

Dietitians' Professional User Guide for Weight Loss You Can See for a Kidney Diet

Introduction

This guide will provide you with information on how to use the resource (ref: 9516).

This resource is based on the original resource (ref: 9262) and has been specifically adapted for people with kidney disease who are overweight. It aims to support and promote weight loss as a priority for people within this patient group, while ensuring their diet stays within safe kidney diet boundaries e.g. limiting fruit and veg intake to 5 portions per day, controlling dairy intake and potentially limiting fluid intake.

The energy level prescribed for a patient will be based on an estimate of their initial maintenance energy needs minus 600 kcal/day, and guidance and options have been included to support the potential dietary considerations/restrictions of people with kidney disease including potassium and phosphate intake. Space has been provided to allow you to add additional options to support personal preferences for more variation appropriate for the individual's needs.

A Guide to Using the Patient Resource

This leaflet should be given to the patient when introducing the energy deficit diet and worked through together. The patient's personal information should also be recorded in this leaflet, together with their prescribed dietary regimen of a 600-calorie energy deficit diet.

- Energy values are from McCance and Widdowson's 'composition of foods integrated dataset' on the nutrient content of the UK food supply.
https://www.gov.uk/government/publications/composition-of-foods-integrated-dataset-cofid_19_March_2021
- Where values were not available for prepacked/convenience foods, package labels were used.

Note on Physical Activity

The physical activity recommendations are based on UK Chief Medical Officers' Physical Activity Guidelines (2019) that greater than 150 minutes of physical activity along with dietary restriction may be required for weight loss.

Department of Health and Social Care. Physical Activity Guidelines: UK Chief Medical Officers' Report. Department of Health and Social Care; London, UK: 2019.

Note on Energy Deficit Diet Calculation

The portions used in this resource have been calculated based on calories and may not be in line with current UK healthy eating recommendations:

- include at least 5 portions of fruit and vegetables daily
- eat no more than 70g red and processed meat a day
- have less than 6g of salt per day
- eat 2 portions of fish per week, at least one of which should be an oily fish.

Note on Kidney Diet Needs/Restrictions

People with kidney disease should always be assessed and monitored by a specialist renal team.

Dietary restrictions relating to phosphate, potassium, salt and fluid should all be considered and agreed to meet changing personal needs. The resource provides space to record personalised target blood phosphate (page 8) and potassium (page 9). Any other dietary needs to manage other conditions such as diabetes, CVD and/or allergies, must also be considered and accommodated through their energy deficit diet.

This resource applies the following acceptable ranges for blood potassium and phosphate levels for people with chronic kidney disease.

Treatment	Potassium (mmol/mol)	Phosphate (mmol/mol)
Not on dialysis	3.5-5.5	0.9-1.5
On haemodialysis	4.0-6.0	1.1-1.7
On peritoneal dialysis	3.5-5.5	1.1-1.7

Chart 1

BMI reference chart – weights for a given height, for a healthy weight range, overweight or obese.

