

1 **Supplementary Tables**

2

3 **Supplementary Table 1 – Sheet of the survey sent to all the core members of the**
 4 **European Society for Clinical nutrition and metabolism (ESPEN) specific interest group**
 5 **on intensive care unit (ICU) clinical nutrition.** The members were asked to give their input
 6 regarding their own daily practices in the different topics addressed by the ESPEN guideline
 7 on clinical nutrition published in 2019 [1].

What	How	When	By who	Where noted	Comments
Nutritional screening					
Nutritional assessment					
Feeding route decision making					
Use of early or late nutrition support					
Continuous or intermittent enteral nutrition					
Use of prokinetics					
Use of supplemental parenteral nutrition					
Determination of energy target					
Determination of protein target					
Use of urinary urea excretion					
Use of lipid emulsions, including omega-3 or -9 fatty acids					
Use of glutamine					
Use of vitamins and trace elements					
Monitoring of the achievement of the nutritional goals, and clinical and biological monitoring					
Existence of specific protocols (e.g. for glucose control and insulinotherapy, surgical, including transplanted, obese, non-intubated, or trauma patients)					
Use of physical activity					

Supplementary Table 2 – Survey answers of the core members of the European Society for Clinical nutrition and metabolism (ESPEN) specific interest group on intensive care unit (ICU) clinical nutrition. The members were asked to give their input regarding their own daily practices in the different topics addressed by the ESPEN guideline on clinical nutrition published in 2019 [1].

What	How	When	By who	Where noted	Comments
Nutritional screening	NRS2002 (EW)	At admission	ICU dietitians	EMF	Special tool in electronic medical file which makes filling in easier (eg body weight loss is calculated automatically when you report BW 12, 6 months and 3 and actual)
	No screening tool used, but all mechanically ventilated patients reviewed by dietitian within 48-72 hours of admission (DB)	Within 48-72 hours of admission	ICU dietitians	EMF	-
	No use of NRS-2002, or any screening tool (RT)	Empirical based on physical examination	Absence of ICU dietitian full time making the assessment non protocolized	EMF since only 2021	Body weight is collected every day but more with the objective of fluid hydration status assessment
	None (JCMG)	-	-	-	-
	NRS2002 (MU)	At admission	Physician, dietitian unavailable in ICU	EMF	NRS-2002 calculation integrated into EMF
	Computerized for MUST (PS)	Within 48 hours	Dietitians	EMF	-
	SGA (PT)	Not regularly at admission	ICU physicians	EMF	-
NRS2002 (AF)	Not done	-	-	-	
Nutritional assessment	Anamnesis (body weight and physical function) (EW)	First 3 days	Treating MD to relatives Dietitians	EMF	-
	GLIM (EW)	At admission	ICU dietitians	EMF	-
	GLIM not implemented	-	-	-	-

(RT, AF, MU)				
Anamnesis (body weight and physical function) (RT)	Not implemented	-	-	Body weight is collected every day but more with the objective of fluid hydration status assessment than the nutritional assessment
Anamnesis (body weight and physical function) (JCMG)	First 3 days	ICU MDs	EMF	-
Anamnesis (body weight and physical function) (PT)	First day	Treating MD	EMF	-
Anamnesis (body weight and physical function) (AF)	Preoperative	Treating MD	EMF	-
Body weight (DB)	Usually estimated on admission, but aim for weekly weight thereafter	Nursing staff/physiotherapist	EMF	Some beds have scales, but not always 'zeroed' prior to patient being admitted. Obvious confounder of fluid.
Physical examination (EW)	First 3 days	Treating MD	EMF	MD's get training how to recognize muscle loss etc
Physical examination (DB)	48-72 hours after ICU admission and then weekly	Dietitians	EMF	Physical examination similar to SGA used, but without the scoring. Ulna length/MUAC may be used if appropriate
Physical examination (RT)	First 3 days	Treating MD	EMF	MDs are not trained how to recognize muscle loss: to be done!
Physical examination (JCMG)	First 3 days	ICU MDs	EMF	-
Physical examination (PT)	First day	Treating MD	EMF	-
Physical examination (AF)	At admission	Treating MD	EMF	-
Predictive equations (DB)	48-72 hours after ICU admission and then	Dietitians	EMF	Modified Penn State used in most mechanically ventilated patients. Weight based equation used in

