.45	381	
77	2.48	1.26	542	10
78	2.59	1.43	489	21
79	2.44	1.44	402	11
80	2.36	1.47	458	25
81	2.49	1.47	459	32
82	2.39	0.8	91	18
83	2.42	1.3	457	12
84	2.29	1.58	484	29
85	2.32	1.34	550	34
86	2.34	1.2	584	13
87	2.45	1.32	506	3
88	2.31	1.61	763	10
89	2.51	1.43	506	8
90	2.38	1.4	440	7
91	2.41	1.43	533	20
92	2.5	1.21	290	12
93	2.43	1.5	2321	31
94	2.48	1.42	439	6
95	2.41	1.23	508	19
96	2.35	1.07	450	14
97	2.43	1.47	472	30
98	2.44	1.22	452	36
99	2.51	1.22	730	11
100	2.47	1.08	567	30
101	2.62	1.37	793	17

Table 5.3.9 Baseline plasma concentrations of variables relating to bone activity in all 58 children with ‘normal’ renal function

Patient number	Calcium (mmol/l)	Phosphate (mmol/l)	Alkaline Phosphatase (mmol/l)	PTH (ng/l)
102	2.35	1.05	834	28
103	2.34	1.47	408	23
104	2.44	1.56	605	16
105	2.48	1.49	526	17
106	2.7	1.10	458	19
107	2.35	1.61	404	32
108	2.59	1.49	576	12
109	2.50	1.28	577	15
110	2.58	1.33	602	18
111	2.38	1.25	593	15
112	2.57	1.22	575	24
113	2.37	1.09	244	32
114	2.56	1.53	645	27
115	2.43	1.38	327	11
116	2.44	1.55	653	12
117	2.49	1.52	442	33
118	2.32	1.32	562	13
119	2.55	1.37	573	11
120	2.46	1.35	622	56
121	2.44	1.27	692	16
122	2.31	1.51	737	17
123	2.48	1.48	754	29
124	2.32	1.5	486	27
125	2.52	1.6	408	31

Table 5.3.11 Baseline plasma markers of protein status in all 27 children with mild CRI

Patient number	Albumin (g/l) (BCP method)	Albumin (g/l) (ITM method)	Prealbumin (g/l)
1	38	41	0.17
2	41	45	0.23
3	35	39	0.18
4	40	42	0.17
5	40	44	0.12
6	39	42	0.09
7	38	37	0.13
8	42	42	0.18
9	38	36	0.07
10	36	41	0.08
11	43		
12	39	37	0.18
13	38	35	0.09
14	35	37	0.16
15	42	39	0.17
16	40	40	0.14
17	41	43	0.18
18	36	32	0.16
19	39	35	0.11
20	41	42	0.21
21	37	42	0.21
22	37	38	0.14
23	48	40	0.19
24	40	33	0.15
25	43	36	0.16
26	41	36	0.18
27	41	40	0.25

BCP, bromocresol purple; ITM, immunoturbidometric

Table 5.3.12 Baseline plasma markers of protein status in all 21 children with moderate CRI

Patient number	Albumin (g/l) (BCP method)	Albumin (g/l) (ITM method)	Prealbumin (g/l)
28	34	44	0.2
29	34	35	0.07
30	40	41	0.11
31	39	42	0.13
32	38	41	0.1
33	35		
34	39	40	0.14
35	35		
36	28		
37	36	38	0.27
38	31	30	0.14
39	39	32	0.13
40	39	33	0.25
41	40	39	0.19
42	40	35	0.32
43	38	36	0.2
44	41	29	0.1
45	42	35	0.18
46	32		
47	41	40	0.23
48	43	44	0.17

BCP, bromocresol purple; ITM, immunoturbidometric

Table 5.3.13 Baseline plasma markers of protein status in all 19 children with severe CRI

Patient number	Albumin (g/l) (BCP method)	Albumin (g/l) (ITM method)	Prealbumin (g/l)
49	34	36	0.13
50	32	37	0.13
51	34	43	0.17
52	36		
53	39	42	0.19
54	37		
55	33	33	0.07
56	39	38	0.06
57	37	37	0.17
58	42	41	0.19
59	33	33	0.21
60	35	39	0.22
61	41	43	0.09
62	37	35	0.20
63	34	38	0.28
64	37	35	0.26
65	39	39	0.26
66	36	25	0.15
67	36	33	0.17

BCP, bromocresol purple; ITM, immunoturbidometric

Table 5.3.14 Baseline plasma markers of protein status in all 58 children with 'normal' renal function

Patient number	Albumin (g/l) (BCP method)	Albumin (g/l) (ITM method)	Prealbumin (g/l)
68	31	30	0.13
69	36	38	0.12
70	38	39	0.11
71	38	41	0.10
72	38	42	0.13
73	41	40	0.09
74	41		
75	38	41	0.21
76	38		
77	45	47	0.07
78	38	40	0.06
79	41	40	0.10
80	40	37	0.05
81	39	38	0.08
82	37	41	0.10
83	43	46	0.05
84	40	42	0.08
85	36	34	0.13
86	37	37	0.07
87	39	39	0.12
88	40	41	.06
89	37	36	0.13
90	40	40	0.17
91	39	37	0.07
92	41	43	0.07
93	43	41	0.15
94	37	34	0.11
95	40	36	0.13
96	37	35	0.12
97	37	34	0.16
98	40	39	0.18
99	40	40	0.13
100	38	37	0.17
101	41	36	0.18

Table 5.3.14 Baseline plasma markers of protein status in all 58 children with ‘normal’ renal function

Patient number	Albumin (g/l) (BCP method)	Albumin (g/l) (ITM method)	Prealbumin (g/l)
102	39	35	0.24
103	40	41	0.19
104	36	31	0.11
105	40	45	0.16
106	48	33	0.12
107	39	35	0.18
108	41	34	0.16
109	45	41	0.15
110	45		0.17
111	32	33	0.21
112	37	37	0.17
113	40	39	0.15
114	46	43	0.20
115	38	33	0.11
116	44	29	0.10
117	39	42	0.12
118	42		0.02
119	41	45	0.17
120	42	32	0.18
121	48	44	0.17
122	39	40	0.14
123	40	30	0.05
124	39	42	0.16
125	39	33	0.17

BCP, bromocresol purple; ITM, immunoturbidometric

Table 5.3.16 Baseline serum lipid concentrations in all 27 children with mild CRI

Patient number	Total cholesterol (mmol/l)	HDL cholesterol (mmol/l)	Total cholesterol: HDL ratio	Triglycerides (mmol/l)
1	7.0	2.0	3.5	0.8
2	3.6	1.6	2.3	0.6
3	5.6	1.0	5.6	2.2
4	4.9	1.7	2.9	0.4
5	5.9	1.8	3.3	0.8
6	4.8	1.4	3.4	1.3
7	3.7	0.7	5.3	2.5
8		2.1		0.4
9	4.4	1.5	2.9	1.6
10		1.2		
11				
12	3.0	1.1	2.7	1.4
13	4.1			3.3
14	6.1	2.1	2.9	0.9
15	4.7	1.7	2.8	0.9
16	3.8	1.1	3.5	1.0
17	4.2	1.6	2.6	0.9
18	5.2	1.2	4.3	3.2
19	4.7	1.2	3.9	1.4
20	4.1	1.5	2.7	1.2
21				
22	4.3	1.0	4.3	1.0
23	6.4	1.6	4.0	1.2
24	8.3	1.8	4.6	0.9
25	4.5	1.2	3.8	0.9
26	4.7	1.2	3.9	0.9
27	4.3	1.0	4.3	0.7

HDL, high density lipoprotein

Table 5.3.17 Baseline serum lipid concentrations in all 21 children with moderate CRI

Patient number	Total cholesterol (mmol/l)	HDL cholesterol (mmol/l)	Total cholesterol: HDL ratio	Triglycerides (mmol/l)
28	3.1	1.1	2.8	1.0
29	5.0	1.7	2.9	0.9
30	4.3	1.6	2.7	0.7
31	4.8	1.0	4.8	1.9
32	4.7	1.3	3.6	1.2
33	6.2			
34	6.6	1.6	4.1	1.9
35	5.5	1.6	3.4	1.6
36	6.0	2.1	2.9	0.7
37	6.3	1.7	3.7	1.6
38	4.3	1.7	2.5	1.3
39	5.2	1.5	3.5	1.3
40	6.8	1.7	4.0	1.2
41	5.9	1.7	3.5	1.5
42	6.3	1.0	6.3	2.4
43	4.6	1.3	3.5	2.1
44	4.8	1.2	4.0	0.9
45	5.7	1.4	4.1	1.4
46	5.2	1.2	4.3	1.5
47	4.3	1.8	2.4	1.3
48	5.3	1.3	4.1	0.9

HDL, high density lipoprotein

Table 5.3.18 Baseline serum lipid concentrations in all 19 children with severe CRI

Patient number	Total cholesterol (mmol/l)	HDL cholesterol (mmol/l)	Total cholesterol: HDL ratio	Triglycerides (mmol/l)
49	4.0	0.8	5.0	1.4
50	5.1	0.9	5.7	3.2
51	4.2	1.0	4.2	1.1
52	5.6	1.1	5.1	1.6
53	4.2	1.4	3.0	1.2
54	4.5			
55	7.8	1.2	6.5	2.8
56		1.4		1.3
57	5.3	1.1	4.8	3.3
58	5.6	2.1	2.7	0.9
59	4.2	0.9	4.7	2.3
60	5.0	2.0	2.5	0.6
61	4.8	1.9	2.5	1.4
62	4.5	2.1	2.1	4.5
63	5.5	1.2	5.6	1.8
64	5.0	1.2	4.2	2.0
65	5.7	1.4	4.1	0.5
66	6.5	1.5	4.3	1.5
67	5.0	1.3	3.9	2.6

HDL, high density lipoprotein

Table 5.3.19 Baseline serum lipid concentrations in all 58 children with 'normal' renal function

Patient number	Total cholesterol (mmol/l)	HDL cholesterol (mmol/l)	Total cholesterol: HDL ratio	Triglycerides (mmol/l)
68	7.8	1.1	7.1	1.8
69	3.7	1.3	2.9	1.9
70	4.0	1.7	2.4	0.7
71	4.5	1.4	3.2	0.8
72	4.0	1.7	2.4	0.5
73	4.6	1.5	3.1	0.9
74	3.5			
75	4.3	1.7	2.5	0.5
76	5.2			
77	4.4	1.4	3.1	0.6
78	5.4	0.8	6.8	3.7
79	3.0			1.0
80	4.7	1.8	2.6	1.1
81	4.8	1.7	2.8	0.8
82	5.0	2.2	2.3	0.7
83	3.4	1.3	2.6	0.3
84	2.7	1.8	1.5	0.2
85	4.0	1.0	4.0	0.9
86	4.0	0.9	4.4	0.9
87	4.6	1.3	3.5	0.7
88	5.3	1.9	2.8	0.7
89	3.7	0.8	4.6	1.6
90	4.5	1.5	3.0	0.9
91	4.2	1.6	2.6	0.9
92	4.4	1.4	3.1	1.4
93	3.4	0.9	3.8	1.6
94	3.2	1.0	3.2	1.0
95	4.6	1.7	2.7	0.6
96	3.1	1.1	2.8	0.6
97	4.7	2.2	2.1	1.0
98	4.7	1.5	3.1	1.4
99	5.2	1.3	4.0	1.5
100	5.5	1.4	3.9	0.9
101	4.5	1.7	2.7	1.2

Table 5.3.19 Baseline serum lipid concentrations in all 58 children with 'normal' renal function

Patient number	Total cholesterol (mmol/l)	HDL cholesterol (mmol/l)	Total cholesterol: HDL ratio	Triglycerides (mmol/l)
102	5.3	2.5	2.1	0.7
103	3.9	1.6	2.4	1.8
104	6.0	1.8	3.3	1.6
105	5.2	1.9	2.7	0.5
106	4.8	1.8	2.7	0.6
107	3.4	1.1	3.1	0.5
108	5.1	1.4	3.6	0.9
109	5.4	2.3	2.4	0.5
110	5.9	2.1	2.8	0.6
111	4.8	1.1	4.4	1.8
112	4.1	1.3	3.2	1.2
113	3.7	1.3	2.9	0.5
114	5.5	1.7	3.2	1.1
115	4.5	1.3	3.5	0.7
116	4.3	1.6	2.7	0.7
117	3.4	1.0	3.4	1.1
118				
119	4.8	1.3	3.7	1.7
120	6.5	2.1	3.1	0.7
121	3.9	1.4	2.8	0.8
122	4.6	1.4	3.3	0.6
123	6.3	1.1	5.7	1.3
124	4.8	1.5	3.2	1.4
125	4.4	0.9	4.9	1.2

HDL, high density lipoprotein

Table 5.3.21 Baseline plasma iron-related variables in all 27 children with mild CRI

Patient number	Haemoglobin (g/dl)	% Hypochromic cells	Ferritin (µg/l)
1	10.9		52
2	15.6	0.1	54
3	12.2	5.5	19
4	11.3	5.0	
5	12.5	1.2	18
6	12.2	3.3	
7	11.2	2.3	19
8	14.4	0.5	18
9			
10	14.8	2.9	35
11	14.2	0.7	
12	11.6	1.2	41
13	11.7	0.3	22
14	13	1.0	22
15			9
16	12.8	0.2	26
17	13.8	0.1	40
18	13.3		54
19	10.4	31	11
20	12.7	0.7	34
21	13.0	2.9	13
22	12.5	4.4	29
23	15	2.4	25
24	13.7	1.2	18
25	13.4	0.8	29
26	12.5	0.3	17
27	12.2	2.1	18

Table 5.3.22 Baseline plasma iron-related variables in all 21 children with moderate CRI

Patient number	Haemoglobin (g/dl)	% Hypochromic cells	Ferritin (µg/l)
28	14.5	0.2	38
29	12.6	1.8	24
30	12.7	6.0	14
31	13		18
32	15.8	1.7	41
33	14.1	0.8	
34			
35	11.9	0.7	76
36	11.1	1.9	26
37	12.4	1.9	85
38	13	1.8	41
39	12.3	1.1	31
40	15.3	0.2	38
41	12.0	0.1	19
42	13.0	1.8	29
43	10.5	10.0	84
44	11.4		22
45	14.0	0.7	
46	12.0	0.4	12
47	14.9	0.3	
48			31

Table 5.3.23 Baseline plasma iron-related variables in all 19 children with severe CRI

Patient number	Haemoglobin (g/dl)	% Hypochromic cells	Ferritin (μg/l)
49	8.8	0.3	159
50	12.3	1.2	13
51	9.1	0.3	59
52	10.5	0.5	
53	10.8	3.0	40
54	11.4	2.3	
55	9.2	1.4	13
56			47
57	11.5	8.3	149
58	12.4		32
59	8.6	4.0	59
60	12.8	3.3	33
61	12.1	0.7	29
62	10.2	1.3	61
63	11.4	3.5	13
64	12.0	0.5	133
65	10.9	0.9	20
66	12.3	0.3	26
67	11.5	1.7	106

Table 5.3.24 Baseline plasma iron-related variables in all 58 children with 'normal' renal function

Patient number	Haemoglobin (g/dl)	% Hypochromic cells	Ferritin ($\mu\text{g/l}$)
68	12.4	0.5	14
69	11.3	1.0	32
70			33
71	12.2	0.2	17
72	12.3	0.7	54
73	13.4	0.6	12
74	12.6	3.2	27
75	12.6	9.1	46
76	11.2	0.2	
77	12.9	0.1	134
78	12.9		43
79			
80	11.2	3.9	19
81	11.4	0.7	37
82	12.6		28
83	11.1	5.5	24
84	12.8	1.0	11
85	12.6	0.8	18
86	12.1	0.6	22
87	12.2		17
88	14.2	0.3	40
89	11.2	5.1	32
90	11.9	0.4	23
91	12.9	1.0	9
92	14.5	0.5	84
93	10.9	1.0	8
94	11.4	1.0	69
95	12.0	1.2	22
96	10.2	0.4	37
97	12.2	0.2	14
98	11.5	2.3	14
99	12.8		24
100	11.8	0.9	52
101	12.8	0.5	21

Table 5.3.24 Baseline plasma iron-related variables in all 58 children with 'normal' renal function

Patient number	Haemoglobin (g/dl)	% Hypochromic cells	Ferritin (μg/l)
102	12.4	4.6	16
103	12.3	0.7	31
104	12.9	1.3	13
105	14.8	0.2	40
106	14.3	1.4	35
107	12.5	0.4	25
108	14.2	0.7	64
109	12.3	0.6	28
110	12.8	0.5	33
111	14.2	1.6	
112	10.9	17.4	14
113	12.2		25
114	13.8	0.2	25
115			58
116	12.0	0.4	46
117	11.6		20
118	12.2	5.4	
119	11.9	0.5	46
120	14.4	0.2	28
121	13.4	0.9	23
122	13.1	0.9	28
123	14	0.4	21
124	13.5	0.6	18
125	12.8	1.6	12

Appendix 3

Chapter 6

Longitudinal results and discussion of individuals

Figure 6.2.1.1 Individual height standard deviation scores over the 2 year period between groups

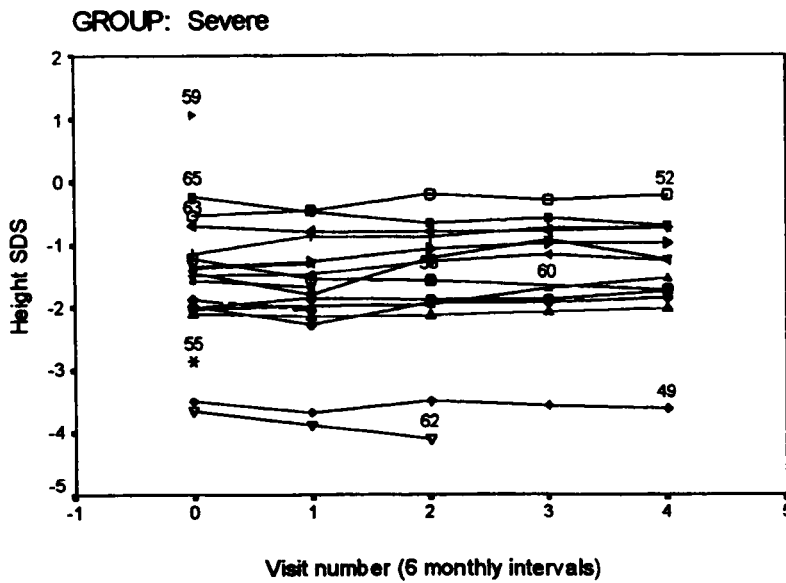
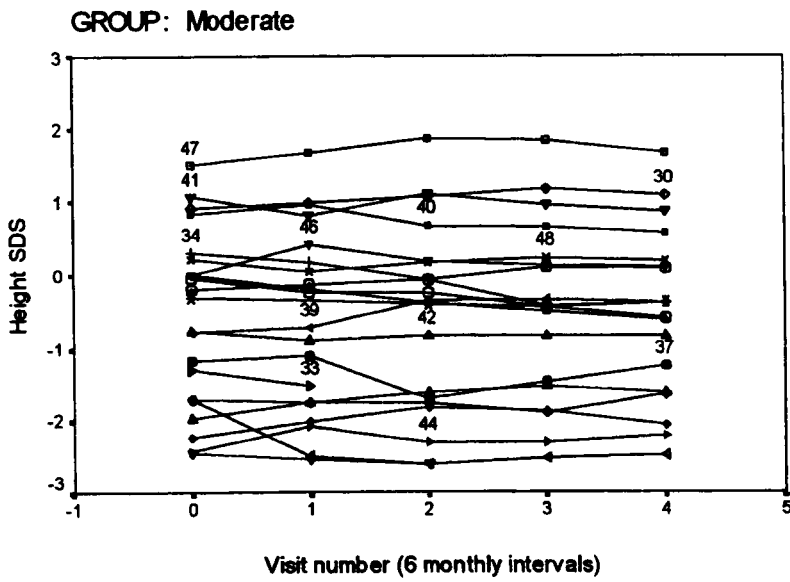
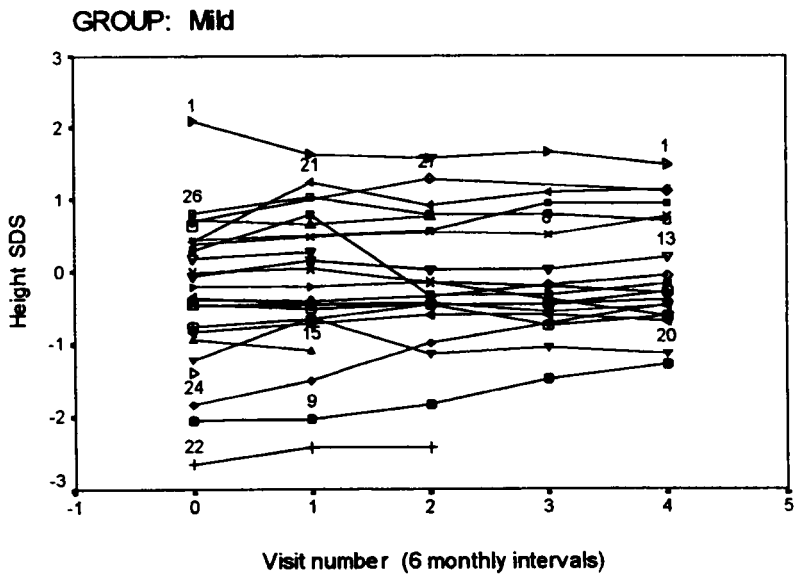