Imperial

Height	Weight for BMI 18.5	Weight for BMI 25	Weight for BMI 30	Height	Weight for BMI 18.5	Weight for BMI 25	Weight for BMI 30
4'8"	5st 12lbs	7st 13lbs	9st 7lbs	5'8"	8st 9lbs	11st 10lbs	14st 1lbs
4'9"	6st 1lbs	8st 4lbs	9st 12lbs	5'9"	8st 13lbs	12st 1lbs	14st 7lbs
4'10"	6st 4lbs	8st 8lbs	10st 3lbs	5'10"	9st 3lbs	12st 6lbs	14st 13lbs
4'11"	6st 7lbs	8st 12lbs	10st 8lbs	5'11"	9st 6lbs	12st 11lbs	15st 4lbs
5'	6st 10lbs	9st 2lbs	10st 13lbs	6'	9st 10lbs	13st 2lbs	15st 10lbs
5'1"	7st 0lbs	9st 6lbs	11st 4lbs	6'1"	10st 0lbs	13st 7lbs	16st 3lbs
5'2"	7st 3lbs	9st 11lbs	11st 9lbs	6'2"	10st 4lbs	13st 13lbs	16st 9lbs
5'3"	7st 6lbs	10st 1lbs	12st 1lbs	6'3"	10st 8lbs	14st 4lbs	17st 1lbs
5'4"	7st 9lbs	10st 6lbs	12st 6lbs	6'4"	10st 12lbs	14st 9lbs	17st 8lbs
5'5"	7st 13lbs	10st 10lbs	12st 11lbs	6'5"	11st 2lbs	15st 0lbs	18st 0lbs
5'6"	8st 2lbs	11st 1lbs	13st 3lbs	6'6"	11st 6lbs	15st 5lbs	18st 7lbs
5'7"	8st 6lbs	11st 6lbs	13st 9lbs	6'7"	11st 10lbs	15st 11lbs	19st 0lbs

Metric

Height	Weight for BMI 18.5	Weight for BMI 25	Weight for BMI 30	Height	Weight for BMI 18.5	Weight for BMI 25	Weight for BMI 30
1.42m	37.3	50.4	60.5	1.73m	55.4	74.8	89.8
1.45m	38.9	52.6	63.1	1.75m	56.7	76.6	91.9
1.47m	40.0	54.0	64.8	1.78m	58.6	79.2	95.0
1.50m	41.6	56.2	67.5	1.80m	59.9	81.0	97.2
1.52m	42.7	57.8	69.3	1.83m	62.0	83.8	100.5
1.55m	44.4	60.0	72.0	1.85m	63.3	85.6	102.7
1.57m	45.6	61.6	74.1	1.88m	65.4	88.4	106.0
1.60m	47.4	64.0	76.8	1.91m	67.5	91.2	109.4
1.63m	49.1	66.4	78.7	1.93m	68.9	93.1	111.7
1.65m	50.4	68.0	81.7	1.96m	71.1	96.0	115.2
1.68m	52.2	70.6	84.7	1.98m	72.5	98.0	117.6

Chart 2

Weight loss needed to achieve 5% and 10% weight loss, based on start weight (in half stone bands).

Weight		To lose 5% means losing		To lose 10% means losing	
Imperial (stones)	Metric (kg)	Imperial (lbs)	Metric (kg)	Imperial (lbs)	Metric (kg)
10	64	7.0	3.2	14.0	6.4
10.5	67	7.4	3.3	14.7	6.7
11	70	7.7	3.5	15.4	7.0
11.5	73	8.1	3.7	16.1	7.3
12	76	8.4	3.8	16.8	7.6
12.5	79	8.8	4.0	17.5	7.9
13	83	9.1	4.1	18.2	8.3
13.5	86	9.5	4.3	18.9	8.6
14	89	9.8	4.4	19.6	8.9
14.5	92	10.2	4.6	20.3	9.2
15	95	10.5	4.8	21.0	9.5
15.5	98	10.9	4.9	21.7	9.8
16	102	11.2	5.1	22.4	10.2
16.5	105	11.6	5.2	23.1	10.5
17	108	11.9	5.4	23.8	10.8
17.5	111	12.3	5.6	24.5	11.1
18	114	12.6	5.7	25.2	11.4
18.5	117	13.0	5.9	25.9	11.7
19	121	13.3	6.0	26.6	12.1
19.5	124	13.7	6.2	27.3	12.4
20	127	14.0	6.4	28.0	12.7
20.5	130	14.4	6.5	28.7	13.0
21	133	14.7	6.7	29.4	13.3
21.5	137	15.1	6.8	30.1	13.7
22	140	15.4	7.0	30.8	14.0
22.5	143	15.8	7.1	31.5	14.3
23	146	16.1	7.3	32.2	14.6
23.5	149	16.5	7.5	32.9	14.9
24	152	16.8	7.6	33.6	15.2
24.5	156	17.2	7.8	34.3	15.6
25	159	17.5	7.9	35.0	15.9
25.5	162	17.9	8.1	35.7	16.2
26	165	18.2	8.3	36.4	16.5
26.5	168	18.6	8.4	37.1	16.8
27	171	18.9	8.6	37.8	17.1
27.5	175	19.3	8.7	38.5	17.5
28	178	19.6	8.9	39.2	17.8
28.5	181	20.0	9.0	39.9	18.1
29	184	20.3	9.2	40.6	18.4
29.5	187	20.7	9.4	41.3	18.7