		minimum weekly if Penn state used or if new weight acquired			ECMO patients
Energy expenditure predictive equations (RT)	ESPEN guidelines: 25 kcal/kg/day at D4	Treating MD	Not noted; to be done in the new EMF	-	
Muscle Echography to measure Rectus femoris cross-sectional area (DB)	Research purposes only	Dietitian	Study file	-	
Body composition (EW)	On day 3 (max 3+2 if day 3 = weekend)	ICU dietitians	EMF	-	Not in case of restricted therapy
Body composition (PT)	Not performed	-	Body composition	-	To be implemented
Body composition (AF)	In study context	Treating MD	-	-	
Muscle mass (EW)	In study context	-	-	-	
Muscle mass (PT)	-	Treating MD	EMF	-	Only estimation
Muscle mass (AF)	In study context	Treating MD	-	-	
Bioimpedance analysis (DB)	About to start a trial of using this on step down to the ward to implement GLIM	Dietitian/Dietetic assistant	EMF	-	
Body composition (RT)	On days 1 to 3 including BIA phase angle	Absence of ICU dietitian full time making the assessment non protocolized	-	-	To be implemented
Medical history including body weight (MU)	At admission	Physician	EMF	-	

	Measurement of patient height to estimate ideal body weight (MU)	At admission	Nurse	EMF	-
	Physical exam (MU)	At admission	Physician	EMF	-
	GLIM (PS)	Within 48 h	Dietitian	EMF problem list	-
Feeding route decision making	By protocol NGT at admission when LOS >2 days (not cardiac or brain surgery) (EW)	Every day after lookback on last 24hours: if GE not enough SPN is started	ICU dietitians + treating or supervising MD's	-	Every day ICU dietitians go bedside to give feedback on last 24h intake adequacy and talk to treating MD and nurses
	By protocol NGT at admission for all patients expected to be ventilated more than 48 hours (DB)	Dietitians screen patients daily for any tolerance concerns	Dietitian/Medical team	EMF	Dietitian screens patients daily and raises any concerns to medical team. Energy and protein balances calculated minimum weekly to aid decision making.
	By protocol NGT at admission when length of stay >2 days (RT)	Every day after lookback on last 24hours: if EN<60% of target, SPN is started between day 4 & 7	Treating or supervising MD's	EMF	Every day, ICU dietitians go bedside to give feedback on last 24h intake adequacy and talk to treating MD and nurses
	By protocol NGT at admission in intubated patients (JCMG)	Every day in clinical round. SPN is started if caloric intake by EN is below 70% of prescribed	ICU MDs	EMF	-
	Routine NGT for ventilated and unconscious patients (MU)	At admission	Physician	EMF	-
	Enteral first NGT by protocol (PS)	Within 24 h	Physician	EMF	EN preferred
	NGT at admission (PT)	Every day after lookback on last 24hours:	Treating or supervising MDs		Every day ICU physicians go bedside to give feedback on last 24h intake using

		if EN<60% of target, SPN is started			notes of nurses
	By protocol: start minimal enteral nutrition (AF)	When ICU LOS >24h	Treating MD	EMF	-
Use of early or late nutrition support	By protocol: start in first 48h (EW)	Decision making on day 1.	ICU dietitians + treating or supervising MDs	EMF	The objective is to be on target by day 4, so late nutrition support does rarely exist
	Early - enteral feeding to start within 48 hours (DB)	Decision making on day 1	Medical team	EMF	Aim for target feeding by day 3 (first point of dietetic assessment)
	By protocol: start in first 48h (RT)	Decision making on day 1	Treating or supervising MDs	EMF	The objective is to be on target by day 4, so late nutrition support does rarely exist
	By protocol: start in first 48h (JCMG)	Decision making on day 1	ICU MDs	EMF	The objective is to be on target by day 3
	Within 48h After hemodynamic stabilization (MU)	Daily clinical round	Physician	EMF	Usually start with 20 mL/h and increase to reach the target on day4
	Early preferred (PS)	Within 24-48 h	Physician	EMF	-
	Start on 2nd day (PT)	decision making on day 2	Treating or supervising MDs	EMF	The objective is to be on target by day 4, so late nutrition support does rarely exist
	By protocol: start after first 24h (AF)		Treating MD	EMF	
Continuous or intermittent enteral nutrition	Continuous (EW)		ICU nurses	-	-
	Continuous (DB)	-		-	-
	Continuous (RT)	-		-	-
	Continuous (JCMG)	-		-	-
	Continuous (MU)	-		-	-
	Continuous always (PS)	From the start			EMF