Figure 6.2.1.2 Individual weight standard deviation scores over the 2 year period between groups

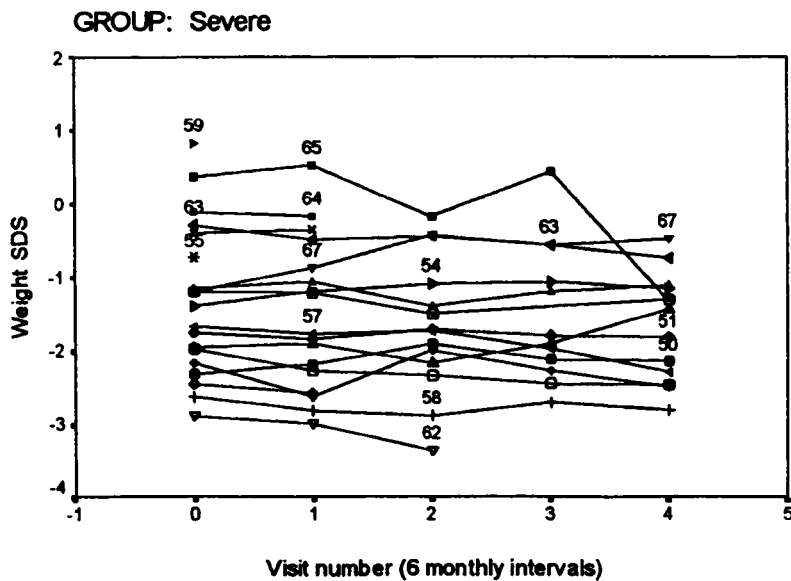
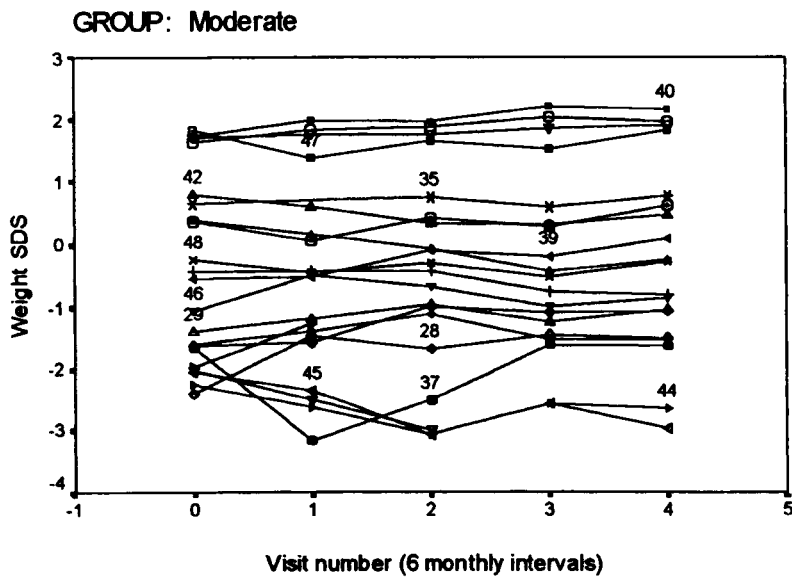
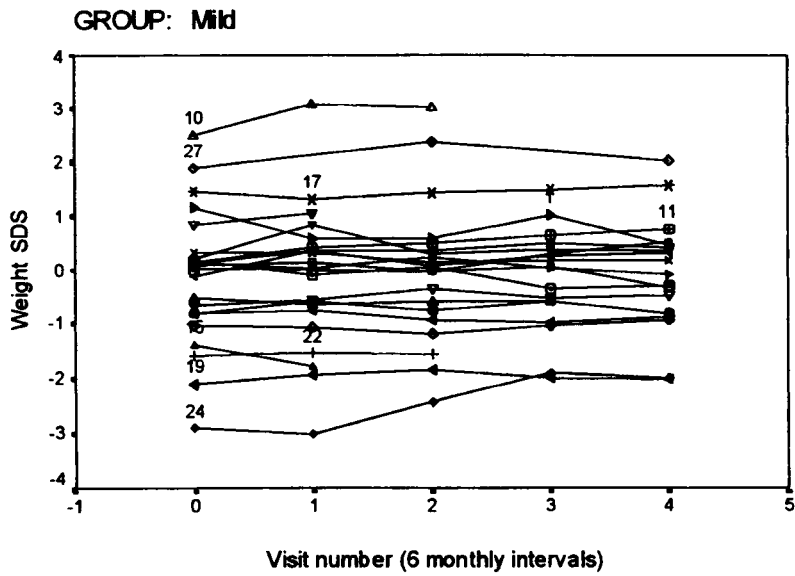


Figure 6.2.1.3 Individual body mass index standard deviation scores over the 2 year period between groups

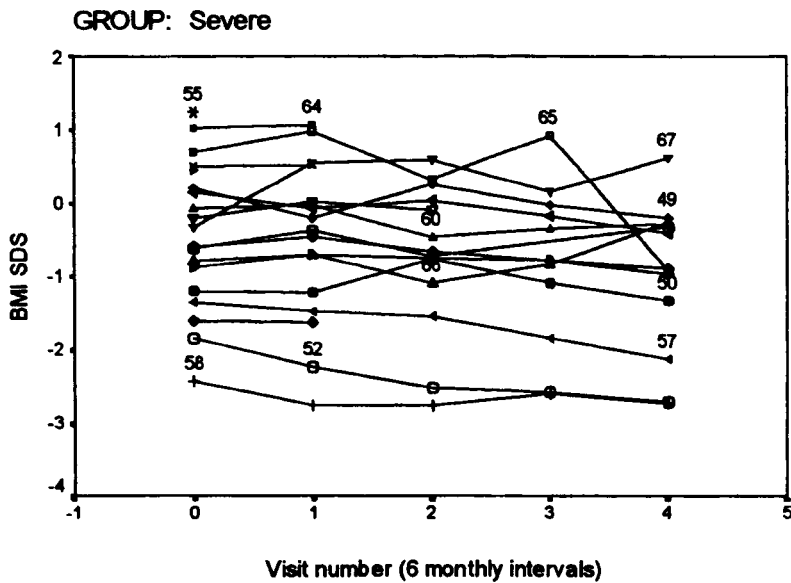
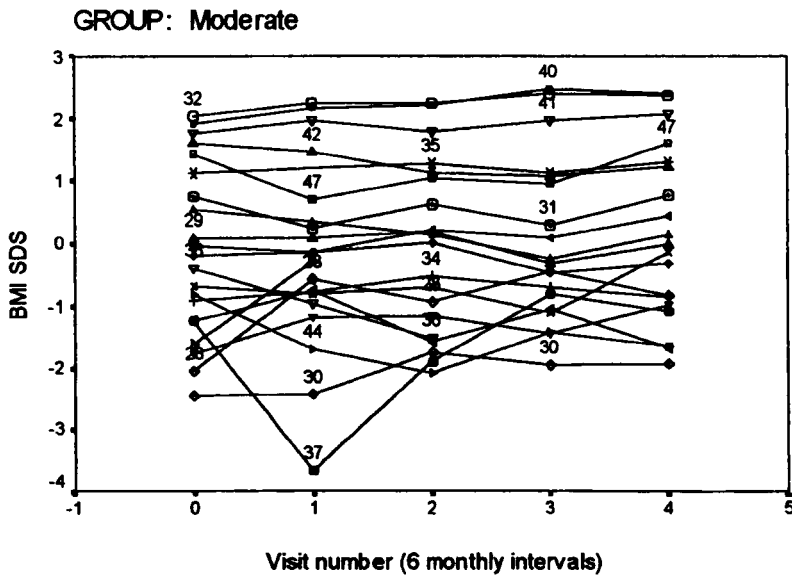
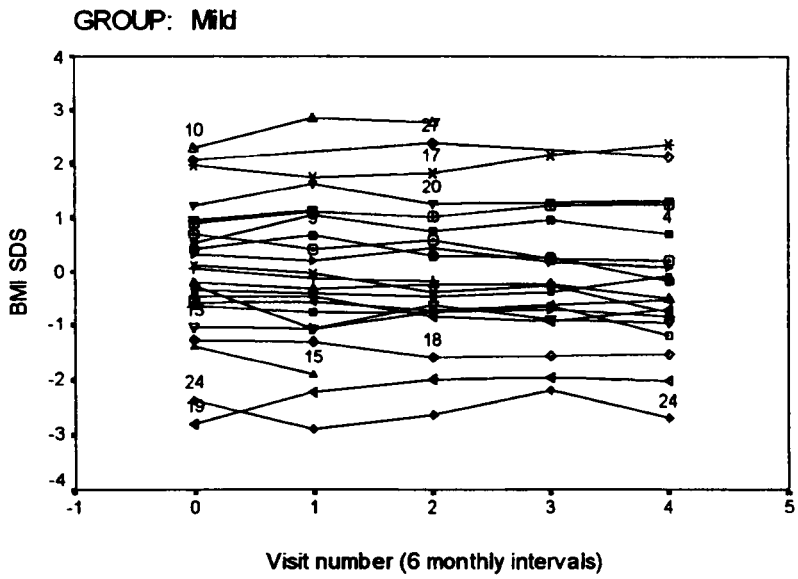


Table 6.2.1.1 Change in individual height, weight and BMI SDS's at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Height SDS		Weight SDS		BMI SDS	
	1 year	2 year	1 year	2 year	1 year	2 year
1	-0.51	-0.59	-0.6	-0.71	-0.49	-0.58
4	-0.62	-0.46	0.22	0.28	0.24	0.18
5						
6	0.12	0.49	-0.07	0.47	-0.13	0.27
7	0	-0.17	-0.1	-0.44	-0.12	-0.48
8	0.17	0.4	-0.17	-0.14	-0.48	-0.86
9*	0.21	0.77	0.07	0.02	-0.11	-0.58
10*	0.04		0.54		0.46	
11*	0.34	0.5	0.33	0.61	0.11	0.37
12						
13	0.1	0.26	0.33	0.22	0.43	0.08
14*	0.06	-0.09	0.11	-0.2	0.12	-0.22
15						
16						
17*	-0.13	-0.62	-0.03	0.1	-0.13	0.37
18	0.05	0.33	-0.14	0.12	-0.3	-0.26
19	-0.06	-0.1	0.24	0.08	0.79	0.78
20*	0.08	0.08	0.07	0.15	0.02	0.07
21	0.49	0.71	0.19	0.42	-0.14	0.08
22	0.2		0.02		-0.22	
23	0.02	0.09	-0.07	-0.28	-0.04	-0.31
24	0.85	1.39	0.49	0.93	-0.27	-0.33
25	0.25	0.15	-0.1	-0.05	-0.36	-0.23
26	-0.02	-0.1	-0.1	-0.41	-0.11	-0.54
27*	0.59	0.41	0.49	0.15	0.33	0.06

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Table 6.2.1.2 Change in individual height, weight and BMI SDS's at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Height SDS		Weight SDS		BMI SDS	
	1 year	2 year	1 year	2 year	1 year	2 year
28	-0.04	0.09	0.73	0.92	1.11	1.2
29	0.36	0.37	0.42	0.34	0.1	-0.09
30	0.16	0.18	0.62	0.55	0.73	0.54
31	0.14	0.3	0.05	0.26	-0.11	0.04
32*	-0.2	-0.53	0.26	0.32	0.22	0.33
33						
34	-0.36	-0.68	0	-0.37	0.38	0.05
35*	-0.09	-0.06	0.09	0.12	0.17	0.19
36	-0.16		-0.98		-1.11	
37	-0.53	-0.07	-0.85	0.02	-0.66	0.14
38	0.42	0.18	0.5	0.09	0.21	-0.12
39	0.44	0.41	0.46	0.64	0.25	0.48
40*	-0.16	-0.28	0.22	0.42	0.3	0.49
41*	0.04	-0.21	0.04	0.21	0.01	0.3
42	-0.07	-0.05	-0.46	-0.34	-0.48	-0.38
43	-0.36	-0.59	-0.47	-0.63	-0.39	-0.4
44	0.13	0.23	-0.82	-0.39	-1.28	-0.86
45	-0.9	-0.77	-1.0	-0.91	-0.35	-0.44
46	0.19	0.12	0.39	0.2	0.62	0.79
47*	0.35	0.16	-0.18	0.02	-0.38	0.16
48	-0.05	-0.03	-0.06	-0.03	-0.03	0.53

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Table 6.2.1.3 Change in individual height, weight and BMI SDS's at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Height SDS		Weight SDS		BMI SDS	
	1 year	2 year	1 year	2 year	1 year	2 year
49	0.02	-0.13	0.16	-0.34	0.04	-0.42
50	0.13	0.24	0.41	0.17	0.43	-0.13
51	0.05	0.11	0.04	-0.08	-0.06	-0.32
52	0.31	0.29	-0.37	-0.51	-0.67	-0.86
53	-0.35	-0.51	-0.29	-0.1	-0.1	0.28
54	0.28	0.37	0.31	0.24	0.14	-0.08
55						
56						
57	0.24	0.24	-0.07	-0.63	-0.21	-0.78
58	0.26	0.41	-0.27	-0.21	-0.33	-0.31
59						
60	0.08	0.49	-0.25	0.05	-0.41	-0.22
61						
62	-0.46		-0.49		0.11	
63	-0.11	-0.05	-0.15	-0.45	-0.11	-0.57
64						
65	-0.42	-0.49	-0.55	-1.7	-0.37	-1.6
66	-0.03	0.07	-0.22	0.51	-0.31	0.52
67	0.25	0.21	0.79	0.73	0.91	0.93

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figure 6.2.2.1 Individual total energy intakes (% EAR), including supplements over the 2 year period between groups

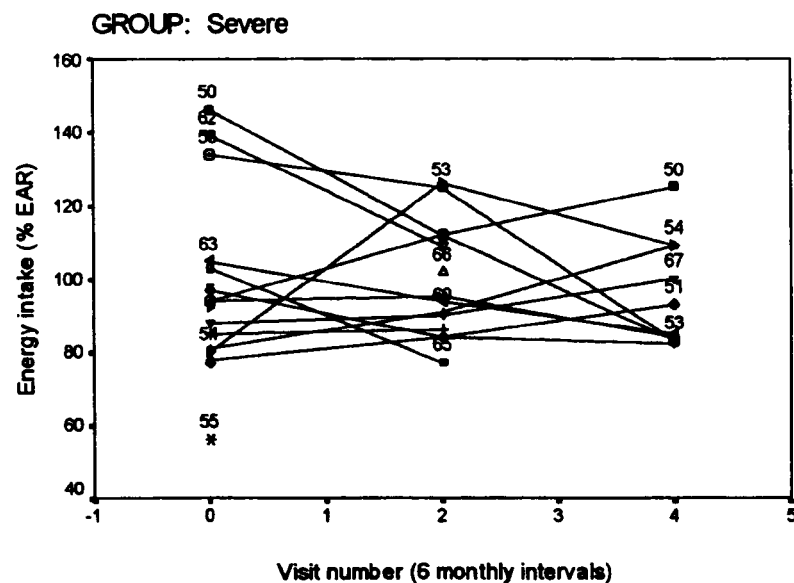
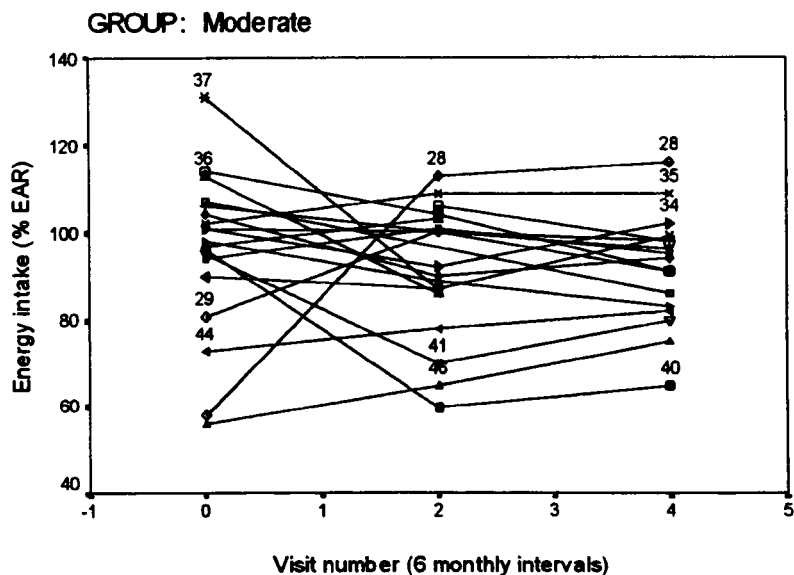
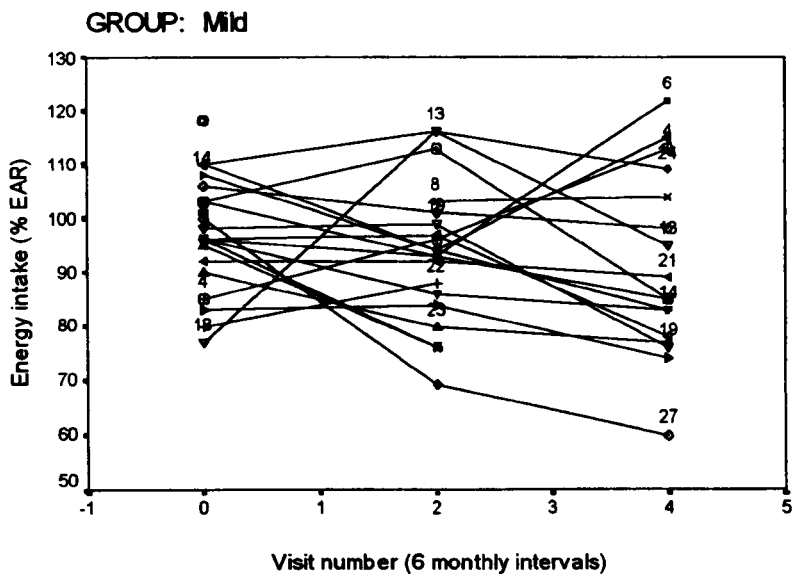


Figure 6.2.2.2 Individual protein intakes (g/kg) over the 2 year period between groups

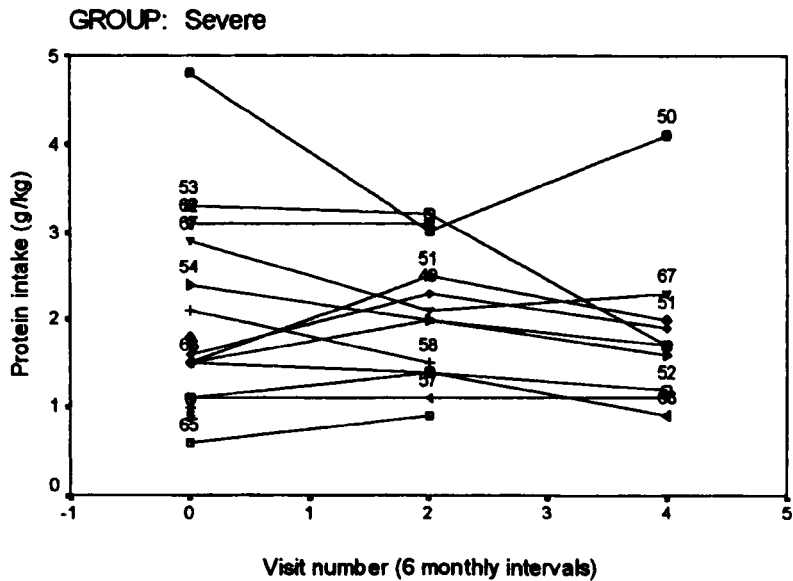
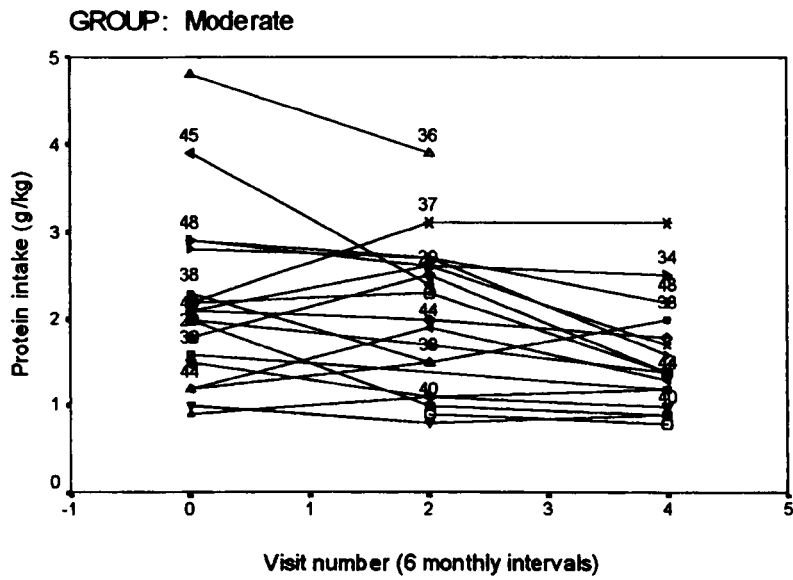
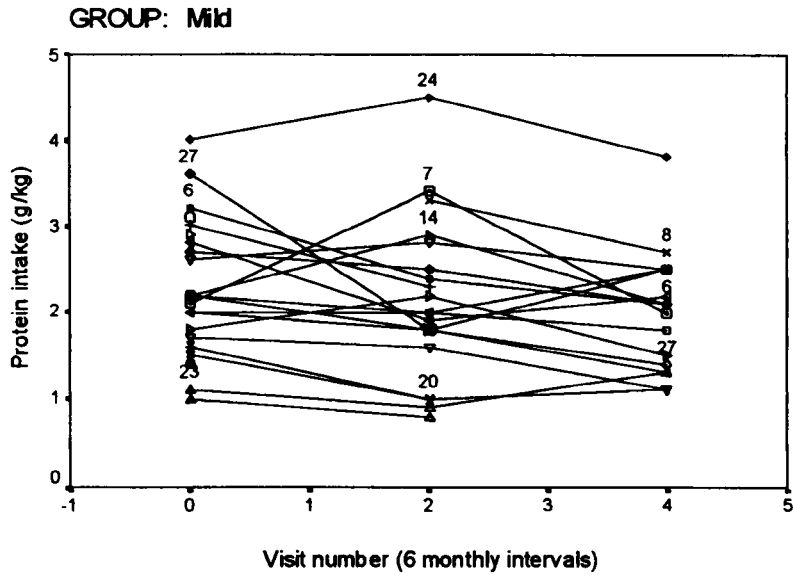