Weight		To lose 5% means losing		To lose 10% means losing	
Imperial (stones)	Metric (kg)	Imperial (lbs)	Metric (kg)	Imperial (lbs)	Metric (kg)
30	191	21.0	9.5	42.0	19.1
30.5	194	21.4	9.7	42.7	19.4
31	197	21.7	9.8	43.4	19.7
31.5	200	22.1	10.0	44.1	20.0
32	203	22.4	10.2	44.8	20.3
32.5	206	22.8	10.3	45.5	20.6
33	210	23.1	10.5	46.2	21.0
33.5	213	23.5	10.6	46.9	21.3
34	216	23.8	10.8	47.6	21.6
34.5	219	24.2	11.0	48.3	21.9
35	222	24.5	11.1	49.0	22.2
35.5	225	24.9	11.3	49.7	22.5
36	229	25.2	11.4	50.4	22.9
36.5	232	25.6	11.6	51.1	23.2
37	235	25.9	11.7	51.8	23.5
37.5	238	26.3	11.9	52.5	23.8
38	241	26.6	12.1	53.2	24.1
38.5	244	27.0	12.2	53.9	24.4
39	248	27.3	12.4	54.6	24.8
39.5	251	27.7	12.5	55.3	25.1
40	254	28.0	12.7	56.0	25.4
40.5	257	28.4	12.9	56.7	25.7
41	260	28.7	13.0	57.4	26.0
41.5	264	29.1	13.2	58.1	26.4
42	267	29.4	13.3	58.8	26.7
42.5	270	29.8	13.5	59.5	27.0
43	273	30.1	13.7	60.2	27.3
43.5	276	30.5	13.8	60.9	27.6
44	279	30.8	14.0	61.6	27.9
44.5	283	31.2	14.1	62.3	28.3
45	286	31.5	14.3	63.0	28.6
45.5	289	31.9	14.4	63.7	28.9
46	292	32.2	14.6	64.4	29.2
46.5	295	32.6	14.8	65.1	29.5
47	298	32.9	14.9	65.8	29.8
47.5	302	33.3	15.1	66.5	30.2
48	305	33.6	15.2	67.2	30.5
48.5	308	34.0	15.4	67.9	30.8
49	311	34.3	15.6	68.6	31.1
49.5	314	34.7	15.7	69.3	31.4
50	318	35.0	15.9	70.0	31.8

Chart 3 - Estimated Energy Requirement (EER)

EERs to maintain body weight are calculated using a formula to account for four factors: gender, age, activity level and current weight. Modest energy deficit diets, which would achieve about 1lb (0.5kg) a week weight loss, are based on daily dietary intake of 600 calories less than the person’s daily energy requirement. Work out patient’s EER for a 600-calorie energy deficit diet using the information below. The information uses the Schofield and WHO energy requirement equations. However, there are alternative equations that you may prefer to use.

1. Basal Metabolic Rate (BMR): Based on patient’s age, gender and current weight (in kg) as listed in the chart below, predict the patient’s BMR. These are based on modified Schofield equations. (*Department of Health Dietary Reference Values, 1991*).