	Continuous feeding (gastric and postpyloric), with regular measurement of GRV, and adjusting the volume accordingly (PT)	-		-	-
	Continuous for 20h per day. Pause for 2 hours in the morning and for 2 hours in the evening to check for GRV (AF)	-		-	-
Use of prokinetics	By protocol: when GI intolerance we start, combining erythromycin and metoclopramide (EW)	GE intolerance	ICU dietitians + treating or supervising MDs	EMF	-
	By protocol: metoclopramide 1 st line, erythromycin second line (DB)	GI intolerance (GRV >300ml/ 4 hours)	Dietitians/medical team	EMF	By protocol: metoclopramide 1 st line, erythromycin second line. Post-pyloric feeding if high GRV persists for 3 days.
	By protocol: when GI intolerance we start, combining erythromycin and metoclopramide (RT)	GI intolerance	Treating or supervising MDs	EMF	-
	By protocol: when GI intolerance we start metoclopramide. In case of persistence we combine erythromycin and metoclopramide (JCMG)	GI intolerance	ICU MDs	EMF	-
	Metoclopramide by protocol (erythromycin unavailable) (MU)	According to gastric residual volumes	Nurse	EMF	GRV measured every 8 hr
	If GRV > 500 ml (PS)	Any time	Physician	EMF	Erythromycine preferred
	When GE intolerance we start metoclopramide + erythromycin sometimes (PT)	GE intolerance	Treating or supervising MDs	EMF	-
	By protocol: if > 400 ml GRV/24h: start of	GE	Treating or	EMF	-

	erythromycine and metoclopramide (AF)	intolerance	supervising MD		
Use of supplemental parenteral nutrition	Central line (EW)	When target is not reached on day 4 by EN	ICU dietitians + MDs and nurses	-	-
	Central venous line (DB)	When weaning from PN to EN	Dietitians	EMF	We do not typically use SPN in the true sense. When starting PN would we always try to keep some trophic feeding going. SPN usually occurs by default when weaning off PN back to EN
	Central venous line (RT)	When target is not reached on day 4 by EN	MDs and nurses	EMF	-
	Central line (JCMG)	When target is not reached on day 4 by EN	ICU MDs	EMF	
	Usually central line (MU)	When enteral target is below 60% on day 4	Physician and nurse	EMF	-

	Ready to use bag (PS)	Not reaching target with enteral feeding	Physician pharmacist dietician	EMF	-
	Central line (PT)	When target is not reached on day 4 by EN	Treating MD's	-	-
		Central line (AF)	- When targets cannot be reached with EN: we start PN it from day 2 onwards if goals are not met by EN (first ICU day is counted as day 0) -when an awake patient has problems with swallowing and does not tolerate a gastric feeding tube: we also apply PN	Treating or supervising MD	
Determination of energy target	Indirect calorimetry or 25 kcal/kg/day adjusted BW (EW)	Day 1 of ICU stay: plan is developed with targets defined on day 3 (max 3+2 if D3= week-end) repeated on day 7 or in changed clinical context	Dietitians ICU or some MD's	EMF	We start with 25kcal/g/day and perform IC at latest day 3 because we want to be on target by day 4
	Penn state for ventilated non-ECMO, 20-25 kcal/kg for ECMO (Adjusted body weight if overweight/obese) (DB)	48-72 hours after ICU admission and then minimum weekly if Penn state used or if new weight	Dietitians	Penn state for ventilated non-ECMO, 20-25 kcal/kg for ECMO (Adjusted body weight if overweight/obese)	48-72 hours after ICU admission and then minimum weekly if Penn state used or if new weight acquired