Table 6.2.2.1 Change in individual dietary energy (including supplements) and protein intakes at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Energy intake (% EAR)		Δ % Energy from supplements		Δ Protein intake (% total energy)		Δ Protein intake (g/kg)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
1	1	-18			-0.3	4.9	0.0	0.5
4	11	28			-2.4	-0.5	-0.4	0.3
5								
6	-10	19			-1.8	-5.0	-0.8	-1.1
7	10	-18			4.4	0.3	1.3	-0.1
8								
9*								
10*	-19				1.2		-0.2	
11*	1	-9			2.7	1.1	0.4	-0.3
12								
13	39	18			-2.9	-1.7	0.2	-0.1
14*	-14	-25			0.9	4.3	0.7	-0.1
15								
16								
17*	-20				-1.2		-0.6	
18	-5	-8			0.1	-0.5	-0.2	-0.6
19	1	-22			1.0	-1.0	-0.1	-0.6
20*	-10	-13			-1.3	-1.3	-0.5	-0.4
21	0	-3			0.9	-0.3	-0.2	-0.7
22	8				-4.2		-0.7	
23	-10	-13			-1.1	3.5	-0.2	0.2
24	6	-1	-1.2	-3.7	1.7	1.0	0.5	-0.2
25	-16	5			-2.3	-2.4	-0.9	-0.6
26	-3	-11			-0.2	0.3	-0.2	-0.4
27*	-31	-40			-2.3	-4.0	-1.8	-2.2

Δ, Change in; EAR, estimated average requirement

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Energy – Final energy intakes < 80% EAR
Protein – Final protein intakes between 0.8-1.2g/kg

Table 6.2.2.2 Change in individual dietary energy (including supplements) and protein intakes at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Energy intake (% EAR)		Δ % Energy from supplements		Δ Protein intake (% total energy)		Δ Protein intake (g/kg)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
28	55	58	19.7	16.0	-6.7	-6.2	-0.1	-0.3
29	19	10			2.4	-1.4	0.7	-0.4
30		-21				0		-0.4
31	-9	-15			1.9	-2.3	-0.1	-1.2
32*								
33								
34	-9	1			0.4	-1.1	-0.3	-0.4
35*	7	7			4.0	-1.7	0.5	-0.4
36	-27				-0.1		-0.9	
37	-44	-32	-31.8	-31.8	5.4	5.6	0.9	0.9
38	7	1			-3.3	-0.4	-0.8	-0.3
39	-1	-5			-0.8	0.4	-0.2	-0.1
40*	-36	-31			-1.9	-1.8	-1	-1.1
41*	-25	-15			1.0	-0.7	-0.4	-0.5
42	6				3.3		0.3	
43	-14	-10			-0.1	-1.9	-0.3	-0.6
44	5	9	-3.8	0.4	2.5	0.4	0.7	0.1
45	-3				-6.4		-1.5	
46	9	19			3.4	2.8	0.2	0.3
47*	-10	-23			2.7	-0.1	0.1	-0.8
48	-6	-8			0.7	-1.1	-0.2	-0.7

Δ, Change in; EAR, estimated average requirement

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Energy – Final energy intakes < 80% EAR
Protein – Final protein intakes between 0.8-1.2g/kg

Table 6.2.2.3 Change in individual dietary energy (including supplements) and protein intakes at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Δ Energy intake (% EAR)		Δ % Energy from supplements		Δ Protein intake (% total energy)		Δ Protein intake (g/kg)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
49	6	4	-4.5	-13.1	3.8	2.2	0.7	0.3
50	-34	-21			-2.0	1.0	-1.8	-0.7
51	-13	-4	-24.8	-24.8	7.3	4.0	1.0	0.5
52	18	-11	14	0	0.5	2.1	0.3	0.1
53	-9	-51			0.8	-1.0	-0.1	-1.6
54	46	29			-6.0	-5.4	-0.4	-0.8
55								
56								
57	1	-10	-16.9	-12.6	-0.8	2.2	0	0
58	1				-4.5		-0.6	
59								
60	10	28			3.9	1.7	0.5	0.2
61								
62	-30		-10.8		1.4		0	
63	-11	-20			2.4	-3.0	-0.1	-0.6
64								
65	-26				5.1		0.3	
66								
67	2	12	0.9	-4.4	-2.1	-2.3	-0.8	-0.6

Δ , Change in; EAR, estimated average requirement

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Energy – Final energy intakes < 80% EAR
Protein – Final protein intakes between 0.8-1.2g/kg

Table 6.3.1 Change in individual dietary fat and carbohydrate intakes (including supplements) at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Total fat (% total energy)		Δ Saturated fat (% total energy)		Δ Total CHO (% total energy)		Δ Sugars (% total energy)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
1	0	-7.5	-1	-5.4	1	2.1	4.6	-2.7
4	3.7	9.3	-2.4	1.7	-1	-8.3	-6.9	-16.6
5								
6	0	1.6	-2.7	-5.7	0	-0.8	-1.9	-2.8
7	6.4	2.9	5.3	4.3	-10.4	-2.8	-16.8	-13.2
8								
9*								
10*	-3.2		-6.2		2.1		4.8	
11*	-1	-4.1	1.3	0.3	-2	3.1	-1.6	-4.2
12								
13	4.9	-0.6	1.1	-1.1	-2.4	1.9	3.2	3.6
14*	-5.3	-6.2	-0.2	-1.8	4.6	1.9	5.9	-1.7
15								
16								
17*	-0.7		-5.4		1.5		-4.2	
18	-2.3	0.2	-2.2	-2.1	2.3	0.3	-2.5	-9.2
19	5.9	1.2	3.9	3.0	-6.9	-0.2	-2.1	3.6
20*	1.3	-1.1	-1.9	-2.6	-0.1	2.4	-0.3	-1.7
21	-7.4	2.5	-6.6	-5.3	7	-1.7	6.8	-2.3
22	-3.3		-3.2		7.5		3.7	
23	-5.8	1.4	-6	-0.2	6.8	-5.0	11.1	3.1
24	5.1	7.8	1.5	1.6	-7	-8.9	2.3	-0.7
25	-1.2	-5.5	-2.7	-4.2	3.4	7.2	3.7	12.1
26	4.0	-2.6	-1.2	-6.0	-3.7	2.4	-2.4	-6.6
27*	-4.0	-0.9	-4.1	-4.1	6.9	5.7	-0.8	-6.5

Δ, Change in; CHO, carbohydrate

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Saturated fat – Final intakes < 11% total energy intake
Sugar – Final sugar intakes > 30% total energy intake

Table 6.3.2 Change in individual dietary fat and carbohydrate intakes (including supplements) at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Total fat (% total energy)		Δ Saturated fat (% total energy)		Δ Total CHO (% total energy)		Δ Sugars (% total energy)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
28	-10.6	-9.3	-4.9	-2.7	16.1	13.1	1.5	-2.3
29	-3.6	-19	-0.4	-7.7	1.6	19.6	4.5	14.5
30		-4.8		-0.7		4.9		-1.4
31	-6.2	-12.8	-3.8	-4.6	4.5	15.0	4.0	14.4
32*								
33								
34	1.1	-3.4	3.0	-2.4	-1.6	4.3	-1.3	-3.8
35*	3.8	-8.2	2.2	-5.0	-8.2	8.9	-6.0	-1.5
36	-12.7		-10.6		13		7.2	
37	9.5	13.5	4.4	2.4	-13	-17	1.4	-5.9
38	-0.5	-1.1	-1.4	-3.0	3.9	1.7	5.8	0.4
39	5.3	1.0	-3.5	-0.7	-4.4	-0.8	-14.6	-13.8
40*	3.7	0.9	1.1	-0.9	-1.9	0.8	-2.4	-3.6
41*	-6.0	-3.8	-2.2	-2.4	4.9	4.4	-1.3	3.4
42	8.3		4.0		-9.2		-6.7	
43	-2.0	-0.7	-2.7	3.1	2.0	2.0	3.2	2.5
44	10.8	8.8	3.6	4.5	-13.6	-9.2	-9.0	-7.1
45	-0.2		-1.4		6.8		2.9	
46	-5.3	4.1	-2.7	0.7	1.8	-6.9	-7.2	-13.7
47*	0.2	-2.2	0.2	0.2	-3.0	2.2	-4.5	-0.1
48	2.0	-4.7	-5.9	-9.8	-2.9	5.5	-4.7	3.3

Δ, Change in; CHO, carbohydrate

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Saturated fat – Final intakes < 11% total energy intake
Sugar – Final sugar intakes > 30% total energy intake

Table 6.3.3 Change in individual dietary fat and carbohydrate intakes (including supplements) at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Δ Total fat (% total energy)		Δ Saturated fat (% total energy)		Δ Total CHO (% total energy)		Δ Sugars (% total energy)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
49	1.5	-4.9	0.2	-2.3	-4.2	4.1	5.0	12.9
50	-0.4	-4.8	-2.3	-2.1	2.8	4.0	-2.4	2.5
51	2.2	12.6	4.5	4.6	-7.7	-14.7	3.6	2.6
52	-1.2	5.2	-0.3	-0.5	0	-7.4	-13.6	-21.0
53	3.8	3.3	-1.3	0.8	-4.7	-5.5	0.4	-3.2
54	-0.2	2.2	-1.0	-2.9	6.1	3.1	7.7	0.2
55								
56								
57	1.6	8.5	1.4	5.6	-1.2	-10.0	4.8	1.8
58	1.6		-0.8		9.0		5.0	
59								
60	-4.5	-3.7	-0.9	-0.1	0.1	1.6	-0.3	0.4
61								
62	4.9		4.0		-6.2		-3.9	
63	-0.8	-5.7	-2.1	-7.8	-2.0	8.3	0.9	6.4
64								
65	5.7		4.9		-10.6		-9.1	
66								
67	8.8	9.7	2.6	3.1	-6.7	-6.0	2.7	1.0

Δ, Change in; CHO, carbohydrate

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Saturated fat – Final intakes < 11% total energy intake
Sugar – Final sugar intakes > 30% total energy intake

Figure 6.3 Individual serum HDL concentrations over the 2 year period between groups

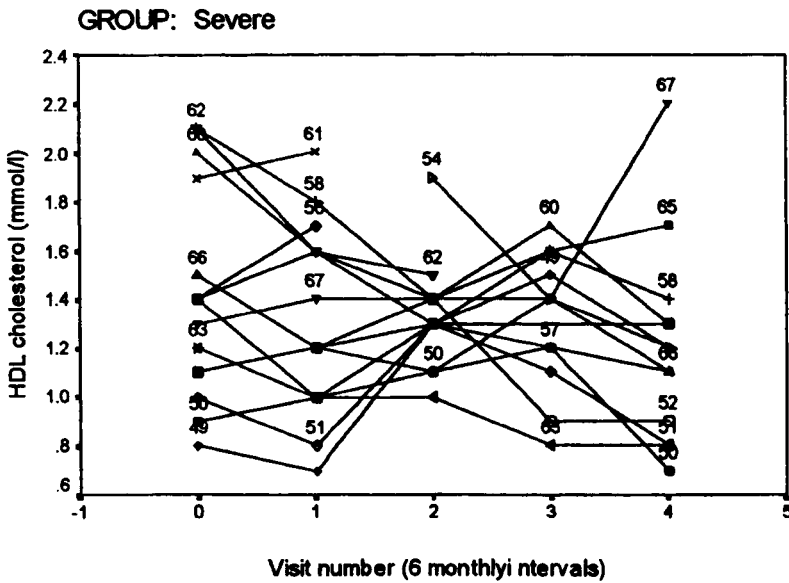
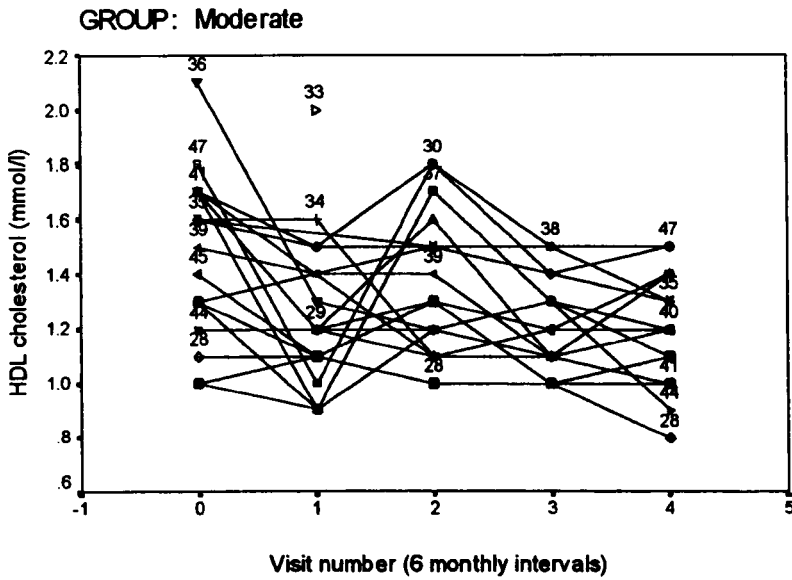
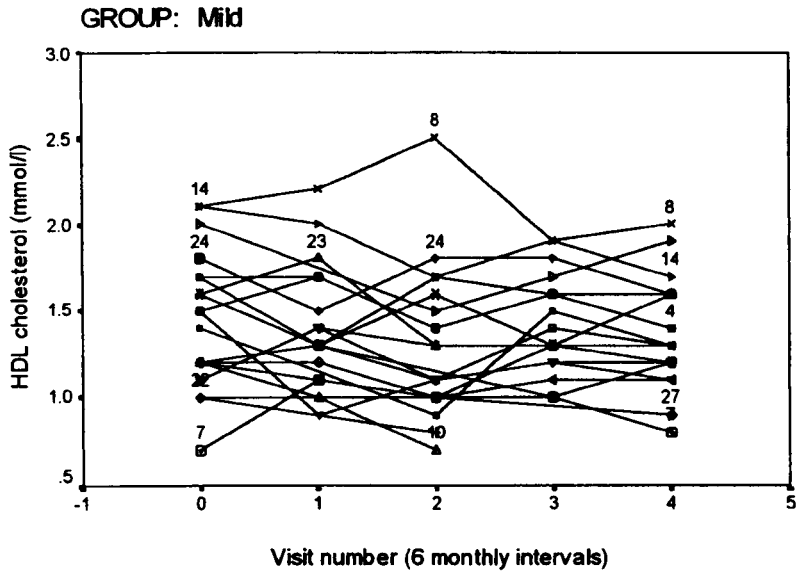


Table 6.3.5 Change in individual serum lipid concentrations at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Total cholesterol (mmol/l)		Δ HDL cholesterol (mmol/l)		Δ Total: HDL cholesterol		Δ Triglycerides (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
1	-1.6	-1.0	-0.5	-0.1	0.1	-0.3	1.4	0.1
4	-0.1	-0.3	0	-0.3	-0.1	0.4	1.8	0.8
5								
6	0	0.1	-0.5	-0.1	1.9	0.3	-0.2	-0.7
7	0	0	0.3	0.1	-1.6	-0.7	-0.2	-0.7
8			0.4	-0.1			0.1	0.3
9*	-0.4	0	-0.1	0.1	-0.1	-0.2	-1.0	-0.8
10*			-0.5					
11*								
12								
13	0.1	0.3					-0.9	-1.9
14*	-0.4	0.2	-0.4	-0.4	0.5	0.8	0.4	-0.2
15								
16								
17*	0.8	0.1	0	-0.4	0.5	1.0	-0.1	0.2
18	-1.0	-0.6	-0.2	0	-0.1	-0.5	-1.7	-2.0
19	-0.2	-0.5	-0.2	-0.1	0.6	-0.1	0	-0.4
20*	-0.2	-0.1	-0.4	-0.4	0.8	0.9	-0.2	-0.3
21								
22	0.1		-0.2		1.2		0.8	
23	-0.4	0.4	-0.3	0	0.6	0.3	0.1	0.1
24	1.5	0.4	0	-0.2	0.8	0.8	1.3	1.0
25	-0.1	-0.3	-0.2	0	0.7	-0.3	0	0
26	-0.1	-0.2	-0.1	0.1	0.3	-0.5	0.5	0.4
27*	0.5	0.1	0	-0.1	0.5	0.6	0.5	0.4

Δ, Change in;

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: HDL cholesterol concentration < 1 mmol/l

Table 6.3.6 Change in individual serum lipid concentrations at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Total cholesterol (mmol/l)		Δ HDL cholesterol (mmol/l)		Δ Total: HDL cholesterol		Δ Triglycerides (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
28	-0.1	-0.4	-0.1	-0.3	0.2	0.6	0.5	0.9
29	-0.4	-0.1	-0.1	-0.5	-0.1	1.1	0.1	0.1
30	0.3	-0.1	0.2	-0.1	-0.1	0.1	0.5	0.2
31	-0.4	0.3	0	0	-0.4	0.3	0	-0.8
32*	0.6	1	0	-0.2	0.5	1.6	0	0.5
33								
34	-0.5	0.4	-0.5	-0.2	1.4	0.9	0.7	0.1
35*	-0.1	-0.1	-0.1	-0.3	0.2	0.7	0.5	0.4
36	0.4		-0.9		2.5		1.6	
37	0.1	1.9	0	-0.5	0.1	3.1	-0.5	1.7
38	0.5	1.0	-0.2	-0.2	0.7	1.0	-0.3	0.8
39	0.3	0.5	-0.1	-0.1	0.5	0.6	-0.3	0
40*	-0.7	0	-0.6	-0.5	1.6	1.7	1.3	0.4
41*	0.1	-0.7	-0.6	-0.7	2.0	1.7	0.9	0.4
42	0.2	-0.2	0.2	0	-0.9	-0.2	-0.8	0.6
43	1.1	0.8	0.2	0	0.3	0.6	-1.4	-0.8
44	0.8	-1.0	0	-0.3	0.7	0.2	0.3	0.3
45	0.2	-0.7	-0.1	-0.2	0.5	0.1	0.2	0.2
46	0.2	0.7	0.1	0.2	-0.2	-0.1	0.2	0
47*	-0.6	-0.8	0	-0.3	-0.3	-0.1	-0.2	-0.1
48	-0.3	-0.7	-0.1	-0.2	0.1	0.1	0.4	0.1

Δ, Change in;

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: HDL cholesterol concentration < 1 mmol/l