Age Range	Men	Women
Years	BMR	BMR
18-29	15.1 x weight(kg) + 692	14.8 x weight(kg) + 487
30-59	11.5 x weight(kg) + 873	8.3 x weight(kg) + 846
60+	11.9 x weight(kg) + 700	9.2 x weight(kg) + 687

2. Physical Activity Level (PAL): Incorporate their PAL based on the gender and activity (*WHO, 1985*) level shown in the chart below. Do this by multiplying the patient’s estimated BMR with the appropriate figure from the table below. Few patients are likely to have activity levels above inactive.

Activity Level	This Means	Men PAL	Women PAL
Inactive	Assume sitting most of the day with less than 2 hours on their feet	1.4	1.4
Light	Assume some daily exercise (at work or tasks about the house or garden) with at east 2 hours on their feet	1.5	1.5
Moderate	Assume 6 hours on their feet or regular strenuous exercise	1.78	1.64
Heavy	Those in heavy labouring jobs or serious athletes in training	2.1	1.82

3. EER: Calculate the person’s daily estimated energy requirement to maintain weight by multiplying BMR and PAL.

4. EER for weight loss: Subtract 600 calories from the above figure to estimate the person’s energy requirement for modest weight loss.

Chart 4 - Food Group Portions

This resource must be issued with specialist assessment and advice, and guidance adapted to meet the individual needs of the person with kidney disease. Portions must be allocated to ensure that each patient meets their EER without excessive protein intake which can accelerate kidney decline and increase ureamic symptoms (nausea, vomiting and taste changes).

The table below suggests the number of portions from the Eatwell Guide food groups to provide a balanced diet to fit the patients' EER whilst accommodating for their kidney diet needs. This is only a guide and must be considered alongside these additional notes:

- a) Fruit and vegetable portions should be limited to no more than 5 a day for patients with raised blood potassium levels.
- b) Dairy intake should be limited to no more than 3 portions a day for patients following a low phosphate/phosphate restricted diet.
- c) Protein recommendations will vary based on kidney functioning, dialysis status, sex and ideal body weight (IBW):
 - i. Use a BMI of 25kg/m² as IBW for all calculations
 - ii. For pre-dialysis patients, avoid protein intakes > 1.3g/kg IBW/day¹
 - For an average female, this would be approx. 75g protein/day
 - For an average male, this would be approx. 82g protein/day
 - iii. For patients on haemodialysis, minimum protein requirement is 1.1g/kg/IBW/day²
 - iv. For patients on peritoneal dialysis, minimum protein requirements are 1-1.2g/kg/IBW/day²
 - v. For patients on either haemodialysis or peritoneal dialysis:
 - A daily protein intake > 1.4g/kg IBW may not improve survival and may be harmful
 - Recommended daily protein intake for females is approx. 82g
 - Recommended daily protein intake for males is approx. 90g
- d) To achieve the patient's EER, always consider and limit protein intake, and adjust fruit, vegetables and dairy to comply with any potassium or phosphate restrictions. This may require more portions being added to the Fats and Extras group. Always encourage use of polyunsaturated fat, especially when suggesting higher numbers of fat portions.

Food Group Allocations Based on Daily Energy Prescription Together with Macronutrient Profile

	Portions from each of the main 4 food groups					Extras calorie allowance
	CHO	F&V	D	Pro	F	
Daily Energy Prescription	Approx. 80kcal/portion	Approx. 40kcal/portion	Approx. 90kcal/portion	Approx. 140kcal/portion	Approx. 50kcal/portion	Discretionary kcal for extras
1300	5	5	3	2	2	50
1500	6	5	3	2	2	170
1800	8	5	3	2	4	210
2000	9	5	3	2	6	230

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¹ KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease, Kidney International Supplements, Volume 3, Issue 1 (2013)

² Wright M, Southcott E, MacLaughlin H, Wineberg S, Clinical practice guideline on undernutrition in chronic kidney disease, BMC Nephrology (2019) 20:370

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