	acquired			
Energy expenditure predictive equations: ESPEN 20-25 kcal/kg usual or adjusted BW /day - indirect calorimetry device not available (RT)	Day 2 of ICU stay	Some MDs	Not noted; to be done in the future ICU-dedicated EMF	We start with 8, 15 at day 2, 20 at day 3 to reach 25kcal/kg/day at day 4
Indirect calorimetry or 20 kcal/kg/day usual BW (non obese) or adjusted BW (obese) (JCMG)	After patient stabilisation	Some ICU MDs		
Predictive equations (DB)	48-72 hours after ICU admission and then minimum weekly if Penn state used or if new weight acquired	Dietitians	EMF	Modified Penn State used in most mechanically ventilated patients. Weight based equation used in ECMO patients
Indirect calorimetry (DB)	Around day 3 in eligible patients, and then weekly	Dietitian	EMF	-
Indirect calorimetry for ventilated patients or 25 kcal/kg/day for non-ventilated (MU)	First 3 days and repeated weekly	Physician	EMF	After hemodynamic and metabolic stabilization
Occasionally indirect calorimetry or Occasionally CO ₂ production (VCO ₂ (ml/min)) on ventilator: according to modified Weir equation [#] Or 20-25 kcal/kg/d or 1 kcal/kg/h (AF)	Occasionally or in study context	Treating MD	EMF	-
Indirect calorimetry as possible If not, Faisy predictive	Within 48 h and redone if patient	Physician, nurse or dietician	EMF	Respecting limitations and preventing overfeeding

	equations: 30% day 1, 50% day 2, 70% day 3 and increase to 100% (PS)	changing condition or every week if patient stable			
	25 kcal/kg/day adjusted BW – indirect calorimetry device not available (PT)	Day 2 of ICU stay plan is developed with targets defined	Treating MDs	-	We start with 15kcal/kg/day, and aim to reach the target 25 kcal/kg/day on day 4
Determination of protein target	1.3 g/kg BW/day adjusted BW (EW)	Day 1 of ICU stay plan is developed with targets defined	ICU dietitians and/or MDs	-	Rotating MDs get training in ICU nutrition and how to use the tool. once they know, they are tested on the plans they develop
	Minimum 1.2 g/kg BW/day (IBW if overweight or obese) (DB)	48-72 hours after ICU admission	Dietitians	Minimum 1.2 g/kg BW/day (IBW if overweight or obese)	48-72 hours after ICU admission
	1.3 g/kg BW/day adjusted BW (RT)	Day 2 of ICU stay	Some MDs	-	-
	1.3 g/kg BW/day usual BW (non obese) or adjusted BW (obese) (JCMG)	After patient stabilisation and start of nutrition protocol	ICU MDs	-	-
	1.3 g/kg/day (MU)	Within 48h	Physician	EMF	Modular protein supplement if protein intake inadequate
	1.3 g/kg/day (PS)	Within 72 h	Physician-dietician	EMF	Use of supplemental amino acid powder if needed
	1.3 g/kg BW/day adjusted BW (PT)	day 2 of ICU stay plan is developed with targets defined	Treating MDs	-	Rotating MD's get training in ICU nutrition
	1.3 g/kg/day (adjusted body weight) (AF)	Plan developed within 48h	Treating or supervising MD	-	We often observed that more protein leads to more urinary nitrogen losses in patients with CKD staying

					in the ICU longer than 14 days. If a patient has increasing urinary nitrogen losses and increasing BUN over several days, some physicians decrease protein target in these patients.
Use of urinary urea excretion	24h collection (EW)	In study context or on indication (long stayers, ...)	ICU dietitians and/or MD's	-	-
	Not done (DB)	-	-	Not done	-
	24h collection (RT)	In study context or on indication (long stayers, ...)	MDs	-	-
	Not done (JCMG)	-	-	Not done	-
	24h collection (MU)	In study context or on indication	Physician and nurse	EMF	-
	Total urine collection (PS)	Unfrequent, for research purposes	Nurse	EMF	-
	Urinary N2 excretion (PT)	Not performed			
	24h collection occasionally protein loss is calculated: protein loss (g/24h)=urinary urea in g/L / 2,14 x (24h urine volume) x 6,25 alternatively, Bistran's Equation for metabolic protein requirement (g/day): 24-h urinary urea (mmol/day) × 0.028 × 100/16 + 25 (AF)	Daily	Treating or supervising MD	EMF	