Table 6.3.7 Change in individual serum lipid concentrations at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Δ Total cholesterol (mmol/l)		Δ HDL cholesterol (mmol/l)		Δ Total: HDL cholesterol		Δ Triglycerides (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
49	1.3	1.8	0.5	0.4	-0.9	-0.2	-0.2	-0.2
50	-0.2	-1.2	0.2	-0.2	-1.2	-0.1	-1.8	-1.1
51	1	1.1	0.3	-0.2	-0.2	2.4	1.4	1.5
52	-0.3	-0.8	0.3	-0.2	-1.3	0.2	0.1	0
53	-0.3	-0.9	-0.1	-0.1	0	-0.5	-0.1	0.5
54	-0.1	-1.4					-0.2	-0.1
55								
56								
57	0	-0.7	0.2	0	-0.7	-0.6	-0.3	-1.5
58	-1.5	-1.1	-0.7	-0.7	0.3	0.6	0	-0.1
59								
60	0.2	-0.8	-0.6	-0.7	1.2	0.7	0.7	0.5
61								
62	0.1		-0.6		0.9		-1.2	
63	-0.1	-0.9	-0.2	-0.4	0.8	1.2	-0.2	0.2
64								
65	0.3	0.4	-0.1	0.3	0.5	-0.5	0.4	0.3
66	-1.8	-2.8	-0.4	-0.4	-0.1	-1.0	0.1	-0.6
67		0.3		0.9		-1.4		-1.2

Δ, Change in;

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: HDL cholesterol concentration < 1 mmol/l

Table 6.4.1.1 Change in individual plasma urea and electrolytes at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Creatinine (mmol/l)		Δ Urea (mmol/l)		Δ Potassium (mmol/l)		Δ Bicarbonate (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
1	9	6	0.3	0.7	0.7	-0.2	-7	-4
4	5	31	-2.5	-4.3	-0.3	-0.7	6	8
5								
6	1	10	-1.6	-0.1	-0.6	-0.2	-1	1
7	-3	8	1.7	0.3	-0.1	-0.2	2	0
8	10	21	0.4	0	-0.2	0.1	4	7
9*	-7	6	-1.8	-1.2	0.1	-0.5	1	-1
10*	1		-1.3		-1.1		6	
11*	9	15	0.7	-0.3	-0.6	-0.2	5	3
12								
13	19	27	1.2	1.4	0.3	0.4	2	5
14*	6	22	-1.6	1.3	-0.2	0	-1	4
15								
16								
17*	18	18	0.2	0.7	0.6	0.6	4	3
18	23	30	-2	-2.4	0.6	-0.1	6	4
19	25	41	-0.5	-1.4	-0.7	-0.3	8	8
20*	32	37	-0.8	-1.8	-0.2	0.2	1	5
21	4	8	0.8	-0.9	-0.1	-0.2		
22	13		0.9		0.1		3	
23	7	11	2.3	1.1	1.6	0.5	0	2
24	20	14	-3.9	-4.1			11	2
25	6	3	-1.8	-1.9	0	-0.1	1	1
26	2	11	0.7	2	0.3	0.1	2	0
27*	6	14	1.8	0.4	-0.2	-0.2	1	3

Δ, Change in;

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Plasma urea > 10 mmol/l
 Plasma potassium > normal (5.3 mmol/l)
 Plasma bicarbonate < 18 mmol/l

Table 6.4.1.2 Change in individual plasma urea and electrolytes at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Creatinine (mmol/l)		Δ Urea (mmol/l)		Δ Potassium (mmol/l)		Δ Bicarbonate (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
28	4	22	-4.4	-1.7	0.6	0.4	6	6
29	4	15	-4.1	-1.1	-0.1	-0.2	9	8
30	-4	19	-1.9	-2	0	-0.3	4	4
31	-5	22	-0.4	1.8	-0.2	0.4	2	-1
32*	32	57	0.1	1.2	0.4	-0.6	0	3
33								
34	13	13	-0.9	-0.6	-0.1	-0.3	5	0
35*	32	76	6.1	3.5	1.8	0.5	1	0
36	46		0.4		0.3		1	
37	17	46	-0.7	1.4	0	0.3	1	5
38	32	46	-1.3	2.6	-0.7	-0.5	2	4
39	10	15	-1	0.8	-0.2	0	3	7
40*	25	29	0	-1.8	0.7	1.4	-3	0
41*	26	30	0.8	2	-0.3	0	0	1
42	37	76	-1.1	0.9	0.3	2.3	-2	-2
43	12	22	-2	-4.8	-0.4	0.7	0	1
44	-9	0	-0.8	-1.9	-0.9	-0.9	5	5
45	32	44	-0.8	-2.7	-0.2	0.4	-3	4
46	33	48	3.4	3.4	0.2	1.1	-4	0
47*	0	0	-0.4	-1.2	0	0.1	5	2
48	8	8	-2.7	-1.6	-0.2	-0.1	1	1

Δ, Change in;

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Plasma urea > 10 mmol/l
 Plasma potassium > normal (5.3 mmol/l)
 Plasma bicarbonate < 18 mmol/l

Table 6.4.1.3 Change in individual plasma urea and electrolytes at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Δ Creatinine (mmol/l)		Δ Urea (mmol/l)		Δ Potassium (mmol/l)		Δ Bicarbonate (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
49	17	82	7.3	15.8	0.2	-0.3	7	2
50	8	16	-7.1	-6.9	-0.3	-0.6	4	0
51	11	58	0.2	4.2	0.2	0.1	7	5
52	28	96	2.2	2.4	0.3	0.4	3	-1
53	13	41	3.3	7.7			-5	-8
54	34	164	3	4.3	-0.4	0.5	-3	-5
55								
56								
57	-38	123	-0.4	4.4	-0.3	-0.3	2	0
58	7	23	-3.1	-4	0.4	0.5	0	1
59								
60	41	44	0.4	-0.7	0.2	-0.7	2	2
61								
62	26		4.1		0.1		3	
63	51	187	-2	3.4	-0.1	1.7	-5	-3
64								
65	-10	-11	-8.6	-10.6	-0.7	-0.8	-3	0
66	60	156	-1.8	7.6	0.4	0.9	5	5
67	-4	71	-0.4	-1.3	0.9	1	1	3

Δ, Change in;

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Plasma urea > 10 mmol/l
 Plasma potassium > normal (5.3 mmol/l)
 Plasma bicarbonate < 18 mmol/l

Figure 6.4.2.2 Individual diastolic blood pressure standard deviation scores over the 2 year period between groups

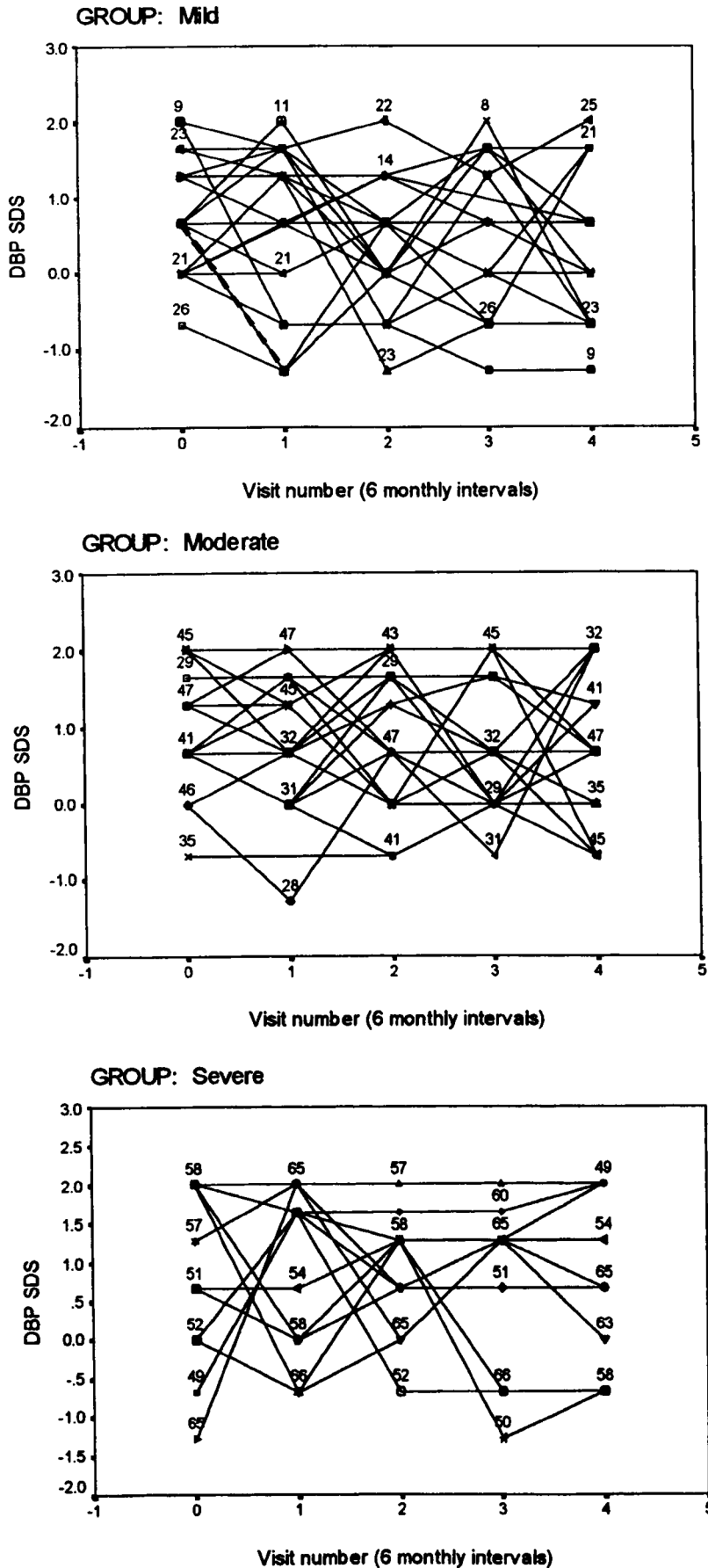


Table 6.4.2.1 Individual blood pressure and change in SDS's at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	SBP		Δ SBP SDS		DBP		Δ DBP SDS	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
1	110	116	-0.61	0	49	54	-0.67	-0.67
4	132	115	0	-0.72	61	53	-0.98	-2.32
5								
6	106	119	0.67	2.00	67	58	1.28	0
7	110	105	1.28	0.67	62	52	0	-1.34
8	112	100	-0.98	-2.32	59	55	-1.28	-1.95
9*	120	120	-0.72	-1.33	50	50	-2.67	-3.28
10*	138		-0.35		64		-1.28	
11*	118	130	0	0.35	59	65	-0.67	0
12								
13	103	110	0.67	1.34	54	61	0	0
14*	100	100	-0.67	-0.67	70	60	1.28	0
15								
16								
17*	100	120	-1.34	0	50	63	-1.34	-0.67
18	119	112	0.61	-0.67	63	68	0	0
19	105	107	-1.34	-1.34	71	58	0	-1.34
20*	133	113	-0.37	-2.32	69	80	0	0.98
21	131	125	0	-1.28	72	82	0.67	1.65
22	121		0.35		81		0	
23	95	110	-2.67	-1.34	50	60	-2.93	-2.32
24	Unable to measure blood pressure readily in clinic							
25	106	113	0	0	81	76	0.35	0.35
26	112	113	-0.61	-0.61	61	74	0.67	2.32
27*	124	106	0	-2.00	72	65	0	-0.61

SBP, systolic blood pressure; DBP, diastolic blood pressure; SDS, standard deviation score; Δ, change in

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Table 6.4.2.2 Individual blood pressure and change in SDS's at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	SBP		Δ SBP SDS		DBP		Δ DBP SDS	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
28	113	128	0.67	1.65	69	68	0.67	0.67
29	100	100	0	-1.65	50	50	0	-2.32
30	130	120	1.28	0	79	70	0.98	0
31	107	97	-0.61	-1.95	65	76	0	1.33
32*	146	140	0.37	0	73	85	0.98	1.33
33								
34	137	107	0.72	-0.61	87	87	0	0
35*	130	124	0	-0.35	52	58	0	0.67
36	Unable to obtain blood pressure measurements							
37	118	99	Ht < 100cm		65	64	Ht < 100cm	
38	114	117	-0.72	-0.72	58	85	-1.28	0.72
39	110	100	-1.95	-1.95	60	65	-1.28	-1.28
40*	110	120	-2.00	-1.33	60	70	-0.67	0
41*	123	138	-0.61	0.72	53	73	-1.34	0.61
42	110	115	-1.95	-1.95	60	60	-0.67	-0.67
43	118	137	-0.61	0.72	84	83	0	0
44	100	90	-1.28	-2.56	65	50	0	-1.34
45	115	108	-0.72	-1.33	77	50	0	-2.67
46	115	119	-1.28	-0.61	74	76	1.28	1.28
47*	113	116	-0.61	-0.61	64	69	-0.61	-0.61
48	116	120	-0.72	-0.35	70	64	0.61	0

SBP, systolic blood pressure; DBP, diastolic blood pressure;
SDS, standard deviation score; Δ, change in

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Table 6.4.2.3 Individual blood pressure and change in SDS's at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	SBP		Δ SBP SDS		DBP		Δ DBP SDS	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
49	90	115	-2.67	-0.35	60	78	1.34	2.67
50	111	97	0.61	-1.34	65	50	-0.72	-2.67
51	125	119	0	-0.35	63	63	0	0
52	110	112	-1.34	-1.34	60	63	-0.67	-0.67
53	112	115	-1.33	-1.33	67	65	-1.33	-1.33
54	131	138	1.33	1.33	70	71	0.61	0.61
55								
56								
57	149	142	0	0	100	86	0.72	0.72
58	126	107	0.61	-1.34	76	57	-0.72	-2.67
59								
60	125	137	0	0.35	76	88	-0.35	0
61								
62	116		Ht < 100cm		59		Ht < 100cm	
63	123	105	0	-1.95	61	60	0	0
64								
65	121	116	0	-0.67	64	69	1.28	1.95
66	110	90	-1.33	-3.65	70	50	-0.72	-2.67
67	90	95	Ht < 100cm		50	60	Ht < 100cm	

SBP, systolic blood pressure; DBP, diastolic blood pressure;
SDS, standard deviation score; Δ, change in

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figure 6.5.1 Individual total sodium intakes (mmol/ d) over the 2 year period between groups

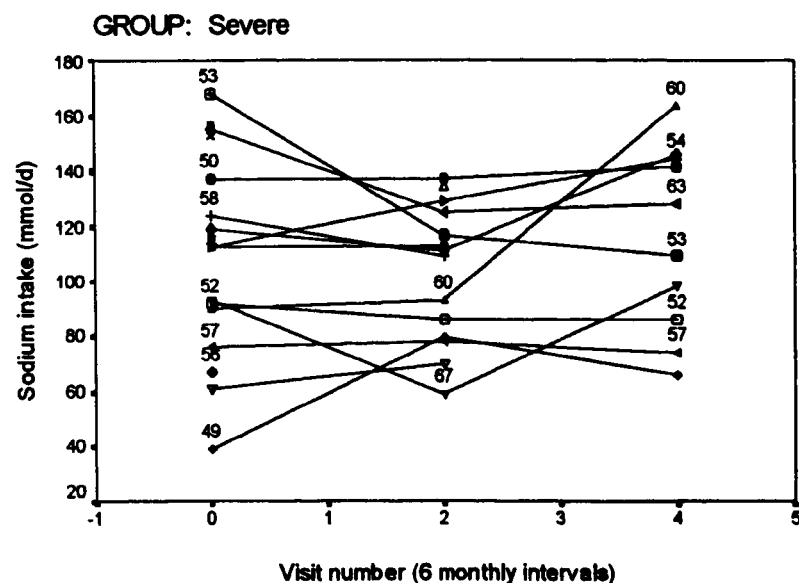
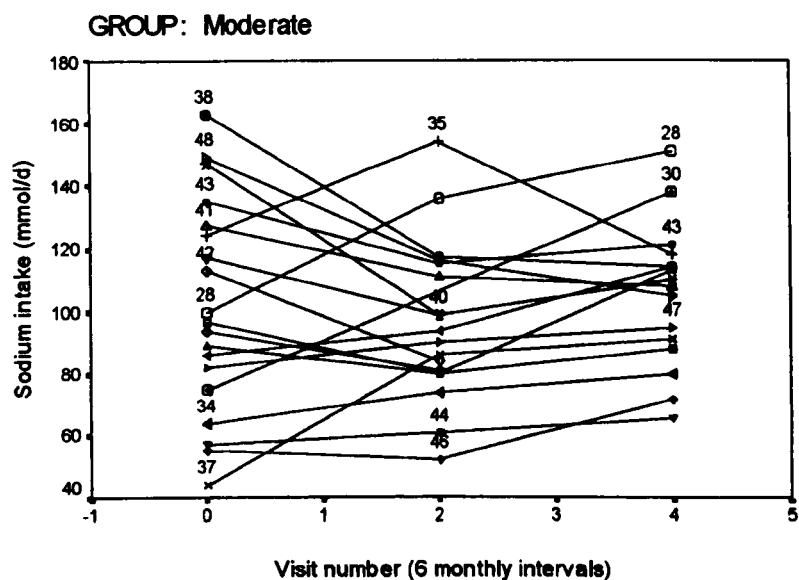
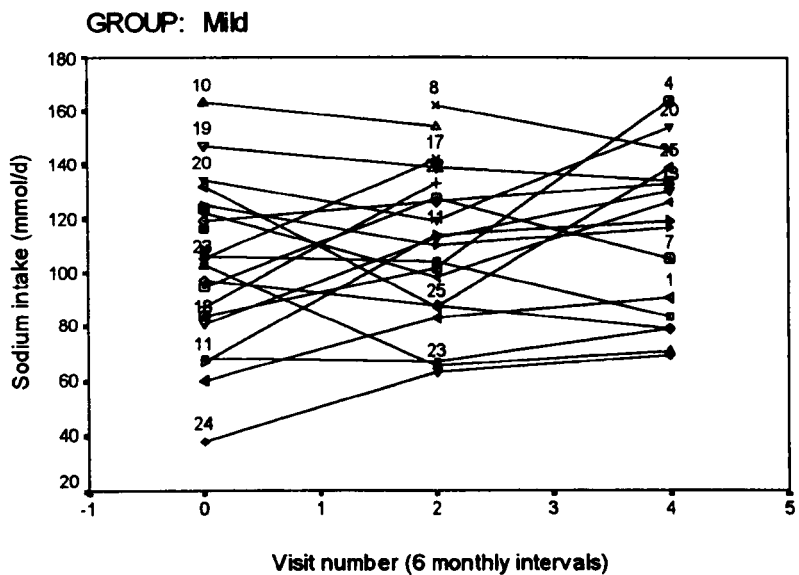


Figure 6.5.3 Individual calcium intakes (% RNI) over the 2 year period between groups

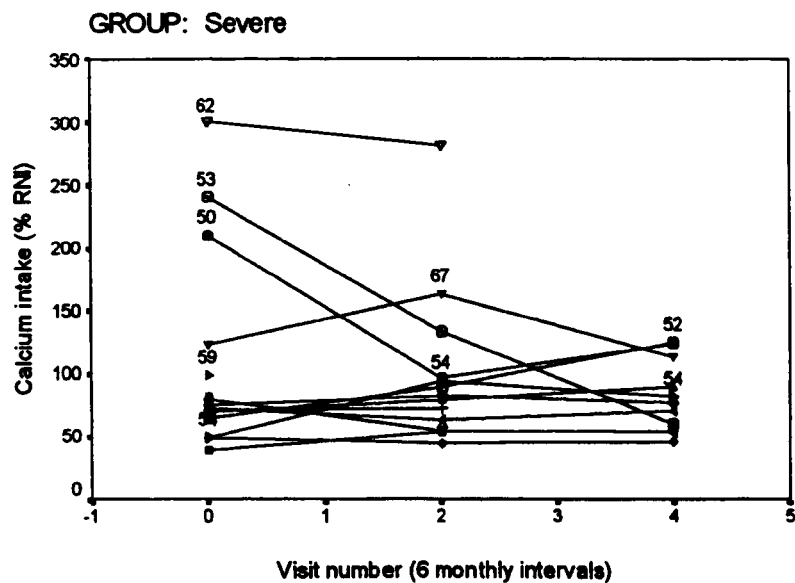
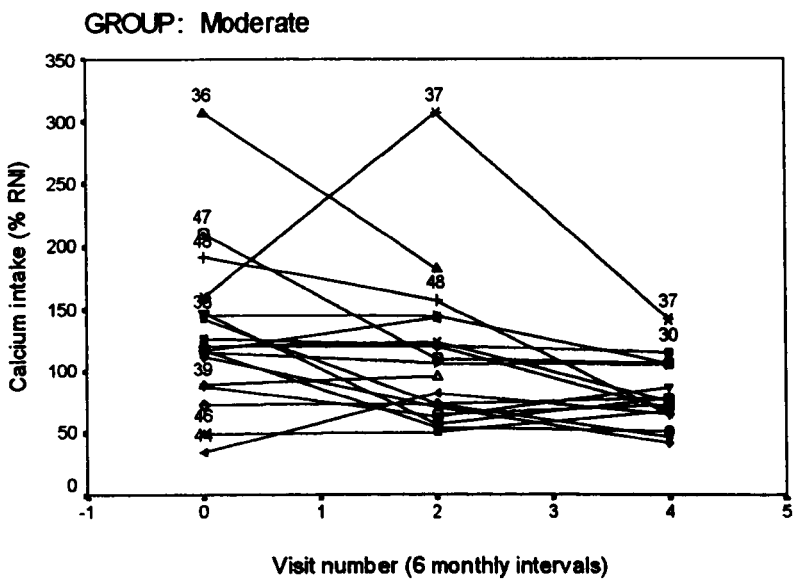
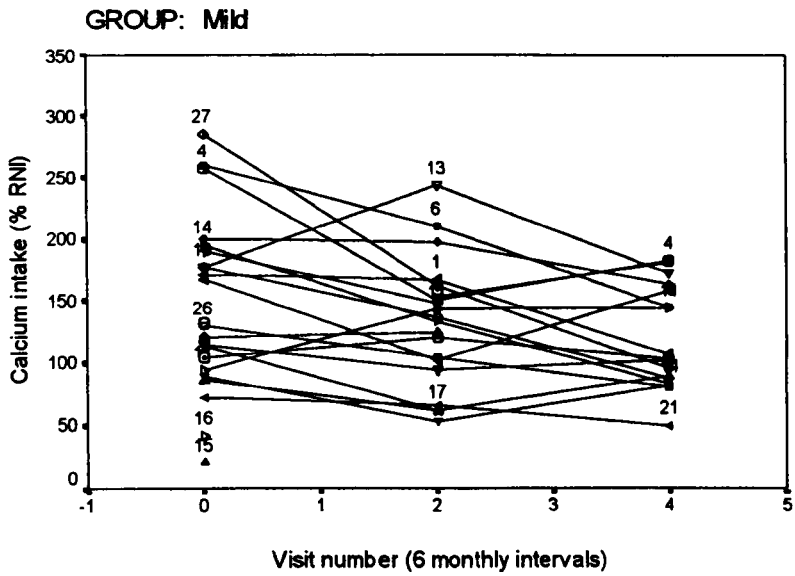


