

Nutrition Therapy

The overall aim of the nutrition therapy is to stabilize or to increase the weight of the resident and to improve the nutritional status. For this purpose, the following steps are necessary:

> • Define the nutritional goals • Define the individual nutritional requirements

- Define the route(s) of nutrition • Define nutritional support and imple-ment the nutritional therapy plan

Step 3

Tools and equations to set

the nutrition targets

Definition of the nutrition goals

Check the body weight always at the same time (e.g. in the morning, sober, after urination), with similar clothing without shoes, and with the same validated scales.



BMI: $63 / (1.76 \times 1.76) = 20.3 \text{ kg/m}^2$

Calculation of energy requirements in kcal¹

	Basal Energy Expenditure	TOTAL energy requirements (kcal/day) = BEE x stress (activity) factor*					
	= BEE "Rule-of-thumb" 20 kcal/kg BW/day In subjects with BMI < 25	"Activity factor" ² : Immobile residents: 1.2 Residents with low activity ^b : 1.5 Residents with moderate activity ^c : 1.6	"Stress factor": (to correct calculated energy requirement for hypermetable Pressure ulcers/chronic wounds < 50 cm² 1.20 - Pressure ulcers/chronic wounds > 50 cm² 1.50 -				
	and/or age < 60: 25 kcal/kg BW/day	Residents with high activity ^a : 1.6 a mainly lying or sitting	Long bone fracture Cancer Acute infection	1.15 - 1.30 1.10 - 1.30			
* Total energy requirements equal the BEE multiplied by stress or activity factors.		b sitting, sometimes walking or standing c mainly walking and standing d constantly walking and standing	Reduced kidney function (not on dialysis) 0.60 - C				

Calculation of Protein requirements in g²



Please note: Protein recommendations usually range from 0.8 to 1.5 g/kg body weight. For residents with diseases and special conditions demands increase; in the case of burns or cancer protein amounts up to 2.0 g/kg body weight are recommended.

Weight [kg] 35 38 40 43 45 48 50 53 55 58 60 63 65 68 70 73 75 78 80 83 85 88 90 93 95 **0.8** g/kg KG 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 **1.0** g/kg KG 35 38 40 43 45 48 50 53 55 58 60 63 65 68 70 73 75 78 80 83 85 88 90 93 95 **1.1** g/kg KG 39 42 44 47 50 52 55 58 61 63 66 69 72 74 77 80 83 85 88 91 94 96 99 102 105 **1.2** g/kg KG 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99 102 105 108 111 114 **1.4** g/kg K6 49 53 56 60 63 67 70 74 77 81 84 88 91 95 98 102 105 109 112 116 119 123 126 130 133 **1.5 g/kg KG** 53 57 60 64 68 71 75 79 83 86 90 94 98 101 105 109 113 116 120 124 128 131 135 139 143 **1.8 g/kg KG** 63 68 72 77 81 86 90 95 99 104 108 113 117 122 126 131 135 140 144 149 153 168 162 167 171 **2.0** g/kg KG 70 73 80 86 90 96 100 106 110 116 120 126 130 136 140 146 150 156 160 166 170 176 180 186 190

Resident (< 65 years)	0.8 g/kg BW	
Resident (> 65 years)	0.8-1.2 g/kg BW	/
Resident (> 65 years) with acute or chronic desease	1.2–1.5 g/kg BW	

Ask your Fresenius Kabi contact person for the gnp calculator for a quick and easy performance.



Calculation of fluid requirements in ml⁴

Weight [kg]	35	38	40	43	45	48	50	53	55	58	60	63	65
Fluid requirements [ml]	1725	1770	1800	1845	1875	1915	1920	1995	2025	2070	2100	2145	2175
Weight [kg]	68	70	73	75	77.5	80	83	85	88	90	93	95	
Fluid requirements [ml]	2220	2250	2295	2325	2365	2400	2445	2475	2520	2550	2595	2625	

Calculation basis:9

to be calculated by the 100/50/15 formula

- 100 ml/kg (for the 1st 10th kg of body weight)
- + 50 ml/kg (for the 11th 20th kg of body weight)
- + 15 ml/kg (for the 21st x kg of body weight)
- = FLUID REQUIREMENT in ml

Increased fluid requirement: during fever 2-2.5 ml/kg body weight/day per 1°C above 37 °C, vomiting, diarrhoea, severe burns, heavy sweating, drainage, fistulas or similar diseases.

Restricted fluid supply: during oedemas (cardiac, hepatogenic, renal pathogenesis), ascites, terminal kidney failure (with oliguria, anuria), dialysis treatment.



Sources: 1 AKE (2008): Recommendations for Enteral and Parenteral Nutrition in Adults. Austrian Society of Clinical Nutrition, Vienna. ESPEN Volkert D et al. (2006): ESPEN guidelines on enteral nutrition: Geriatrics. Clin Nutr 25 (2): 330-60. DGEM Volkert D et al. (2013): Clinical Nutrition in Geriatrics (DGEM guideline) Aktuel Ernahrungsmed, 38(3): e1-e48. EPUAP & NPUAP (2009): Treatment of Pressure Ulcers. National Pressure Ulcer Advisory Panel, Washington DC. 2 Bauer J et al. (2013): Evidence-based recommendations for optimal dietary protein intake in older people: a position paper from the PROT-AGE Study Group, J., et al., J Am Med Dir Assoc 14 (8): 542-559. DACH (2000): Reference values for nutrient intake. German Nutrition society, Austrian Nutrition Society, Swiss Society for Nutrition Research, Swiss Nutrition Association. Frankfurt, Germany. 3 Chidester J and Spangler A (1997): Fluid intake in the institutionalized elderly. J Am Diet Assoc, 97 (1): 23-28. (2013): Aktuel Ernahrungsmed. 38(3): e1-e48





Source: Dutch Malnutrition Steering Group (2011): Guideline - Screening and treatment of mlanutrition. www.fightmalnutrition.eu.

Please note: The recommendations for supplementation should be based on nutrition intake **and** assessment.

Nutrition threapy plan

🗙 Oral nutritional supplements	Tube feeding		Parenteral r	nutrition
Fresubin Energy DRINK product name	product name		product name	
600 24 kcal/day g protein/day	kcal/day	g protein/day	kcal/day	g amino acids/day
400 ml/day	ml/day		ml/day	
2 no. of bottles	flow rate (ml/h)		flow rate (ml/h))
	duration (hours)		duration (hours	5)

Calculation of fluid substitution in residents eating normal food





Enteral/parenteral algorithm



Source: Adapted from National Collaborating Centre for acute care (2006): Nutrition support for adults. www.nice.org.uk/quidance/cq32/