Use of lipid emulsions, including omega-3 or -9 fatty acids	In ready to use bags (EW)	On indication protocol is deviated	Supervising MD (myself as nutrition expert)	EMF	
	In ready to use bags (triple chamber bags) (DB)	When PN required	Dietitians	EMF	Dietitians determine requirements, pharmacist checks stability, medical team prescribe, nurses administer
	In ready to use bags (all-in-one tricompartmentalized solutions) (Baxter Olimel, olive oil) (RT)	Rare use of omega3 emulsions (Omegaven)	If so supervision by myself as nutrition expert	EMF	-
	In ready to use bags or in Hospital Pharmacy compounded bags (JCMG)	In all PN prescribed	Some ICU MD's	EMF	
	All-in-one bags (MU)	When PN indicated	Supervising physician	EMF	Supplemental omega-3 in surgical patients
	Ready to use bags (PS)	As needed when PN is used. No n-6	Physician pharmacist dietician	EMF	
	All in one bags (PT)	On indication (almost always)	Supervising MD	EMF	
	Omegaven and all-in-one PN (for example: Nutriflex omega special, Smofkaviben N-plus central) (AF)	When PN indicated	Supervising physician	EMF	Supplemental omega-3 in surgical patients
Use of glutamine	Intravenous (EW)	Almost never ; only complicated wounds (we have no burn patients)	-	-	We used to provide glutamine off label to patients in first 5 days of EN
	Not used (DB)	-	-	-	-
	almost never used (RT)	almost never (we have no burn patients)	If so supervision by myself as nutrition expert	-	-

	In hospital Pharmacy compounded bags (JCMG)	During acute phase in pts with indication for PN	Some ICU MD's	EMF	-
	Enteral or parenteral (MU)	Trauma patients and patients having wounds	Supervising physician	EMF	-
	No more use (PS)	-	-	-	Stopped prescribing
	Never (AF)	-	-	-	-
Use of vitamins and trace elements	Added to PN (EW)	Every PN bag that leaves the pharmacy	Standing order by protocol of nutrition team	On the bag - in EMF	Not with EN
	Included in PN and also given IV to patients on CRRT > 35ml/kg (DB)	Every PN bag and when patients on high dose CRRT	Dietitians/medical team	Electronic medical record	Not routinely given with EN unless on high dose CRRT or unless felt necessary by the dietitian
	Added to PN by nurses at patient bedside (RT)	Every PN bag		On the bag - in EMF	Not with EN
	Added to PN (JCMG)	Every PN bag Pharmacy compounded	ICU MD's	On the bag - in EMF	-
	Added to PN at the bedside (MU)	Daily	Physician order	EMF	-
	In the EN formulas or added to PN at bedside (PS)	Each time EN or PN is used	Physician Dietician Pharmacist	EMF	In the EN formulas or added to PN
	Added to PN (PT)	Every PN bag (industrial)	By nurses	On the bag - in EMF	Not with EN
	Added to PN and also given IV to patients on CRRT (AF)	Every PN bag	By nurses	EMF, on the bag	-