Table 6.5.1 Change in individual dietary sodium, phosphate and calcium intakes at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Sodium (mmol/d)		Δ Phosphate (mg/d)		Δ Calcium (%RNI)	
	1 year	2 year	1 year	2 year	1 year	2 year
1	23	31	192	129	-4	-65
4	18	80	-261	150	-106	-74
5						
6	-1	11	-154	-159	-49	-115
7	32	10	425	143	17	-1
8						
9*						
10*	-9		35		3	
11*	47	52	356	129	49	51
12						
13	32	49	434	375	66	-5
14*	-15	-8	-305	-23	-62	-112
15						
16						
17*	37		-360		-51	
18	7	14	-220	-147	-41	-91
19	-8	-13	-25	-182	-20	-13
20*	-15	20	-387	-91	-36	-8
21	-24	4	41	-77	-6	-22
22	46		-195		-42	
23	-38	-32	20	160	-24	3
24	25	31	209	218	-2	-37
25	-45	7	-339	111	-66	-9
26	-2	-22	-228	-293	-25	-49
27*	-9	-18	-515	-803	-123	-190

Δ, Change in; RNI, reference nutrient intake

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent:

Sodium – Final intakes < 100 mmol/d
 Phosphate – Final intakes ≤ 1000mg/ d
 Calcium – Final intakes ≥ 100% RNI

Table 6.5.2 Change in individual dietary sodium, phosphate and calcium intakes at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Sodium (mmol/d)		Δ Phosphate (mg/d)		Δ Calcium (%RNI)	
	1 year	2 year	1 year	2 year	1 year	2 year
28	36	51	271	210	2	7
29	-17	-9	202	-49	0	-51
30		63		-103		-12
31	8	28	-258	-388	-8	-10
32*						
33						
34	10	16	99	118	-1	-40
35*	30	-6	81	-129	4	-44
36	-13		-353		-125	
37	42	47	217	257	147	-18
38	-46	-49	-245	-299	-69	-95
39	-9	24	-127	215	-24	0
40*	-48	-37	-303	-271	-63	-65
41*	-16	-19	-101	-7	-90	-69
42	-29		-77		7	
43	-20	-14	-332	-581	-41	-70
44	4	9	203	195	49	32
45	-18		-129		26	
46	-3	17	150	233	1	18
47*	8	13	-192	-371	-100	-104
48	-33	-44	-273	-376	-34	-125

Δ , Change in; RNI, reference nutrient intake

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Sodium – Final intakes < 100 mmol/d
 Phosphate – Final intakes \leq 1000mg/ d
 Calcium – Final intakes \geq 100% RNI

Table 6.5.3 Change in individual dietary sodium, phosphate and calcium intakes at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Δ Sodium (mmol/d)		Δ Phosphate (mg/d)		Δ Calcium (%RNI)	
	1 year	2 year	1 year	2 year	1 year	2 year
49	41	27	93	130	-4	-3
50	0	4	-514	-257	-114	-88
51	-8	27	165	-42	7	1
52	-6	-6	202	-80	24	59
53	-51	-59	55	-641	-108	-182
54	16	31	482	339	44	31
55						
56						
57	2	-2	-105	-47	-8	-2
58	-15		-261		1	
59						
60	3	73	71	93	8	19
61						
62	9		-143		-19	
63	-30	-27	-142	-395	-26	-27
64						
65	0		-154		14	
66						
67	-34	5	6	-25	41	-10

Δ, Change in; RNI, reference nutrient intake

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Sodium – Final intakes < 100 mmol/d
 Phosphate – Final intakes ≤ 1000mg/ d
 Calcium – Final intakes ≥ 100% RNI

Figure 6.5.5 Individual plasma phosphate concentrations over the 2 year period between groups

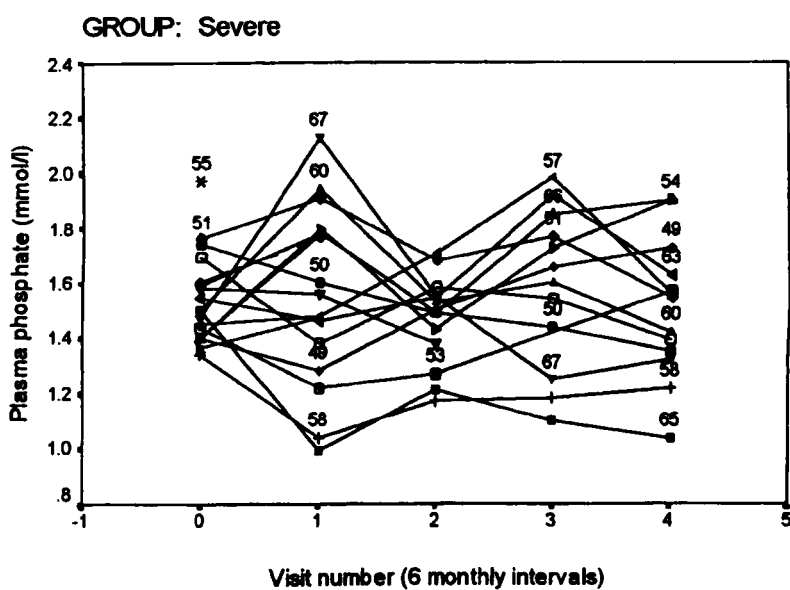
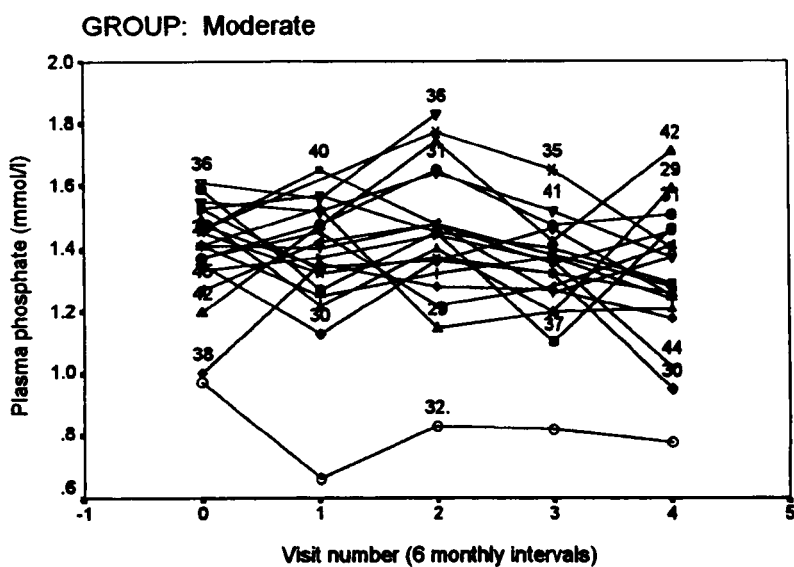
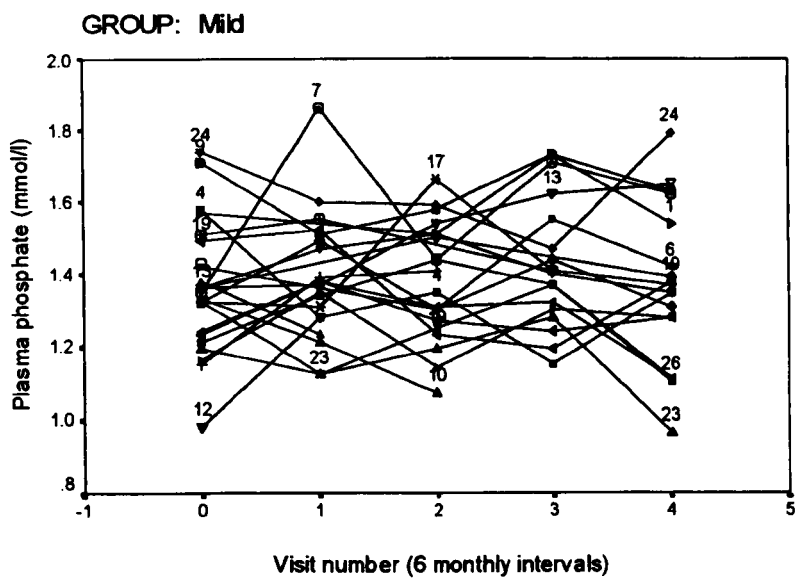


Figure 6.5.6 Individual serum parathyroid hormone concentrations over the 2 year period between groups

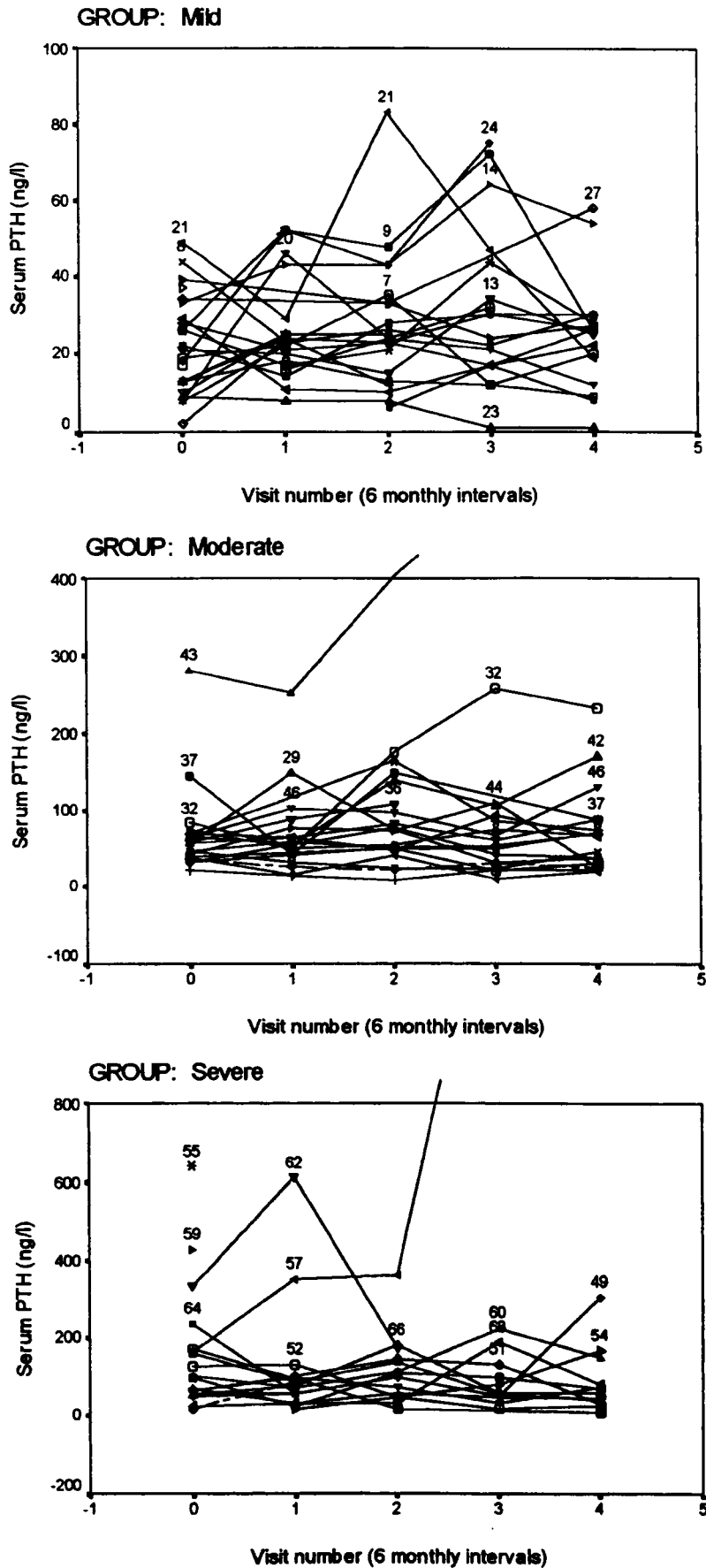


Table 6.5.5 Change in individual plasma concentrations relating to bone activity at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Calcium (mmol/l)		Δ Phosphate (mmol/l)		Δ PTH (ng/l)		Δ Apase (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
1	0	0.16	-0.06	-0.03	-6	-12	29	17
4	0	-0.03	-0.23	-0.23	6	4	58	-18
5								
6	0.01	0.18	-0.12	0			-71	9
7	-0.09	-0.01	0.09	0.27	16	1	3	35
8	0.1	-0.01	-0.07	-0.21	-18	-14	25	-118
9*	0.04	0.11	-0.13	-0.08	22	0	74	129
10*	0.08		-0.26		12		-88	
11*	0.1	0.07	0.04	-0.1			-34	21
12								
13	-0.01	0.08	0.18	0.29	-6	4	10	51
14*	-0.06	-0.05	-0.02	0.12	10	21	120	31
15								
16								
17*	0.01	-0.05	0.34	0.05	-5	2	-125	-118
18	-0.01	-0.01	0.12	-0.01	21	28	-6	272
19	0.06	0.02	-0.26	-0.11	-5	-2	-66	-168
20*	-0.14	-0.17	0.15	-0.01	16	4	85	-154
21			0.07	-0.13	34	-30	172	195
22	-0.06		0.26		-1		-127	
23	-0.19	-0.16	0	-0.23	-1	-8	-67	-99
24	-0.14	-0.26	-0.15	0.05	25		10	-50
25	-0.05	-0.12	0.04	0.05	-19	-7	9	21
26	-0.01	0.04	.23	-0.11	0	-4	-69	-130
27*	0.06	0.12	0.14	0.03	0	24	0	-54

Δ, Change in; PTH, parathyroid hormone; Apase, alkaline phosphatase

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Calcium – outside normal range (2.25-2.65 mmol/l)
 Phosphate – above normal range (> 1.7 mmol/l)
 PTH – outside normal range (12-72 ng/l)

Table 6.5.6 Change in individual plasma concentrations relating to bone activity at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Calcium (mmol/l)		Δ Phosphate (mmol/l)		Δ PTH (ng/l)		Δ Apase (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
28	-0.08	-0.12	-0.12	-0.23	20	38	18	267
29	0.15	0.1	-0.26	0.18	18	-18	204	115
30	0.23	0.17	0.01	-0.4	-13	-10	-4	-48
31	-0.07	0.09	0.28	0.14	11	-8	-95	-16
32*	-0.02	0	-0.14	-0.19	92	147	-62	-70
33								
34	-0.09	-0.03	-0.09	-0.17	-14	1	-22	8
35*	-0.46	0.03	0.31	-0.06	94	5	30	104
36	-0.12		0.22		50		-46	
37	0.02	-0.05	-0.14	-0.13	4	-57	-82	-241
38	-0.06	-0.04	0.28	0.18	45	7	203	-126
39	0.05	0.17	-0.15	0.04	4	-15	-20	-285
40*	-0.03	0.06	0.02	-0.01	-20	-6	-106	-59
41*	-0.1	-0.11	0.09	-0.18	26	32	95	80
42	-0.08	0.14	0.54	0.51	73	104	331	46
43	.03	-0.1	-0.1	-0.29	121	853	229	587
44	-0.08	0.09	0.11	-0.31	31	-16	-9	-29
45	0.07	0	0.21	0.01	-23	-4	-179	-139
46	-0.01	-0.07	0.07	-0.04	32	65	-94	-162
47*	-0.11	0.02	-0.08	-0.24	4	26	220	-12
48	-0.14	-0.01	-0.08	-0.19	-21	1	-32	-23

Δ, Change in; PTH, parathyroid hormone; Apase, alkaline phosphatase

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Calcium – outside normal range (2.25-2.65 mmol/l)
 Phosphate – above normal range (> 1.7 mmol/l)
 PTH – outside normal range (12-72 ng/l)

Table 6.5.7 Change in individual plasma concentrations relating to bone activity at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Δ Calcium (mmol/l)		Δ Phosphate (mmol/l)		Δ PTH (ng/l)		Δ Apase (mmol/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
49	0.2	0.26	0.1	0.33	48	253	120	275
50	0.21	0.02	-0.25	-0.39	10	-30	-814	-924
51	0.12	0.15	-0.08	-0.21	81	-35	19	-117
52	0.32	0.13	-0.11	-0.3	-82	-103	-174	-283
53	0.23	0.21	-0.17	0.13	-153	-163	-118	-221
54	0.09	-0.1	0.03	0.5			250	421
55								
56								
57	0.1	-0.34	0.26	0.11	197	1751	-185	225
58	-0.07	-0.04	-0.17	-0.12	-10	-26	-387	-442
59								
60	-0.03	-0.02	0.03	-0.08	10	47	-71	53
61								
62	0.32		-0.2		-161		-67	
63	-0.1	0.06	0	0.08	10	56	43	38
64								
65	0.01	0.01	-0.29	-0.46	-21	-117	-86	-177
66	-0.06	-0.06	0.09	0.5	129	6	-72	-200
67	-0.18	-0.06	0.08	-0.15	6	7	53	-51

Δ, Change in; PTH, parathyroid hormone; Apase, alkaline phosphatase

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Calcium – outside normal range (2.25-2.65 mmol/l)
 Phosphate – above normal range (> 1.7 mmol/l)
 PTH – outside normal range (12-72 ng/l)

Table 6.6.1 Change in individual iron, folate and vitamin C intakes (excluding micronutrient supplements) at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Iron (% RNI)		Δ Folate (% RNI)		Δ Vitamin C (% RNI)	
	1 year	2 year	1 year	2 year	1 year	2 year
1	32	25	-104	-82	39	-27
4	8	-20	-94	-84	260	-11
5						
6	-6	15	25	-120	183	368
7	40	52	20	21	21	15
8						
9*						
10*	5		61		153	
11*	5	15	54	103	-35	57
12						
13	49	-42	-186	-114	-1	128
14*	-54	-44	-32	-7	-122	-183
15						
16						
17*	4		-23		99	
18	9	-26	-31	-24	-127	-185
19	43	-6	-13	-44	-4	9
20*	-26	10	-24	53	-104	-73
21	18	16	-3	52	150	256
22	0		-3		-83	
23	-8	-2	-8	15	-27	-12
24	31	38	31	-7	-3	121
25	-37	-21	-17	16	63	331
26	-8	11	-19	-4	-71	65
27*	-79	-77	-140	-176	30	-61

Δ, Change in; RNI, reference nutrient intake

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Iron – final intake < 100% RNI
Folate – final intake < 100% RNI
Vitamin C – final intake < 100% RNI

Table 6.6.2 Change in individual iron, folate and vitamin C intakes (excluding micronutrient supplements) at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Iron (% RNI)		Δ Folate (% RNI)		Δ Vitamin C (% RNI)	
	1 year	2 year	1 year	2 year	1 year	2 year
28	22	20	37	30	89	159
29	14	-41	14	-20	24	41
30		-8		12		-40
31	-10	-59	-38	-71	-43	-74
32*						
33						
34	29	109	-38	-6	42	-103
35*	-10	-15	-48	-62	-234	57
36	29		-55		3	
37	47	117	123	128	-76	-210
38	-16	-36	-49	-66	78	125
39	-4	4	-17	44	-53	92
40*	-61	-38	-92	-40	-92	-116
41*	-4	-17	-17	-13	-107	42
42	-7		11		53	
43	-6	13	-36	-12	28	119
44	-13	-17	5	13	-150	-144
45	-17		-26		73	
46	29	24	17	34	7	25
47*	-55	-76	-61	-58	-121	87
48	-42	-75	-39	-104	-133	92

Δ, Change in; RNI, reference nutrient intake

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Iron – final intake < 100% RNI
Folate – final intake < 100% RNI
Vitamin C – final intake < 100% RNI

Figure 6.6 Individual plasma haemoglobin concentrations over the 2 year period between groups

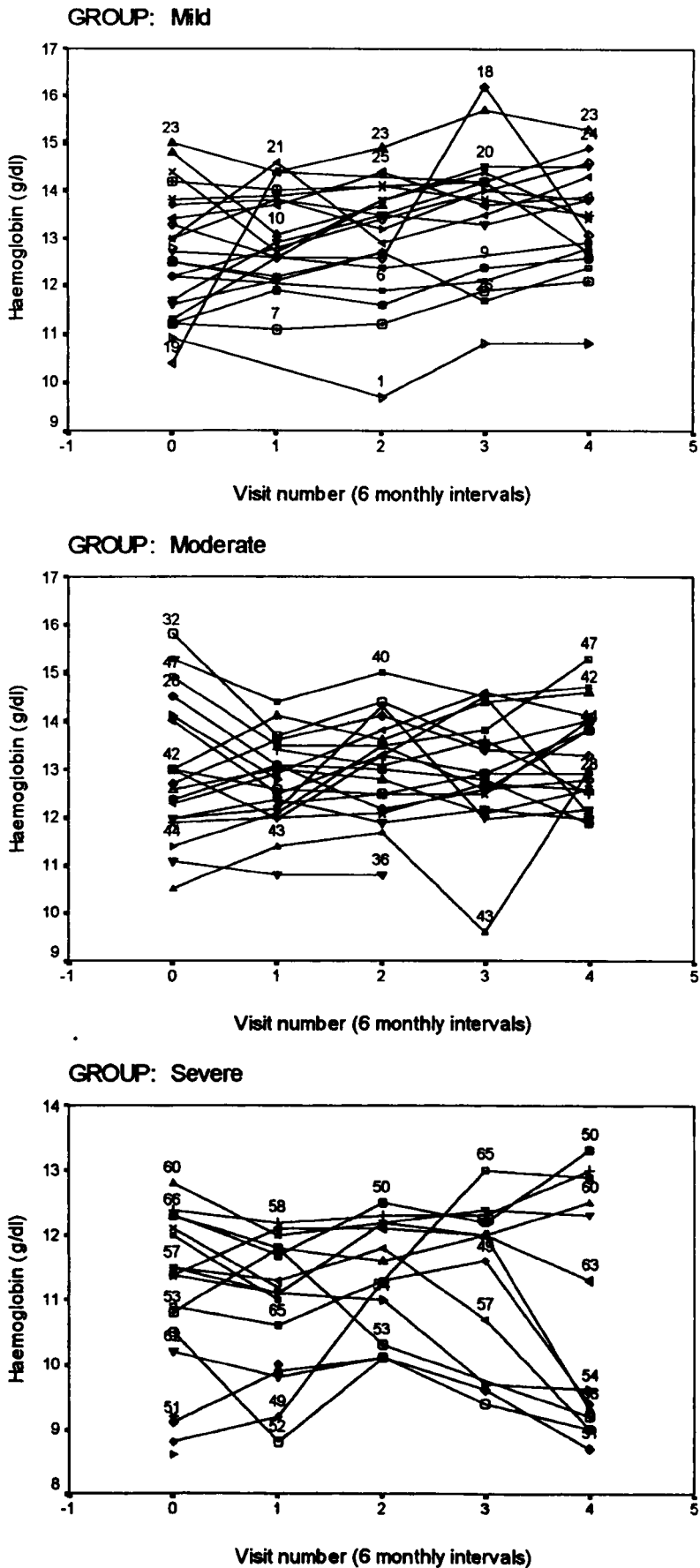


Table 6.6.5 Change in individual plasma concentrations of iron-related variables at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Haemoglobin (g/dl)		Δ % Hypochromic cells		Δ Ferritin (μ g/l)	
	1 year	2 year	1 year	2 year	1 year	2 year
1	-1.2	-0.1			-28	-6
4	1.1	1.6	-1.8	0.8		
5						
6	-0.3	0.6	3.7	-2.4		
7	0	0.9	-1.4	-0.9	0	-2
8	-0.6	-1.0	0.3	0.5	3	14
9*	0.4	1.4			8	6
10*	-1.1		1.3		50	
11*	-0.2	0	-0.3			
12						
13	1.8	2.1	0.2	0.3	13	10
14*	0.2	0.8	-0.7	-0.3	-4	2
15						
16						
17*	0.3	-0.3	0.3	0.9	3	26
18	-0.7	-0.2			1	-36
19		2.3		-30.6	27	5
20*	1.1	1.8	-0.4	-0.6	-17	-2
21	-0.1	1.3	0.6	3.1	6	0
22	0.2		0.9		-7	
23	-0.1	0.3	0.2	-1.9	3	14
24	-0.2	1.2	4.4	-0.8	-10	4
25	1.0	0.5		-0.5	-14	-21
26	0.2	-0.1	-0.1	-0.2	2	1
27*	1.2	2.4	-1.3	-1.9	6	10

Δ , Change in

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Hb concentration ≤ 10 g/dl
 Ferritin concentration > 100 μ g/l
 % Hypochromic cells > 10

Table 6.6.6 Change in individual plasma concentrations of iron-related variables at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Haemoglobin (g/dl)		Δ % Hypochromic cells		Δ Ferritin (μg/l)	
	1 year	2 year	1 year	2 year	1 year	2 year
28	-2.3	-1.7	0.1	-0.1	-4	33
29	0.2	0	-1.4		-9	-10
30	1.4	0.6	-3.5	-4.7	37	21
31	-0.5	0.8			5	-1
32*	-1.4	-1.8	-0.1	1	11	-2
33						
34					-11	-15
35*	0.2	0.7	-0.3	-0.5	-22	-29
36	-0.3		-0.5		34	
37	0.6	-0.5	-0.9	4.4	-9	89
38	0.3	-0.1			-20	-2
39	1.5	1.8	0	.4	-5	-2
40*	-0.3	-0.6	0	-0.1	10	18
41*	-0.1	0	0.2	0.1	0	-1
42	0.6	1.6	0.3	1.9	2	3
43	1.2	2.5	25.2	14.6	13	-27
44	2.1	2.4			345	221
45	-0.7	-1.9	-0.4	0.2		
46	2.3	0.2	1.2	0.8	63	6
47*	-1.4	0.4	0.2	0.1		
48					-4	-4

Δ, Change in

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Hb concentration \leq 10 g/dl
 Ferritin concentration $>$ 100 μg/l
 % Hypochromic cells $>$ 10

Table 6.7.1 Means related to the occurrence of foods as either the greatest or second greatest contributor to energy intake (% total energy intake) at baseline, 1 and 2 years

Food	Contribution	Baseline (n=60)		First year (n=53)		Second year (n=44)	
		N= (%)	Mean (SD)	N= (%)	Mean (SD)	N= (%)	Mean (SD)
Milk	Greatest	16 (27)	17.4 (7.4)	8 (15)	14.2 (4.6)	1 (2)	17.6
	Second greatest	7 (12)	11.3 (1.8)	3 (6)	9.6 (2.9)	4 (9)	8.7 (1.8)
Bread	Greatest	9 (15)	12.1 (1.7)	7 (13)	12.1 (2.5)	7 (16)	11.6 (2.7)
	Second greatest	7 (12)	11.1 (1.7)	8 (15)	9.6 (1.2)	5 (11)	12.4 (4.6)
Breakfast cereal	Greatest	0		0		3 (7)	10.4 (2.6)
	Second greatest	4 (7)	11.4 (3.6)	2 (4)	12.9 (9.5)	1 (2)	8.4
Chips	Greatest	5 (8)	16.1 (5.5)	5 (9)	14.7 (7.3)	5 (11)	16.7 (2.8)
	Second greatest	5 (8)	10.3 (2.8)	1 (2)	10.6	3 (7)	11.8 (4.6)
Crisps	Greatest	1 (2)	10.7	2 (3)	11.4 (0.2)	2 (5)	14 (1.3)
	Second greatest	6 (10)	10.5 (3.0)	3 (6)	10 (3.7)	5 (11)	10.6 (2.6)
Cakes/ biscuits	Greatest	4 (7)	12.4 (2.2)	5 (9)	12.4 (2.4)	3 (7)	18.7 (7.8)
	Second greatest	2 (3)	8.4 (3.3)	4 (8)	9 (2.1)	4 (9)	9.7 (2.1)
Pizza	Greatest	3 (5)	19.9 (9.7)	4 (8)	10.5 (2.2)	2 (5)	12.9 (4.0)
	Second greatest	4 (7)	7.6 (0.4)	3 (6)	10.2 (2.8)	4 (9)	9.8 (2.3)
Meat/fish	Greatest	0		8 (15)	14.6 (8.5)	4 (9)	14.2 (8.6)
	Second greatest	10 (17)	9.6 (2.3)	9 (17)	9.4 (2.3)	6 (14)	10.1 (3.6)
Sausages/ beefburgers	Greatest	0		2 (3)	10.6 (0.6)	1 (2)	11.4
	Second greatest	5 (8)	9.4 (2.6)	4 (8)	8.1 (1.9)	1 (2)	8.7
Drinks	Greatest	4 (7)	15.8 (5.0)	2 (4)	10.3 (3.3)	5 (11)	13 (2.5)
	Second greatest	1 (2)	9.6	6 (11)	10 (1.8)	3 (7)	10.1 (2.0)
Fats/ sugars	Greatest	4 (7)	12.8 (5.9)	3 (6)	13 (6.5)	3 (7)	16.2 (8.1)
	Second greatest	5 (8)	11.4 (1.6)	7 (13)	12.6 (3.9)	2 (5)	9.1 (1.2)
Supplements	Greatest	8 (13)	29.5 (12.3)	6 (11)	27.9 (19.4)	4 (9)	17.8 (12.4)
	Second greatest	2 (3)	14.7 (8.4)	2 (4)	13.4 (2.4)	1 (2)	16

Table 6.7.2 Means related to the occurrence of foods as either the greatest or second greatest contributor to protein intake (% total protein intake) at baseline, 1 and 2 years

Food	Contribution	Baseline (n=60)		First year (n=53)		Second year (n=44)	
		N= (%)	Mean (SD)	N= (%)	Mean (SD)	N= (%)	Mean (SD)
Milk	Greatest	21 (35)	25.4 (10)	7 (13)	23.6 (7.5)	5 (11)	20.1 (7)
	Second greatest	10 (17)	17.4 (3)	7 (13)	13.8 (4)	2 (5)	13.3 (1.6)
Cheese	Greatest	0		1 (2)	20.5	1 (2)	15.2
	Second greatest	4 (7)	16.4 (4.5)	2 (4)	16 (4.2)	2 (5)	15 (2.8)
Milk puddings, including ice-cream/ yogurts	Greatest	0		1 (2)	15.4	2 (5)	15.3 (5)
	Second greatest	3 (5)	12.4 (6)	2 (4)	14 (4.8)	1 (2)	14.8
Pizza	Greatest	4 (7)	21.9 (13.3)	2 (4)	13.2 (4.7)	2 (5)	19.1 (9)
	Second greatest	2 (3)	8.3 (1.4)	1 (2)	16.3	6 (14)	13 (2.5)
Bread	Greatest	4 (7)	23.8 (8.7)	3 (6)	18.1 (3.5)	2 (5)	21.1 (7.2)
	Second greatest	6 (10)	12.7 (1.6)	5 (9)	11.5 (0.7)	6 (14)	11.1 (0.8)
Fresh meats	Greatest	17 (28)	20.3 (6.6)	23 (43)	21.5 (6.4)	15 (34)	20.6 (6.9)
	Second greatest	19 (32)	14.1 (3.1)	7 (13)	14.6 (5.7)	12 (27)	13.2 (3.1)
Sausages/ beefburgers	Greatest	3 (5)	18.2 (5.5)	7 (13)	20.3 (5.1)	3 (7)	18.3 (4.1)
	Second greatest	5 (8)	13.4 (4)	6 (11)	13.2 (2.7)	3 (7)	15 (5.6)
Stews/ casseroles/ curries	Greatest	6 (10)	19.9 (6.6)	4 (8)	22 (3.7)	11 (21)	20.9 (5.7)
	Second greatest	4 (7)	12 (3)	11 (21)	15.4 (3.8)	6 (14)	11.1 (0.8)
Fish	Greatest	2 (3)	19 (1.6)	0		3 (7)	19.1 (8.9)
	Second greatest	4 (7)	13.9 (4)	4 (8)	12.1 (1.9)	1 (2)	14

Table 6.7.3 Means related to the occurrence of foods as either the greatest or second greatest contributor to sodium intake (% total sodium intake) at baseline, 1 and 2 years

Food	Contribution	Baseline (n=60)		First year (n=53)		Second year (n=44)	
		N= (%)	Mean (SD)	N= (%)	Mean (SD)	N= (%)	Mean (SD)
Bread	Greatest	21 (35)	17.1 (5)	15 (28)	18.3 (4.3)	10 (23)	20.9 (4.5)
	Second greatest	11 (18)	13.1 (3.3)	6 (10)	16.6(4.5)	7 (16)	14.4 (2.3)
Breakfast cereal	Greatest	3 (5)	19.1 (4.6)	1 (2)	12.3	1 (2)	14.7
	Second greatest	1 (2)	14.9	4 (8)	13.4 (1.9)	2 (5)	17.9 (0.8)
Crisps	Greatest	1 (2)	27.9	1 (2)	15.6	2 (5)	16.5 (4.4)
	Second greatest	4 (7)	15.1 (2)	6 (10)	15.5 (3.5)	3 (7)	15.4 (1.3)
Gravy, sauces, soup	Greatest	3 (5)	22.5 (6.7)	2 (4)	19.6 (4.5)	1 (2)	18.6
	Second greatest	5 (8)	15.9 (2)	2 (4)	15.1 (0.6)	3 (7)	14.3 (4.9)
Baked beans/ tinned spaghetti	Greatest	4 (7)	23.3 (6.3)	7 (13)	20.8 (5.9)	9 (20)	20.3 (3.8)
	Second greatest	8 (13)	13.4 (3.6)	8 (15)	14.5 (5.8)	7 (16)	11.9 (2.1)
Sausages/ beefburgers	Greatest	3 (5)	16.3 (3)	3 (16)	22.5 (10.1)	4 (9)	17.3 (3.4)
	Second greatest	4 (7)	17 (5.6)	7 (13)	12.7 (2.8)	2 (5)	14.3 (0.1)
Pizza	Greatest	8 (13)	20.6 (9.5)	6 (10)	18.1 (3.1)	4 (9)	21.2 (7.4)
	Second greatest	1 (2)	9.2	5 (9)	15.8 (4.1)	5 (11)	14.5 (2.9)
Stews/ casseroles/ curries	Greatest	3 (5)	25.7 (17.4)	11 (21)	19.2 (4.8)	7 (16)	22.4 (11.5)
	Second greatest	2 (3)	11.9 (1.8)	5 (9)	11.3 (2.3)	3 (7)	14.5 (4.5)
Cheese	Greatest	0		1 (2)	20.3	1 (2)	8.2
	Second greatest	1 (2)	10	1 (2)	15.3	1 (2)	17.7
Ham/ bacon	Greatest	2 (3)	19 (1.1)	3 (6)	24.5 (8.5)	2 (5)	15.1 (2)
	Second greatest	6 (10)	13.5 (2.5)	0		3 (7)	14.7 (6.1)
Milk	Greatest	6 (10)	16.7 (3.1)	1 (2)	15.1	0	
	Second greatest	3 (5)	14.4 (3.3)	0		1 (2)	15.3

Table 6.7.4 Means related to the occurrence of foods as either the greatest or second greatest contributor to phosphate intake (% total phosphate intake) at baseline, 1 and 2 years

Food	Contribution	Baseline (n=60)		First year (n=53)		Second year (n=44)	
		N= (%)	Mean (SD)	N= (%)	Mean (SD)	N= (%)	Mean (SD)
Milk/ milkshake	Greatest	36 (60)	30.1 (12.1)	22 (42)	24.1 (8.9)	18 (41)	21.9 (11.5)
	Second greatest	5 (8)	17.3 (5.5)	12 (23)	13.7 (3.2)	9 (20)	13.4 (3.2)
Milk puddings including ice-cream/ yogurts	Greatest	0		3 (6)	20.9 (1.9)	2 (5)	15.9 (4.5)
	Second greatest	6 (10)	12 (4.3)	3 (6)	13.2 (1.2)	2 (3)	13.9 (6.3)
Cheese	Greatest	6 (10)	20.9 (9.3)	5 (9)	18.1 (6.6)	7 (13)	17 (4.4)
	Second greatest	5 (8)	10.9 (3)	4 (8)	10.7 (2.2)	1 (2)	10.6
Eggs	Greatest	0		0		0	
	Second greatest	2 (3)	8.5 (0.4)	0		2 (3)	12.6 (1.8)
Meat/ fish	Greatest	5 (8)	10.1 (2.6)	15 (28)	16.5 (4.6)	10 (23)	16.3 (5.1)
	Second greatest	11 (18)	13.8 (5.2)	14 (26)	12.1 (3.5)	10 (23)	13.1 (3.4)
Baked beans/ pulses	Greatest	1 (2)	23.1	0		0	
	Second greatest	3 (5)	14.7 (1.2)	1 (2)	13.3	0	
Cola	Greatest	3 (5)	22.7 (6.3)	1 (2)	19.9	1 (2)	16.4
	Second greatest	1 (2)	14.6	2 (4)	9.4 (1.3)	1 (2)	12.4
Pizza	Greatest	1 (2)	35.8	0		1 (2)	17.5
	Second greatest	5 (8)	12.7 (4.1)	7 (13)	15 (5.2)	5 (11)	11.6 (2.7)
Bread/ breakfast cereals & other flour products	Greatest	4 (7)	19.7 (6.1)	3 (6)	14.7 (2.3)	4 (9)	21.2 (5.4)
	Second greatest	14 (23)	10.2 (4)	7 (13)	12.6 (6.5)	9 (20)	13.8 (5.2)
Chips/ potato waffles	Greatest	0		1 (2)	23.6	1 (2)	24.9
	Second greatest	2 (3)	13.2 (1.6)	1 (2)	15.4	4 (9)	10.2 (1.3)
Supplements	Greatest	2 (3)	35.1 (17.5)	2 (3)	36 (30.9)	0	
	Second greatest	3 (5)	15.7 (5.7)	1 (2)	11.6	1 (2)	8.1

Table 6.7.5 Means related to the occurrence of foods as either the greatest or second greatest contributor to calcium intake (% total calcium intake) at baseline, 1 and 2 years

Food	Contribution	Baseline (n=60)		First year (n=53)		Second year (n=44)	
		N= (%)	Mean (SD)	N= (%)	Mean (SD)	N= (%)	Mean (SD)
Milk/ milkshake	Greatest	41 (68)	43.9 (16.2)	35 (66)	35.7 (13.4)	27 (61)	32.6 (14.2)
	Second greatest	9 (15)	18 (5.6)	10 (19)	20.2 (5.5)	7 (16)	19.7 (2.8)
Milk puddings including ice-cream/ yogurts	Greatest	0		5 (9)	29.7 (7.2)	1 (2)	21.7
	Second greatest	10 (17)	14.2 (6.2)	4 (8)	14.3 (7.4)	6 (14)	13.1 (5.3)
Cheese	Greatest	7 (12)	30.6 (9.4)	6 (11)	25.3 (7.5)	5 (11)	30.2 (9.6)
	Second greatest	13 (22)	15.5 (4.2)	12 (23)	16.1 (4.3)	4 (9)	19.9 (2.6)
Pizza	Greatest	4 (7)	26.9 (16.2)	4 (8)	27.3 (7.4)	6 (14)	26 (7.7)
	Second greatest	7 (12)	16.3 (7.2)	6 (11)	20.6 (5)	6 (14)	18.8 (5.6)
Other milk/ cheese based meals e.g. lasagne	Greatest	0		2 (4)	21.1 (3.2)	0	
	Second greatest	1 (2)	10.7	4 (8)	13.9 (6.5)	2 (5)	16.1 (4.2)
Bread	Greatest	3 (5)	22.1 (11.7)	0		2 (5)	35.1 (9.9)
	Second greatest	10 (17)	15.4 (6.6)	9 (17)	13.3 (4.4)	11 (25)	13.2 (4.2)
Other flour products	Greatest	1 (2)	32.7	0		1 (2)	18.8
	Second greatest	2 (3)	10.2 (5.7)	2 (4)	7 (4.2)	2 (5)	16 (0.9)
Baked beans	Greatest	0		0		1 (2)	8.5
	Second greatest	2 (3)	10.5 (0.7)	1 (2)	9.9	0	
Chocolate & chocolate products	Greatest	0		0		0	
	Second greatest	3 (5)	11.3 (0.4)	2 (4)	14.5 (0.4)	3 (7)	16.9 (5.8)
Supplements	Greatest	2 (3)	48.1 (39.8)	1 (2)	81.6	0	
	Second greatest	2 (3)	11.6 (5.2)	2 (4)	16.2 (3.2)	1 (2)	8