Monitoring of the achievement of the nutritional goals	Every day a ratio between intake of intentional and non-intentional calories and proteins and targets is made (EW)	Every morning	ICU dietitians	EMF	We designed ourselves an excel file which was incorporated in the electronic medical system of the hospital so it takes around 5 min per patient per day (by users with experience)
	Reviewed weekly via excel spreadsheet (prescription vs delivery, non-nutritional kcal included) (DB)	Weekly	Dietitians	EMF	
	Not on a systematic daily basis (RT)	-	MD's	-	New EMF is on implementation
	Every day a ratio between intake of intentional and non-intentional calories and proteins and targets is made (JCMG)	Every morning	ICU MD's ICU nurses	EMF	A tool to automatically calculate ratio is incorporated in EMF
	Difference between target and actual intake is calculated (MU)	Daily clinical round	Physician	EMF	-
	Visible of the screen of the EMR (PS)	Every day	Physician, dietician	EMF	-
	Every day a ratio between intake of intentional and non-intentional calories and proteins and targets is made (PT)	Every morning	Treating MD, clinical pharmacist	EMF	-
	Applied intentional and non-intentional calories can be checked daily in the EMF (AF)	Every morning	Treating or supervising MD	EMF	-
Clinical and biological monitoring	Clinical + lab (EW)	Extra attention with PN use	Treating MDs, clinical pharmacist, ICU dietitians	EMF	We have 'PN lab profiles' but in ICU Triglycerides, phosphate etc are in most ICU profiles available
	Clinical + lab (DB)	Each review (minimum weekly)	Dietitian	EMF	This is relating to nutrition assessment purposes only. Bloods are taken daily
	Clinical + lab (RT)	Extra attention with PN use	Treating MDs	EMF	-

	Clinical + lab (JCMG)	Extra attention with PN use	ICU MDs	EMF	We have 'nutrition lab profiles'
	Clinical + lab (MU)	Daily	Physician	EMF	Full blood chemistry twice a week including prealbumin
	Lab (PS)	Every day	Physician	EMF	Phosphate several times a day when needed
	Clinical + lab (PT)	Extra attention with PN use	Treating MDs, clinical pharmacist	EMF	Triglycerides, phosphate etc are in most ICU profiles available
	Clinical + lab (AF)	Extra attention with PN use	Treating and supervising MD, clinical pharmacist, sometimes dietician	EMF	For special questions or problems during nutritional therapy, we contact mostly our clinical pharmacist and sometimes dieticians.
Existence of specific protocols	Rarely (JCMG)	On indication	-	-	-
Glucose control and insulin therapy (DB)	Computerized protocol	-	-	EMF	Sliding scale insulin regimen
Glucose control (PS)	Computerized protocol	Each time glucose is taken	Nurse	EMF	-
	Not in use (PT)	-	-	-	-
Insulin therapy (MU, AF)	Mostly continuous infusion when EN and PN infused (MU)	Starts when glucose > 150 mg/dl and stops when < 110 mg/dl	Nurse	EMF	Bolus insulin if continuous nutrition is not given
	Mostly continuous infusion when EN and PN infused (AF)	Insulin is started with 0,5-2 IE/h when glucose > 125 mg/dl or 2-3 IE/h when glucose > 200 mg/dl and stopped when glucose <	Nurse	EMF	10-30 ml glucose 33% solution is given as iv bolus if glucose < 100 mg/dl

		125 mg/dl			
Transplantation (EW, RT)	Kidney transplantation (EW)	on indication	-	-	-
	Liver transplantation (RT)	Daily, on indication	-	-	-
Obese patients	None	-	-	-	-
Nutritional therapy after extubation (MU)	NGT is being kept until oral intake > 50% of target	ONS if hospital food intake is poor	-	-	-
Post extubation (PS)	According to the speech therapist evaluation, progressive oral feeding is started or not	Day after extubation	Physician Speech therapist	EMF	-
Trauma patients	None	-	-	-	-
Use of physical activity	Active and passive mobilisation (EW)	Every day	Physiotherapists	EMF	-
	Active and passive mobilisation (DB)	Aim daily, but dependent on staffing	Physiotherapists	EMF	-
	Active and passive mobilisation (RT)	Not every day because of practical issues	Physiotherapists	EMF	-
	Active and passive mobilisation (JCMG)	Every day	Physiotherapists	EMF	-
	Active and passive (MU)	Once a day	Physiotherapists	-	-
	Cycle ergometry Electrical muscle stimulation (PS)	When possible and no contra indication	Physiotherapists	EMF	Electrical muscle stimulation for heavily sedated patients (ECMO...)
	Active and passive mobilisation (PT)	every day	Physiotherapists	EMF	-
	Active and passive mobilisation (AF)	every day	Physiotherapists	-	-