Table 6.7.6 Means related to the occurrence of foods as either the greatest or second greatest contributor to iron intake (% total iron intake) at baseline, 1 and 2 years

Food	Contribution	Baseline (n=60)		First year (n=53)		Second year (n=44)	
		N= (%)	Mean (SD)	N= (%)	Mean (SD)	N= (%)	Mean (SD)
Breakfast cereal	Greatest	26 (43)	31.8 (9)	24 (45)	28.1 (14.3)	23 (52)	29.6 (10.9)
	Second greatest	5 (8)	14.6 (3.6)	10 (19)	13.4 (5.1)	7 (16)	12.6 (5.9)
Bread	Greatest	14 (23)	22 (8.2)	10 (19)	20.7 (6.9)	6 (14)	23 (5.2)
	Second greatest	19 (32)	13.8 (4.2)	11 (21)	12.8 (3.8)	11 (25)	12.7 (2.5)
Other flour products	Greatest	1 (2)	19.3	0		2 (5)	21.6 (8.8)
	Second greatest	7 (12)	12.7 (3.8)	3 (6)	17 (4.3)	2 (5)	12.4 (0.1)
Red meat	Greatest	6 (10)	15.8 (2.9)	9 (17)	19.5 (5.7)	7 (16)	18.1 (5.3)
	Second greatest	9 (15)	10.4 (3.6)	19 (36)	11.2 (3)	8 (18)	13 (2.8)
Baked beans	Greatest	2 (3)	27.3 (7.9)	5 (9)	22.3 (6.2)	3 (7)	13.9 (1.1)
	Second greatest	4 (7)	13.4 (5.1)	4 (8)	13.4 (5.1)	5 (9)	14 (5.9)
Eggs	Greatest	1 (2)	10.6	0		0	
	Second greatest	1 (2)	11	1 (2)	7.4	2 (5)	12.7 (1.1)
Potato & potato products	Greatest	2 (3)	22 (4.3)	1 (2)	31	2 (5)	18.2 (6.9)
	Second greatest	8 (13)	13 (3)	3 (6)	11.5 (6.2)	6 (14)	13 (3.4)
Pizza	Greatest	1 (2)	14.6	0		0	
	Second greatest	2 (3)	18.4 (13.4)	1 (2)	15.4	0	
Supplements	Greatest	1 (2)	84.7	1 (2)	85.1	0	
	Second greatest	0		0		0	

Table 6.7.7 Means related to the occurrence of foods as either the greatest or second greatest contributor to vitamin C intake (% total vitamin C intake) at baseline, 1 and 2 years

Food	Contribution	Baseline (n=60)		First year (n=53)		Second year (n=44)	
		N= (%)	Mean (SD)	N= (%)	Mean (SD)	N= (%)	Mean (SD)
Orange juice	Greatest	12 (20)	56.5 (16.8)	9 (17)	55.5 (14.5)	12 (27)	48.7 (17.5)
	Second greatest	7 (12)	25.3 (9.2)	0		3 (7)	26.2 (9.8)
Apple juice	Greatest	3 (5)	35.8 (9.6)	1 (2)	18.8	1 (2)	56.4
	Second greatest	0		1 (2)	35.4	2 (3)	12.5 (6)
Blackcurrant squash	Greatest	9 (15)	50.3 (12.4)	6 (11)	55 (13.9)	7 (16)	38.7 (10.2)
	Second greatest	2 (3)	28.6 (6.1)	5 (9)	23.1 (9.3)	4 (9)	26.5 (9)
Other squashes	Greatest	6 (10)	45.4 (15.3)	8 (15)	46.3 (12.9)	6 (14)	54.1 (19.1)
	Second greatest	6 (10)	18.7 (8.6)	6 (11)	19.4 (7.4)	4 (9)	26.5 (9)
Milk	Greatest	1 (2)	28.4	1 (2)	84.5	1 (2)	46.2
	Second greatest	5 (8)	10.7 (4.7)	1 (2)	12.9	0	
Oranges/ satsumas	Greatest	4 (7)	57.8 (22.5)	7 (13)	43.4 (13.2)	4 (9)	31.6 (5.8)
	Second greatest	2 (3)	13.8 (1.8)	1 (2)	21.7	2 (3)	19 (0.6)
Other fruit	Greatest	3 (5)	41.7 (19.7)	6 (11)	34.7 (15.9)	1 (2)	36.6
	Second greatest	4 (7)	24 (10.6)	5 (9)	14.4 (3.7)	4 (9)	12.5 (5.7)
Vegetables	Greatest	6 (10)	30.7 (9.4)	4 (8)	28.2 (7.5)	0	
	Second greatest	6 (10)	18.1 (7.9)	6 (10)	19.5 (3.5)	9 (20)	16.6 (6.2)
Breakfast cereal	Greatest	0		0		1 (2)	51.6
	Second greatest	2 (3)	17.4 (10.7)	4 (8)	11.7 (2.9)	0	
Potato & potato products	Greatest	14 (23)	37.4 (19.1)	8 (15)	30 (8.7)	10 (23)	38.6 (10.4)
	Second greatest	23 (38)	17.1 (8.1)	21 (40)	18.4 (8.9)	14 (32)	18.7 (7.1)

Table 6.8.1 Change in individual markers of protein status at 1 & 2 years compared to baseline in children originally classified with mild CRI

Patient number	Δ Proteinuria (g/mmol)		Δ Albumin (BCP) (g/l)		Δ Albumin (ITM) (g/l)		Δ Prealbumin (g/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
1		-0.01	0	3	0.7		-0.02	0.03
4	0	0.01	1	0	-4.8		-0.02	
5								
6	0	0	0	1	-5.3	2.2	0.01	0.05
7	0	0	-1	3	-3.3	1.7	0	0.03
8	0	0.03	-2	-2	2.6	-3.4	0	0.01
9*	0	0	-1	1	3.1	4.1	0.09	0.15
10*	0		7		-4.7		0.07	
11*	0	0						
12								
13	0	0	3	6	2.5	16.5	0.13	0.16
14*	0.01	0.01	2	2	-0.6		0.01	
15								
16								
17*	0	0	-1	-1	-3.3		-0.01	
18	0.01	0.01	1	3	4.6	6.6	0.04	0.14
19	0	0	-1	-3			0.12	
20*			2	2	-3.0	-4.0	0.06	0.1
21	0	0	3	0	-7.0	-9.0	0	0.04
22	-0.01		1					
23	-0.01	0.13	-5	-7	8.0	0	0.09	0.1
24	0.17	-0.09	-11	-9	0	-5.0	0.03	0.03
25	0	0	1	1	12.0	6.0	0.11	0.02
26	0.06	0.09	-6	-6	-1.0	-3.0	0.02	0.08
27*	0	0	3	1		-6.0		0.1

Δ, Change in; Proteinuria based on urine protein: creatinine ratio (g/mmol)

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Urine protein: creatinine ratio ≥ 0.1 g/mmol
Albumin ≤ 35 g/l

Table 6.8.2 Change in individual markers of protein status at 1 & 2 years compared to baseline in children originally classified with moderate CRI

Patient number	Δ Proteinuria (g/mmol)		Δ Albumin (BCP) (g/l)		Δ Albumin (ITM) (g/l)		Δ Prealbumin (g/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
28	0.01	0.02	6	6	-7.8	-4.2	-0.02	0.03
29	0	0	3	3	2.0	5.5	0.15	0.19
30	0	0.14	1	0	-1.0	-7.0	0.21	0.2
31	0	0	1	4	-8.1	-0.1	0.06	0.06
32*	0	0.08	1	0	-4.2	-1.2	0.25	0.26
33								
34	-0.04	-0.12	1	3		8.1	0.05	0.14
35*	0	0	3	7				
36	0.43		-2					
37	-0.25	-0.34	7	-7	4.0	-7.0	-0.07	-0.07
38	0	0	5	5	4.0	20.0	0.09	0.13
39	0	0	3	1	8.0	20.0	0.07	0.04
40*	0.08	0.08	-2	-1	3.0	2.0	0.03	0.12
41*	-0.01	-0.01	-2	-3	4.0	-3.0	0.06	0.1
42	0.01	0.02	0	-1	17.0	1.0	-0.02	0.03
43	0.07	0.1	2	0	1.0	-2.0	0.09	0.06
44	0	0	-1	1	10.0	6.0	0.14	0.11
45	0.11	0.08	-4	-3	9.0	1.0	0.06	0.09
46	0	0.11	1	0			0.05	-0.01
47*	0	0.01	-4	-4	-4.0	-3.0	-0.02	0.12
48	-0.01	-0.01	-3	-5	6.0	-7.0	0.04	0.14

Δ, Change in; Proteinuria based on urine protein: creatinine ratio (g/mmol)

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Urine protein: creatinine ratio ≥ 0.1 g/mmol
Albumin ≤ 35 g/l

Table 6.8.3 Change in individual markers of protein status at 1 & 2 years compared to baseline in children originally classified with severe CRI

Patient number	Δ Proteinuria (g/mmol)		Δ Albumin (BCP) (g/l)		Δ Albumin (ITM) (g/l)		Δ Prealbumin (g/l)	
	1 year	2 year	1 year	2 year	1 year	2 year	1 year	2 year
49	0	0.01	3	7	3.9	3.5	0.09	0.13
50	-0.02	-0.01	5	6	2.1	-4.8	0.05	0
51	-0.05	-0.04	2	3	-2.6	-5.3	0.03	0.05
52	0	-0.02	1	0				
53	0.01	0.01	-2	-4	-6.7		0.12	
54	0.02	0.07	0	-2				
55								
56								
57	0.03	-0.03	-2	-5	-2.1	3.9	0.09	0.07
58	-0.07	-0.05	-4	0	0.5	-0.5	0.01	0.04
59								
60	0.02	0.04	-1	0	2.5	10.5	0	0.06
61								
62	0.2		-2		3.0		0.09	
63	0.03	0.17	3	-1	7.0	-5.0	0.11	0.15
64								
65	0	0	2	6	10.0	-3.0	-0.01	0.03
66	-0.11	-0.26	-2	1	12.0	24.0	0.07	0.08
67	-0.08	-0.08	3	2		3.0		0.16

Δ, Change in; Proteinuria based on urine protein: creatinine ratio (g/mmol)

* Those highlighted represent children who were advised to reduce rather than increase or maintain their energy intake

Figures in bold represent: Urine protein: creatinine ratio ≥ 0.1 g/mmol
Albumin ≤ 35 g/l

Appendix 4

Dietary information for children with CRI

Why is a

SPECIAL DIET

necessary?

Kidneys normally remove waste products such as phosphate, potassium, urea and extra fluid from your body. These waste products and fluids come from foods you eat and liquids you drink. Diet is important to help control blood levels of phosphate, potassium and urea whilst making sure that your child gets enough energy and protein to grow and gain weight.

Dietary advice may change with time and will depend upon your child's growth and body weight, blood results and appetite. You may be asked to record the food and drinks that your child takes over a period of 2 to 4 days to provide the dietitian with extra information.

The dietary advice is just as important as the medications that your child may be prescribed.

General aims of the special diet

■ PROVIDE ENOUGH:

Energy and Protein
Vitamins and Minerals
Dietary Fibre

■ REDUCE INTAKE OF:

Salt (sodium)
Potassium
Phosphate

Drinks may have to be reduced in children who produce little urine.

Dietary advice will be provided as required.

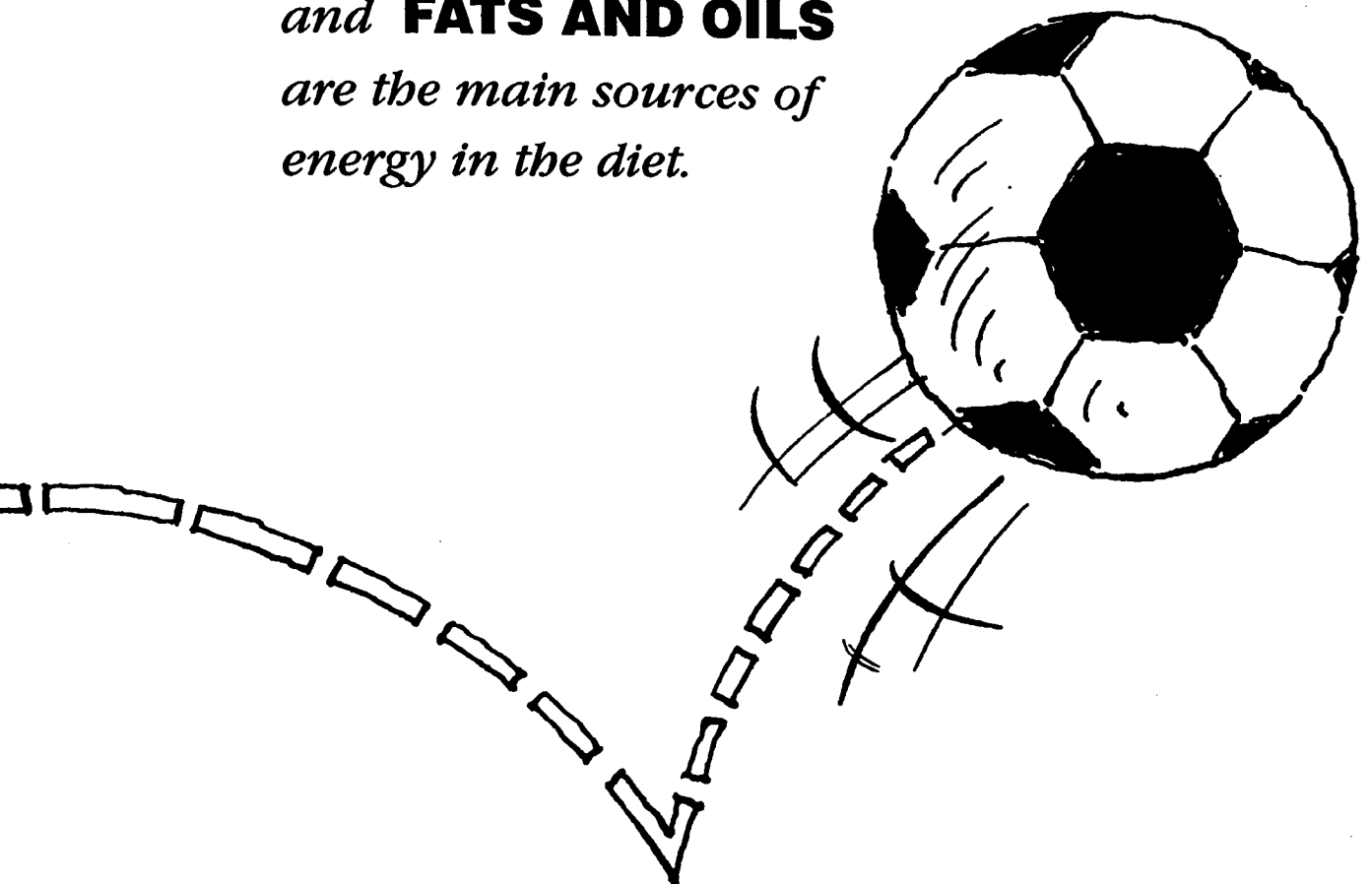
ENERGY

The body converts food into energy which is then used or stored.

The amount of energy is measured in calories (kcal). Your child will need enough energy in the diet to grow and lead a normal active life.

CARBOHYDRATES

*(starches and sugars),
and **FATS AND OILS**
are the main sources of
energy in the diet.*

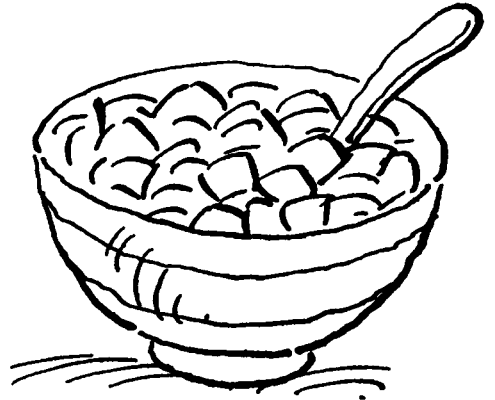


CARBOHYDRATE

Starch

Eat plenty of:

- ✓ **Breakfast cereals**
- ✓ **Bread, rolls**
- ✓ **Chapatis, pitta bread**
- ✓ **Potatoes**
- ✓ **Rice, noodles**
- ✓ **Spaghetti, other pasta**



Wholemeal bread & wholewheat cereals contain more dietary fibre. They are also a good source of vitamins and minerals but in some cases restrictions may be necessary.

Sugar

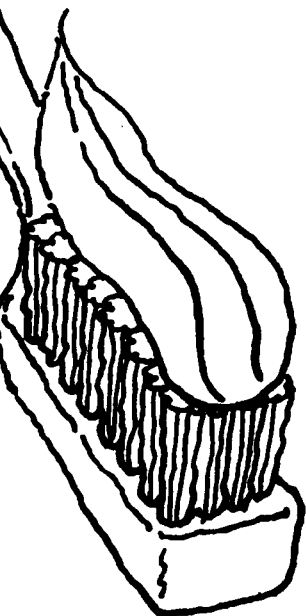
For extra energy have:

- ✓ **Sugar**
- ✓ **Jam, marmalade, honey, sweets, jellies, syrup**
- ✓ **Sugary squashes, fizzy drinks, Lucozade**
- ✓ **Cakes and biscuits**

Excess sugary foods should be avoided if your child starts to gain too much weight.

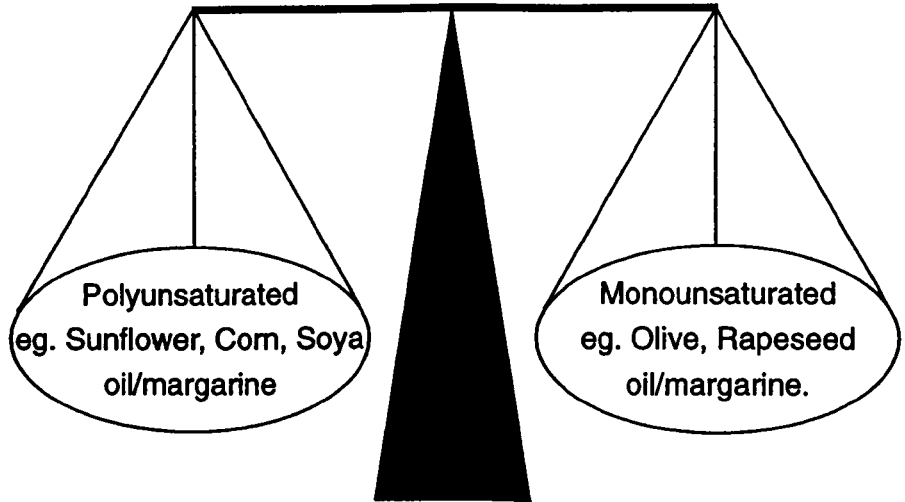
NOTE - If you are advised to use more sugar, try to protect your teeth by having it at mealtimes and snacks only.

Remember to clean your teeth at least twice a day and avoid sugary drinks after you have cleaned your teeth at night. Remember to see your dentist regularly.



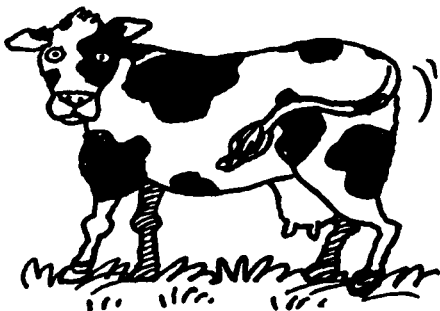
FATS & OILS

Fats/oils can be classified into 3 groups; **saturated, monounsaturated and polyunsaturated.** The balance between the type of fats is important for a healthy heart.



● *Try to have a balance between polyunsaturated and monounsaturated fats by choosing an oil of one fat type and a spreadable fat of the other eg. sunflower margarine and olive oil.*

A high intake of saturated fat tends to raise the blood cholesterol level, increasing the risk of heart disease for the future.



Try to avoid:
*Butter/ghee
Lard/suet
Fat on meat*

For example, try to use sunflower margarine instead of butter or lard for mixing cakes, biscuits and pastry.

FATS & OILS

Increasing fat

If your child is not eating well, try to offer more high fat foods to provide more energy (calories).

● *Use plenty of mono/polyunsaturated oils and margarines by:*

- *Spreading thickly on bread/toast*
- *Adding to potatoes, pasta, vegetables*
- *Frying food where possible*

● *Eat more biscuits, cakes, puddings, pastry products - sweet/savoury*

Reducing fat

If your child needs to lose weight, try to use lower fat foods to reduce energy (calorie) intake.

● *Use as little added fat as possible by:*

- *Spreading thinly on bread/toast*
- *Avoid adding to other foods*
- *Grilling/boiling/baking foods*

● *Eat less biscuits, cakes, pastries.*

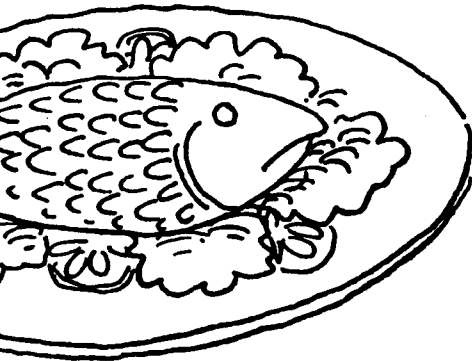
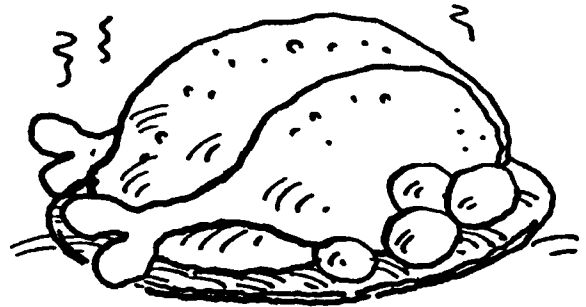
Have fruit or jelly instead



PROTEIN

Protein is needed for growth, building muscles and the repair of tissues. Urea is a waste product of protein digestion which is normally removed by the kidneys. When your kidneys don't work so well, the amount of protein in the diet may need to be reduced, as too much protein will increase the urea level in the blood.

Animal sources of protein:



- ✓ **Meat**
- ✓ **Poultry eg. chicken, turkey**
- ✓ **Fish**
- ▲ **Dairy products: milk, eggs yogurt, fromage frais, cheese.**

PROTEIN

✓ Peas, Beans and Lentils (pulses)

✓ Tofu and other soya products

✓ Quorn

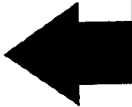
▲ Nuts

▲ Dairy products and nuts contain a lot of phosphate or potassium which may need to be restricted.

Try to have smaller portions of these protein foods and keep them to twice a day.

For example:

Vegetable sources of protein:



PHOSPHATE

Calcium and phosphate are both important for the growth and development of strong bones. Healthy kidneys usually get rid of phosphate that the body doesn't need. However, when your kidneys don't work so well, the phosphate level starts to increase in the blood. It is important to prevent this as high blood phosphate levels can prevent your child's bones from growing properly.

Dietary advice to reduce phosphate and in some cases the prescription of phosphate binders, can help to prevent this problem.

Restrict dairy products to:

Milk per _____

Cheese per _____

Eggs per _____

Yogurt/Fromage Frais per _____



● 1 yogurt/2 small fromage frais, 2 scoops, icecream or milk puddings eg. custard, rice pudding is equivalent to (200ml) 1/3rd pint milk.

● Cottage cheese and full fat cream cheese eg. Philadelphia contain about half the amount of phosphate compared to other cheeses.

● If the milk allowance is not enough, you can use a milk substitute such as:

PHOSPHATE

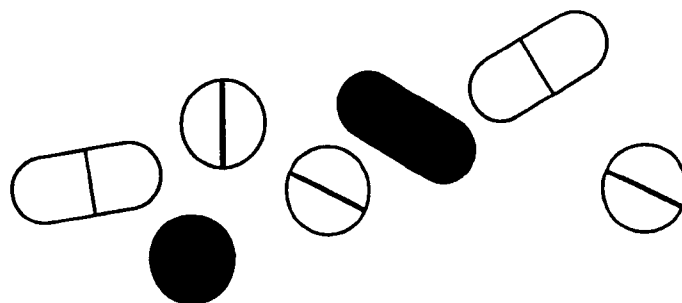
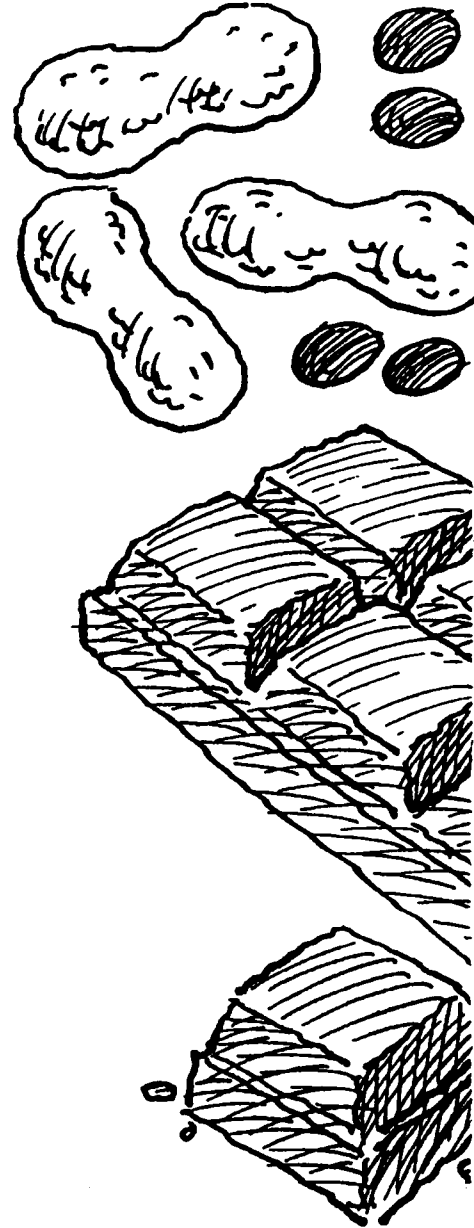
Other foods high in phosphate to limit:

- ▲ *Nuts, marzipan and peanut butter*
- ▲ *Cocoa and chocolate*
- ▲ *Cola drinks*
- ▲ *Wholegrain foods*

Medications to help reduce phosphate in the blood:

Phosphate binders: The most common ones are made from calcium carbonate. They should be chewed with meals as they bind to the phosphate in food, stopping some of it from being absorbed into the body.

A special form of **Vitamin D** may be prescribed to help maintain healthy bones.



SALT

Salt (sodium) may make your body retain water and it can contribute to high blood pressure. Salt also makes you thirsty.

Salt intake is usually restricted to a NO ADDED SALT DIET. You should avoid adding salt to food at the table and limit foods that are very high in salt.

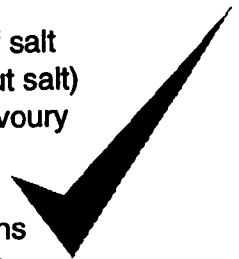
Salty foods to avoid:

Crisps, nuts and savoury snacks
Tinned and packet soups
Pot savouries
Other tinned foods with added salt
Smoked meats and fish
Bacon, sausages and other processed meats
Cheese
Marmite, Bovril, pickles, sauces and chutneys.



Lower salt alternatives:

Herbs and spices instead of salt
Salt 'n' Shake crisps (without salt)
Sweet snacks instead of savoury
Unsmoked meats and fish
* Lower salt tinned products
eg. reduced salt baked beans
Fresh and homemade foods



* Many processed/manufactured foods are very high in salt and even lower salt varieties can still be high.

A weekly allowance may be agreed with the dietitian of :

If you need to reduce your potassium intake

● ***Salt 'n' shake crisps are potato crisps and so may not be suitable as they are high in potassium.***

● **Do not use salt substitutes as they are usually high in potassium. Also check that lower salt alternatives such as bread and tinned products do not contain potassium chloride (eg. Lo Salt).**

IRON

Your child is likely to become anaemic if they have a low intake of iron or if their requirement for iron is increased. You should try to offer foods that are high in iron as part of a balanced diet. An iron supplement may also need to be prescribed by your doctor.



Foods high in Iron:

Beef/lamb/pork - all forms eg. roast, minced, *corned beef, ham, meat paste.

Fish - fish paste, oily fish eg. *sardines

*Eggs

Pulses (peas, beans eg. baked beans, kidney beans and lentils)

Green vegetables eg. green beans, cabbage, broccoli.

Breakfast cereals fortified with iron

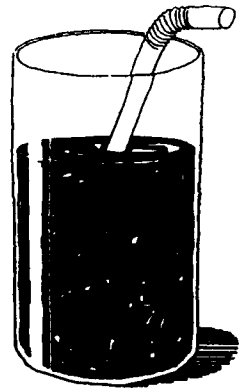
*Wholemeal bread

*Dried fruit eg. sultanas, apricots

*These foods may be restricted if you are following advice to reduce potassium and phosphate

IRON & VITAMIN C

■ *Iron from cereal products is better absorbed in the presence of vitamin C. Iron absorption can be increased by having a drink high in vitamin C or fresh fruit at times when you have wholemeal bread or fortified breakfast cereals.*

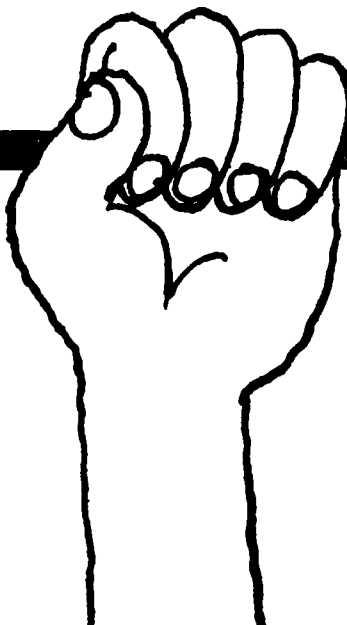


■ *Blackcurrant squashes such as Ribena are good sources of vitamin C and may be used in moderation.*

▲ *Drinking tea with food should be discouraged as it reduces the amount of iron absorbed.*



If on overnight feeding, do not add iron to the feed but give as a bolus beforehand.



Give iron and vitamin supplements together and ideally not with food or phosphate binders.

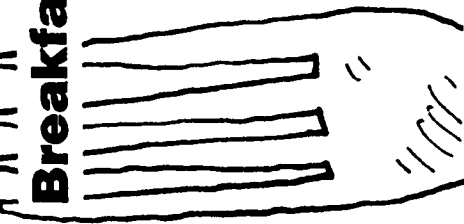
So what can

MY CHILD

eat?

Breakfast

- Breakfast cereal with milk
- Sugar
- Toast with margarine and jam

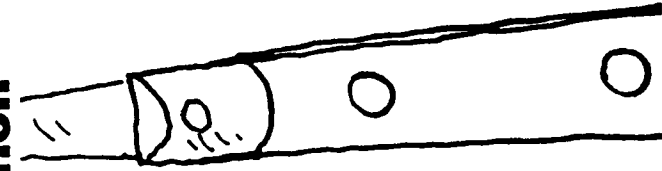


Mid-morning

- Biscuits

Lunch

- Cold meat/fish eg ham, chicken, tuna, cottage cheese
- Bread and margarine (sandwich or with a salad)
- Cake, biscuit
- Apple/pear/satsuma



So what can

MY CHILD

eat?

- Toast, biscuit or fruit

Mid-afternoon

- Meat, fish, pulses etc.

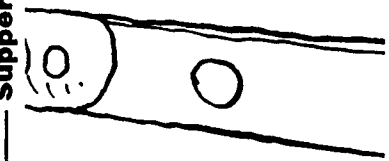
Evening

- Potatoes (boiled/mashed preboiled chips/roast) or
- Rice, pasta, chapati
- Vegetables

- Fruit pie/ crumble/ sponge
- Custard/milk pudding or jelly, tinned fruit

- Toast, biscuit, breakfast cereal with milk

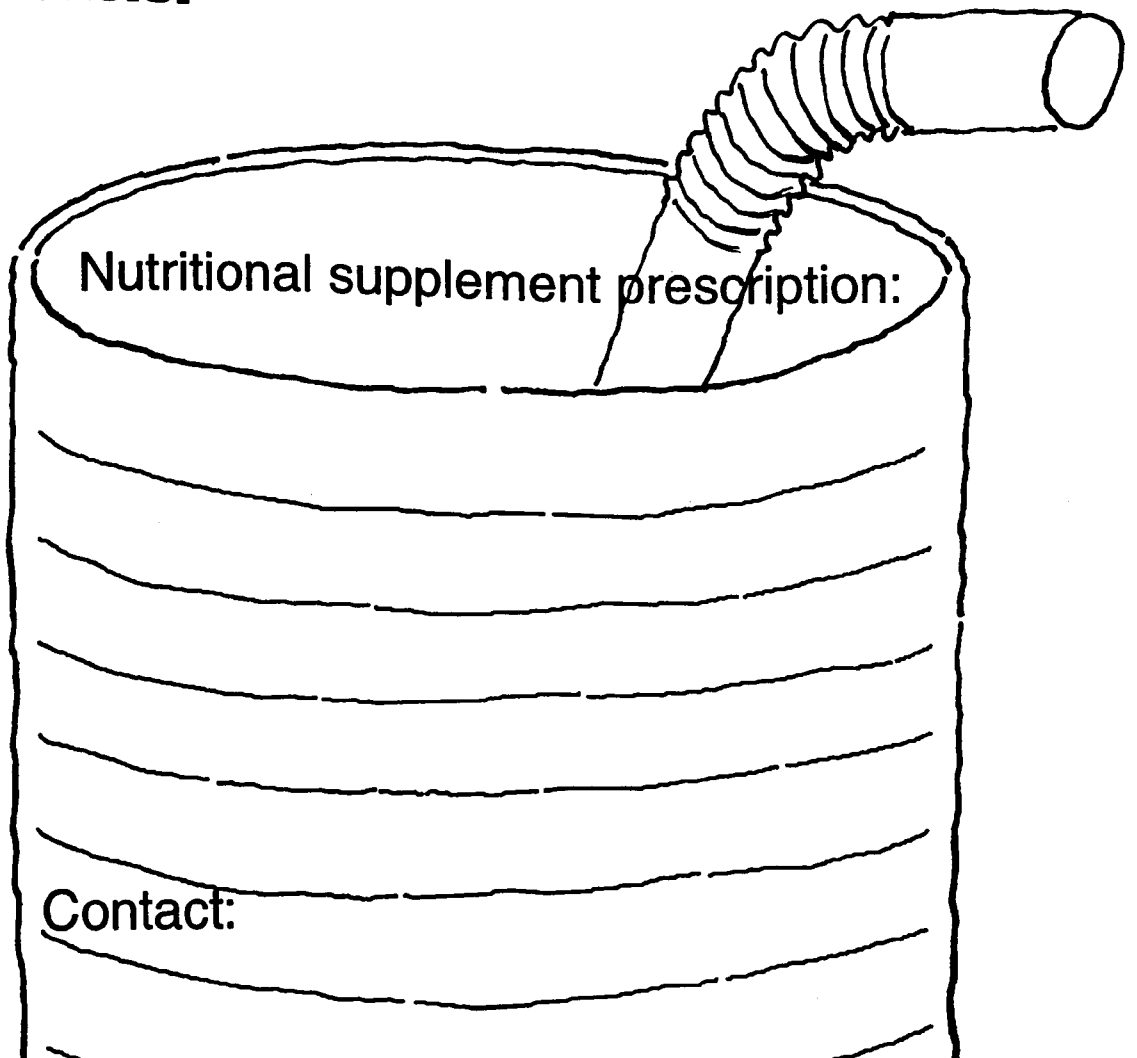
Supper



Nutritional

SUPPLEMENTS

When your child's appetite is poor, nutritional supplements may be required to maintain their weight gain and growth. There are a range of nutritional supplements available which can be prescribed for your child. These will be recommended by the dietitian on an individual basis.



EXERCISE...

- *Try not to forget that exercise and everyday activities are an important part of staying fit and healthy. Exercise is important for the development of muscles and healthy bones and may help to improve your child's appetite.*

Exercise suggestions:

- ✓ Walk or cycle to and from school
- ✓ Use stairs rather than lifts
- ✓ Try to join in school sports and activities
 - ✓ Swimming
- ✓ Playing or cycling with friends after school
- ✓ Roller blading, skateboarding, football, discos
 - ✓ Walking with the family at weekends

- *Try to reduce the amount of time spent sitting inside watching television or playing computer games.*

...is good for you

Dietary advice for

Nurseries, Schools & Colleges

for children and young people with chronic renal failure

Name of child _____

Dietitian _____

Contact No. _____

Kidneys normally remove waste products and fluid from the body. A special diet low in phosphate, salt and sometimes potassium is necessary in children with chronic renal failure. These levels would otherwise accumulate in the blood, which may affect the child's growth and well-being.

A prescribed diet will be followed at home and therefore we try to allow them a 'near normal' diet at school. The following provides a guide to the level of restriction likely to be necessary.

Phosphate

Dairy products, cola and chocolate are rich sources of phosphate and need to be restricted.

Each child will be given an individual prescription as described below. Some children may be prescribed a milk substitute low in phosphate.

Individual allowances

	 <p>Dairy products: Milk/milkshakes Yoghurts/fromage frais Milk puddings and custard Cheese</p> <hr/> <p>Chocolate Cola</p>
--	---

Medication

Phosphate binders may be prescribed and should be taken at every mealtime.

The name of the phosphate binder is _____

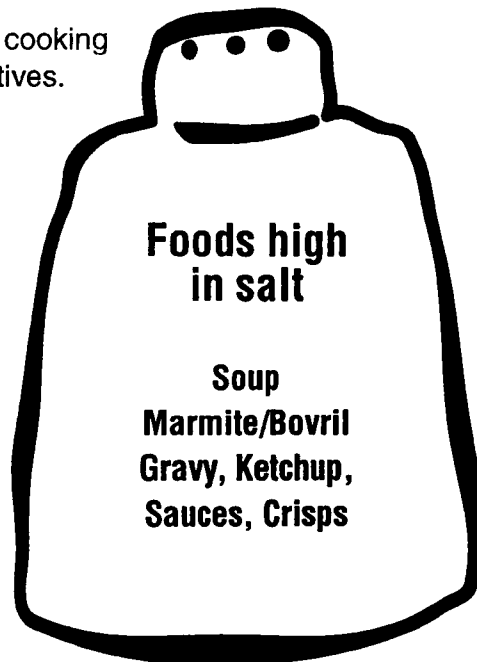
Salt and fluid

Salt should not be added at the table although a small amount in cooking is acceptable. Salt substitutes e.g. Losalt are **not** suitable alternatives.

Small amounts of gravy, ketchup, and other sauces are usually allowed to make the meal more palatable.

A small number of children may require a fluid restriction. The recommended fluid allowance at school is:

Individual allowances



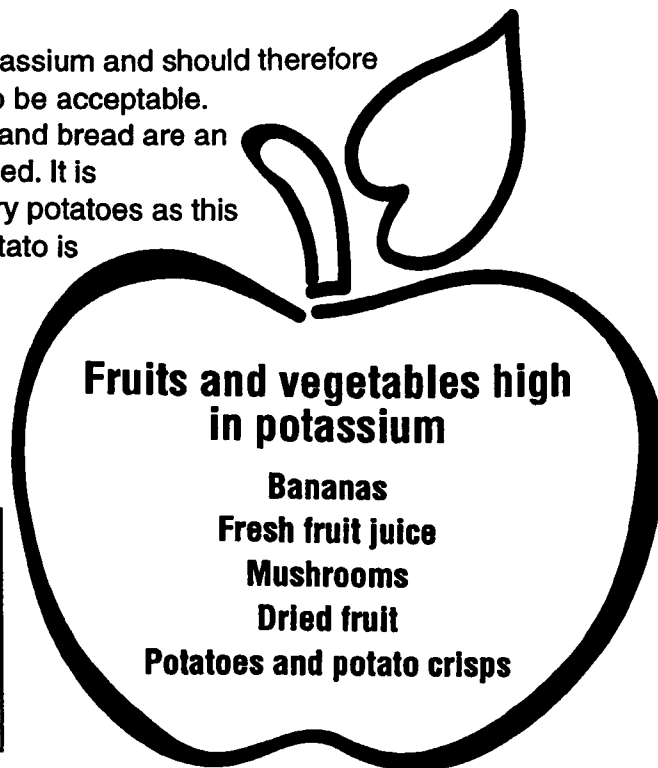
Potassium

Some fruit and vegetables are especially high in potassium and should therefore be restricted. Those not listed should be assumed to be acceptable.

Potatoes are high in potassium but, like pasta, rice and bread are an important source of energy and should be encouraged. It is preferable to boil rather than steam, bake, roast or fry potatoes as this removes some of the potassium. Instant mashed potato is a suitable alternative.

Not all children require a potassium restriction and the degree of restriction may vary.

Individual allowances



A typical school meal may consist of:

Meat/poultry/fish
Vegetables/salad
Mashed/boiled potatoes or pasta/rice/chapati/bread/roll
Small amount of gravy
Sponge/doughnut/cream cake/biscuit (not chocolate coated)
or Apple/pear/satsuma
Drink (not cola or milk)

Any additional requirements: