SPECIAL REPORT

Clinical nutrition in gastrointestinal diseases: an up-to-date clinical practice guideline

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KEY WORDS

clinical nutrition, enteral nutrition, liver failure associated with parenteral nutrition, malnutrition, parenteral nutrition

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ABSTRACT

This paper presents updated recommendations on clinical nutrition in gastrointestinal diseases, developed by the Clinical Nutrition and Metabolism Section of the Polish Society of Gastroenterology. Their aim is to provide clinicians with comprehensive and up-to-date data on the diagnosis and management of malnutrition in various gastrointestinal conditions, including inflammatory bowel diseases, acute and chronic pancreatitis, and liver diseases, as well as to improve nutritional care in geriatrics. The primary goal of these recommendations is to provide practical, evidence-based guidance for clinical nutrition in gastroenterology. To achieve this, we reviewed, summarized, and integrated recent international guidelines, supplementing them with the latest available evidence where appropriate. A structured consensus decision-making process was followed by experts in the field, leading to the formulation of 67 key statements that reflect current best practices. The document provides detailed recommendations on indications for and contraindications to enteral and parenteral nutrition, with a special focus on endoscopic access for enteral feeding. It also outlines practical principles regarding caloric requirements and nutritional strategies tailored to specific gastrointestinal disorders. These recommendations have been carefully developed with input from leading experts in gastroenterology and clinical nutrition, ensuring both scientific rigor and practical applicability for health care professionals. The following recommendations are highlighted as being particularly relevant in everyday clinical practice:
Statement 16: We suggest starting nutrition supply through the established percutaneous endoscopic gastrostomy and percutaneous endoscopic gastrojejunostomy within 3 to 4 hours postsurgery, and through direct percutaneous endoscopic jejunostomy within 24 hours postsurgery.
Statement 38: In severe exacerbation of ulcerative colitis, we suggest enteral nutrition as the first-line

management in patients with a functional gastrointestinal tract. We recommend parenteral nutrition in this patient group when the patient cannot be effectively fed via the gastrointestinal route.

Statement 39: In malnourished patients with Crohn disease and indications for surgery, if possible, we recommend delaying surgery for 7 to 14 days or longer, until nutritional status improves. The optimal timing of surgery should be based on the benefit of continued metabolic preparation and the urgency of surgery due to increasing or regressing clinical symptoms.

Statement 41: We recommend early initiation of oral nutrition in patients with predicted mild acute pancreatitis after resolution of complaints, regardless of lipase activity.

Statement 42: We recommend the implementation of enteral nutrition from the start of hospitalization in all malnourished patients and individuals with predictive factors for severe acute pancreatitis, and within 72 hours of admission to a hospital in all patients in whom oral nutrition does not cover 60% of protein-calorie requirements.

Statement 53: In patients with liver cirrhosis, we recommend a daily total energy intake of 30–35 kcal/kg/d along with a protein supply of 1.5 g/kg/d for malnourished patients and 1.2 g/kg/d for other patients, taking metabolic limits into account.

Statement 54: We recommend withholding enteral feeding for 48–72 hours after an episode of esophageal/gastric variceal bleeding (until the bleeding is controlled), as enteral feeding makes endoscopic intervention more difficult, increases visceral flow, and may exacerbate variceal bleeding.

Introduction This paper presents diagnostic and therapeutic recommendations for clinical nutrition in gastrointestinal diseases, developed by the Clinical Nutrition and Metabolism Section of the Polish Society of Gastroenterology. The recommendations were formulated based on a comprehensive review of the available literature indexed in PubMed, Medline, EMBASE, and the Cochrane Library databases, covering the period from 1990 to 2023. Particular emphasis was placed on systematic reviews, clinical guidelines of recognized scientific societies, and monographs, including documents developed using the Grading of Recommendations Assessment, Development, and Evaluation methodology.

To the best of our knowledge, this is the first comprehensive study on clinical nutrition in the most prevalent gastrointestinal diseases that integrates up-to-date evidence to support daily clinical practice for both gastroenterologists and internal medicine specialists.

A notable limitation of this paper is the lack of robust, up-to-date meta-analyses in certain areas that would further strengthen our recommendations. It is important to acknowledge that, for ethical reasons, most studies in the field of nutritional treatment are not randomized controlled trials but rather observational, retrospective, or pragmatic studies. Given that awaiting new publications could significantly delay the dissemination of critical knowledge on clinical nutrition, we have supplemented the available evidence with expert consensus from our working group for topics where high-quality data are lacking.

In light of the continuous advancements in medical knowledge, the authors have set a deadline of 3 years for the next revision of these guidelines to ensure their ongoing relevance and alignment with emerging scientific evidence.

Importance of clinical nutrition in gastrointestinal diseases Nutritional treatment (clinical nutrition) is a medical procedure involving the assessment of the patient's nutritional status and needs, and administration of an adequate supply of energy, protein, electrolytes, vitamins, trace elements, and water by enteral, parenteral, or oral feeding, while monitoring the clinical status. It is an integral part of the treatment process. Indications for nutritional treatment are current malnutrition or expected inability to incorporate a full oral diet for more than 7 days.[1]

The incidence of malnutrition is high in patients with advanced gastrointestinal diseases. Malnutrition increases the risk of complications and worsens prognosis, while proper nutrition mitigates these risks.[2,3] Disease-related malnutrition is exacerbated in hospitalized individuals and has a significant negative impact on patient outcomes, hospitalization time, and treatment costs. Unfortunately, nutritional status is often not assessed in outpatients, and the inclusion of nutritional treatment in comprehensive gastroenterology treatment is rare.

Aim of the guideline The aim of the guideline was to improve the modern diagnosis of malnutrition and to facilitate the implementation and management of clinical nutrition in patients with gastrointestinal diseases in Poland, in accordance with the current state of knowledge. The recommendations of the Agency for Health Technology Assessment and Tariff System (AOTMiT) on the principles of the guideline construction were considered in its development. AOTMiT is a Polish consultative and advisory entity with legal personality, supervised by the Polish Minister of Health, whose role is to assist the Minister of Health in the decision-making process with regard to the financing of medicines and other technologies in

TABLE 1 Criteria for assessing the quality of evidence[4]

Quality of evidence	Criteria
High	• One or more high-quality, well-conducted RCTs that yield consistent results and with directly usable conclusions are available. • Further studies are highly unlikely to affect the estimated effect.
Moderate	• RCTs are available but have important limitations, such as biased assessment of the treatment effect, high patient loss to follow-up, lack of blinding, unexplained heterogeneity, indirect inferences relating to similar (but not identical) study populations, or studies conducted in a very small number of patients or considering a small number of events (end points). • There is available evidence from well-designed controlled studies without randomization, from well-designed analytical cohort or clinical-control studies, and from multiple case series with or without interventions. • Further studies are likely to have an important impact on the estimated effect and may change it.
Low	• Evidence comes mostly from observational studies, typically of low quality due to the risk of bias. • Further research will almost certainly have an important impact on the estimated effect and is likely to change it.
Very low	• Evidence is conflicting, of low quality, or with missing results, so that the balance of benefits and risks cannot be established. • Any estimated effect is highly uncertain as evidence is unavailable or conclusions cannot be drawn.

Abbreviations: RCT, randomized controlled trial

TABLE 2 Criteria for assessing the strength of recommendation[4]

Strength of recommendation	Criteria
Strong	The benefits clearly outweigh the risks and burdens, or vice versa. Usually formulated as *We recommend* in recommendations.
Weak	Benefits closely balance the risks and burdens. The recommendations are usually formulated as *We suggest*.

the health care system. Health technology assessment is used in a way that is reproducible, transparent, within a specified methodological standard, and evidence-based.

Health issues covered in the guideline The following issues are discussed in this guideline: 1) diagnosis of malnutrition; 2) gastrointestinal tract access for enteral nutrition; 3) vascular access for parenteral nutrition; 4) clinical nutrition in inflammatory bowel diseases (IBDs); 5) clinical nutrition in acute pancreatitis (AP); 6) clinical nutrition in chronic pancreatitis (CP); 7) clinical nutrition in liver disease; 8) clinical nutrition in a geriatric patient.

Target patient populations The recommendations relate to the management of adult patients with gastrointestinal diseases requiring nutritional assessment, diagnosis of malnutrition, and / or the use of clinical nutrition.

Recommendations Our recommendations, with the quality of the evidence and strength of the recommendations, are listed below. The phrase *We recommend* indicates a statement regarding which the authors have reached consensus on the benefits the patient would derive from the treatment, and this statement should be followed wherever possible. The phrase *We suggest* means that the patient may benefit from the treatment, and this recommendation should be considered in therapeutic decision-making. The phrase *We do not recommend* indicates a statement regarding which the authors have reached full agreement on the increased risk or a lack of additional benefit for the patient.

Interpretation of the guideline Each therapeutic recommendation is accompanied by 3 pieces of information (TABLES 1 and 2): 1) quality of the evidence, classified as high, moderate, low, or very low; 2) strength of the recommendation, classified as strong or weak; and 3) degree of expert consensus (voting score presented on the Likert scale of 1–6, with 1 indicating total rejection of the recommendation, and 6 indicating total support).

Guideline on clinical nutrition in gastrointestinal diseases

Diagnosis of malnutrition and indications for clinical nutrition Statement 1 We recommend the use of screening nutritional assessments in all inpatients and outpatients at a risk of malnutrition, particularly patients with chronic gastrointestinal diseases (quality of evidence: high; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 6%; 6 – Total support, 94%.

Comments are provided in Supplementary material. See appropriate references.[4-7]

The use of validated diagnostic tools, such as the Nutritional Risk Screening 2002 (NRS 2002) questionnaire[8] or the Subjective Global Assessment of nutritional status (SGA),[9] is recommended for nutritional status screening (TABLES 3 and 4). The NRS 2002 questionnaire considers deterioration in nutritional status, severity of the disease and associated increased nutrient requirements, and age of the patient. The total score ranges from 0 to 9 points, with a score of 3 or more indicating that nutritional treatment is warranted.[9] The SGA includes elements

TABLE 3 Nutritional Risk Screening 2002 scale[10]

Impaired nutritional status		Severity of the disease (increased nutrient demand)	
0 = none	Normal nutritional status	0 = none	Normal nutritional requirements
1 = mild	Weight loss >5% in the last 3 months or food intake <50%–75% of normal requirements in the preceding week	1 = mild	Hip fracture, chronic diseases with potential complications, eg, liver cirrhosis, COPD, diabetes, cancer
2 = moderate	Weight loss >5% in the last 2 months or BMI 18.5–20.5 kg/m^2 accompanied by impaired general condition or food intake of 25%–60% of normal requirements in the preceding week	2 = medium	Major abdominal surgery, stroke, severe pneumonia, postoperative renal failure, chemotherapy, hematologic malignancy
3 = severe	Weight loss >5% in the last month (>15% in the last 3 months) or BMI <18.5 kg/m^2 accompanied by impaired general condition or food intake of 0%–25% of normal requirements in the preceding week	3 = severe	Head injury, bone marrow transplantation, need for admission to the ICU
+1 point if patient age >70 years			
Total score[a] =			

a In patients with a score ≥3 points, nutritional treatment should be implemented.

Abbreviations: BMI, body mass index; COPD, chronic obstructive pulmonary disease; ICU, intensive care unit

of medical and nutritional history (change in weight in the past 6 months and 2 weeks, changes in diet, gastrointestinal symptoms, assessment of physical capacity, and nutrient requirements) and physical examination. Based on the assessment, the patient is classified as having a normal nutritional status or moderate-to-severe malnutrition. Other screening tests used to diagnose malnutrition are the Nutrition Screening Tool, Malnutrition Universal Screening Tool, and Mini Nutritional Assessment.[1]

Statement 2 We recommend performing an in-depth nutritional assessment and evaluating the type and cause of malnutrition in patients who are found to be malnourished or at a risk of malnutrition on the screening assessment (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 6%; 6 – Total support, 94%.

Comments are provided in Supplementary material. See appropriate references[2,10-17] and TABLE 5.

Statement 3 We recommend the implementation of nutritional therapy in patients diagnosed with malnutrition or at a risk of malnutrition (quality of evidence: high; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 13%; 6 – Total support, 87%.

Comments are presented in Supplementary material. See appropriate references.[1]

Absolute and relative contraindications to clinical nutrition Contraindications to enteral feeding comprise[3,17,18]:

1. Gastrointestinal failure (significant mechanical or functional gastrointestinal transit disorders, high-output intestinal fistula with a short segment of intestine below the fistula or no access to this segment, significant malabsorption); in such cases, the implementation of parenteral nutrition should be considered;

2. Inability to access the gastrointestinal tract (anatomical abnormalities after surgery, significant contraindications to percutaneous enteral access, other generalized lesions in the peritoneal cavity, eg, portal hypertension); in such cases, the implementation of parenteral nutrition should be considered;

3. Poor prognosis of a patient ineligible for nutritional treatment (agony, advanced terminal condition);

4. Lack of consent from the patient.

Contraindications to parenteral nutrition comprise[19,20]:

1. Hemodynamic instability;

2. Failure of vital organs;

3. Severe metabolic disorders (except for hypertriglyceridemia [serum triglyceride level >9.065 mmol/l]; in this case, it is not necessary to stop parenteral nutrition completely but infusion of fat emulsions needs to be stopped);

4. Inability to establish a safe vascular access;

5. A functional gastrointestinal tract allowing for another method of feeding;

6. Poor prognosis of a patient ineligible for nutritional therapy (agony, advanced terminal condition);

7. Lack of consent from the patient.

Endoscopic access for enteral nutrition Patients who cannot be fed effectively via the oral route require enteral nutritional treatment. In the case of an unobstructed, properly functioning gastrointestinal tract, enteral nutrition is preferred. Enteral feeding tubes can be inserted through natural orifices (nostrils, mouth) or percutaneously. Nasogastric (NGT) and nasojejunal (NJT) tubes are flexible probes inserted into the stomach or intestine, respectively, through the nose. Percutaneous gastrostomy

TABLE 4 Subjective Global Assessment scale[10]

I. Interview
1. Age (y) ..... height (cm) ..... weight (kg) ..... sex F/M
2. Weight change
a. weight loss in the last 6 months ..... kg ..... (%)
b. weight change in the last 2 weeks
– increase,
– unchanged,
– decrease
3. Changes in food intake
– unchanged, adequate
– changes: duration ..... (weeks), inadequate
Type of diet:
– suboptimal diet,
– liquid complete diet,
– hypocaloric liquid diet,
– starvation
4. Gastrointestinal symptoms (persisting for more than 2 weeks)
– no symptoms,
– nausea,
– vomiting,
– diarrhea,
– anorexia
5. Physical fitness
– unchanged,
– changes: duration ..... (weeks)
Type of work:
– limited work,
– walking
– supine position
6. Disease vs nutrient requirements
(increase in metabolic demand due to illness)
– none,
– small,
– medium,
– large
II. Physical examination
The degree of sophistication should be determined:
0 – no change, 1 – light, 2 – medium, 3 – heavy
– loss of subcutaneous fat on the triceps and chest muscles,
– muscle wasting (quadriceps, shoulder),
– swelling over the sacrum,
– swollen ankles,
– ascites
III. Subjective global assessment of nutritional status (SGA)
A. Proper nutritional status,
B. Suspected malnutrition or moderate malnutrition,
C. Cachexia,
D. High risk of malnutrition

provides nutritional access to the stomach through abdominal integuments that can be created surgically (percutaneous surgical gastrostomy), endoscopically (percutaneous endoscopic gastrostomy [PEG]), or under radiological control (ultrasound or fluoroscopy: radiologically inserted gastrostomy). Percutaneous jejunostomy consists in providing access to the small intestine; the access can be created surgically (percutaneous surgical jejunostomy) or endoscopically (direct percutaneous endoscopic jejunostomy [D-PEJ]). PEG with extended access to the small intestine (percutaneous endoscopic gastrojejunostomy [PEG-J]) involves insertion of a percutaneous gastrostomy tube through which an additional, smaller-diameter tube is inserted into the small intestine.[21]

Indications for endoscopic access for enteral nutrition Statement 4 We recommend establishing an endoscopic access for enteral nutrition for the following indications: 1) clinical conditions that prevent oral food intake (neurological diseases, upper gastrointestinal stenosis) but do not impair gastrointestinal function; 2) acute and/or chronic diseases causing a catabolic state in which oral feeding becomes insufficient (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Statement 5 We recommend NGT or PEG feeding in patients with head and neck cancer (HNC) requiring chemoradiotherapy, presenting with dysphagia, reduced food intake, and significant weight loss (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 18%; 6 – Total support, 82%.

Statement 6 We suggest PEG placement in patients with HNC requiring combination treatment with chemotherapy, if they have risk factors indicating the need for tube feeding for more than 4 weeks (quality of evidence: low; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 50%; 6 – Total support, 44%.

Comments are provided in Supplementary material. See appropriate references[21,22] and **TABLE 6**.

Contraindications to endoscopic access for enteral nutrition Statement 7 We do not recommend the insertion of enteral feeding tubes either through natural orifices (NGT/NJT) or via a percutaneous access (PEG, PEG-J, or D-PEJ) in patients with mechanical gastrointestinal obstruction distal to the planned tube placement site, or in individuals with active peritonitis, uncompensated coagulopathy, and intestinal ischemia (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 6%; 6 – Total support, 94%.

TABLE 5 Global Leadership Initiative on Malnutrition criteria for assessing malnutrition

Phenotypical criteria		
Unintentional weight loss	Low BMI	Reduction in muscle mass
Reduction in body weight >5% in up to 6 months or >10% in more than 6 months	BMI <20 kg/m^2 in individuals <70 years or BMI <22 kg/m^2 in individuals >70 years	Assessed using recommended methods[a]
Etiological criteria		
Reduced food intake or absorption limitations	Burden of disease/inflammation	
Reduction in food intake by no more than 50% of requirements over a period of more than a week OR Any reduction over a period of more than 2 weeks OR Any gastrointestinal pathology that reduces nutrient absorption and assimilation	Inflammation or chronic disease contributing to increased energy requirements and increased muscle catabolism	

a Assessment of muscle mass based on the fat free mass index (kg/m^2) using dual-beam X-ray absorptiometry or other body composition assessment methods, such as bioimpedance, computed tomography or magnetic resonance imaging, appendicular skeletal muscle mass, or the Appendicular Skeletal Muscle Index

Abbreviations: see TABLE 3

TABLE 6 Indications for the placement of endoscopic enteral feeding access[30]

Enteral access	
Nasogastric	Nasointestinal
Neurological diseases with dysphagia	Indications for enteral feeding + altered anatomy
Stroke	Indications for enteral feeding + previous gastrectomy
Motor neuron disease	Indications for enteral feeding + Roux-en-Y gastric bypass
Cerebral palsy	Severe symptomatic gastroparesis
Parkinson disease	Pyloric stenosis
Head injury	Severe reflux with risk of aspiration pneumonia
Neoplastic upper gastrointestinal stenosis • Head and neck cancer • Cancer of the esophagus	
Benign stenosis of the esophagus	
Acute diseases with hypermetabolism • Critically ill patients • Severe burns • Severe acute pancreatitis	
Chronic diseases with hypermetabolism • Oncological diseases • Chronic lung diseases • Anorexia nervosa	
Percutaneous access	
Percutaneous endoscopic gastrostomy	Percutaneous endoscopic gastrostomy (PEG) OR PEG with extension to the small intestine OR Direct endoscopic jejunostomy
Enteral nutrition required > 4 weeks	Enteral nutrition required > 4 weeks

Statement 8 We suggest that recent gastrointestinal bleeding due to peptic ulcer disease, with risk of rebleeding, hemodynamic instability, acute respiratory failure, or ascites, should be considered relative contraindications to procedures involving the creation of percutaneous enteral access (PEG, PEG-J, or D-PEJ) (quality of evidence: low; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 12%; 5 – Acceptance, 44%; 6 – Total support, 44%.

Comments are provided in Supplementary material. See appropriate references.[20,22]

Defects in the abdominal wall, such as open abdomen, stoma or drains, surgical scars, or adhesions can increase the risk of complications of percutaneous enteral access. In such cases, the potential target site for PEG insertion should be carefully planned. Maintaining a distance of at least 2 cm from any surgical scar reduces the risk of damage to the intestinal loops, potentially trapped in scar tissue or adhesions between the abdominal wall and the external surface of the stomach or intestine.[9,21-28]

Choice of endoscopic access for enteral nutrition and perioperative management Statement 9 We recommend the use of NGTs or NJTs in patients who are expected to require enteral nutrition for less than 4 weeks. If enteral feeding is expected to be necessary for more than 4 weeks, percutaneous access should be considered, depending on the clinical situation (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Statement 10 We recommend that access to the stomach should be the first choice for nutritional access. In patients with impaired gastric emptying, intolerance to gastric feeding, or those at a high risk of aspiration, we recommend access to the small bowel. In patients with altered gastric anatomy (eg, postsurgery), the access of choice is percutaneous endoscopic nutritional esophagogastrostomy (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 12%; 5 – Acceptance, 19%; 6 – Total support, 69%.

Statement 11 We recommend the "pull" technique as the standard method of PEG placement. In the cases where this technique is contraindicated, for example, in patients with upper gastrointestinal stenosis or HNC, we recommend the "push" technique (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Statement 12 In patients requiring long-term enteral feeding using the small bowel access, we recommend feeding via PEG-J or D-PEJ. The choice between PEG-J and D-PEJ depends on patient characteristics (anatomy, need for gastric aspiration, previously inserted PEG) as well as the experience of the local center (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 31%; 6 – Total support, 69%.

Statement 13 We recommend intravenous administration of a prophylactic single dose of antibiotic (amoxicillin with clavulanic acid or cefazolin) to reduce the risk of infectious complications. In the cases of sensitization, prophylaxis should follow the protocol of the center (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 31%; 6 – Total support, 69%.

Comments are provided in Supplementary material. See appropriate references.[29-37]

Prevention and management of perioperative adverse events Statement 14 We recommend confirming the intended position of the NGT radiologically. We do not recommend checking the position of the NGT exclusively by auscultation, capnography, or aspirate pH measurement (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 19%; 6 – Total support, 75%.

Statement 15 We recommend monitoring vital signs of the patient after PEG, PEG-J, and D-PEJ insertion. If adverse events are suspected (perforation or parenchymal organ / bowel loop damage), we recommend abdominal computed tomography (CT). When abdominal bleeding is suspected (presence of abdominal fluid with increased echogenicity on ultrasound or increased density on CT), we suggest diagnostic laparoscopy or angiography (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 19%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references[22,23,38-47]

Postoperative management of endoscopic feeding access Statement 16 We suggest starting nutrition supply through the inserted PEG and PEG-J within 3–4 hours postsurgery, and through D-PEJ within 24 hours postsurgery (quality of evidence: high; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 12%; 6 – Total support, 82%.

Statement 17 We recommend that drugs be administered via the gastrointestinal access, depending on their pharmaceutical form, according to separate recommendations. We suggest that drug delivery through the feeding access should be in a liquid form. We recommend flushing the feeding access before and after drug administration (quality of evidence: low; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 44%; 6 – Total support, 50%.

Statement 18 We recommend antiseptic management and daily dressing changes up to 72 hours after insertion of the feeding access to prevent infectious complications. In the case of

systemic infectious complications, we recommend broad-spectrum antibiotic therapy until a blood culture result with antibiogram is available, followed by targeted antibiotic therapy (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 19%; 6 – Total support, 81%.

Statement 19 We recommend mobilizing the established feeding access and loosening the stabilizers to prevent buried bumper syndrome (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[24,38,48-58]

Dislocation, replacement, and removal of feeding access Statement 20 We do not recommend replacing a feeding access without endoscopic follow-up or evaluation using a different imaging modality in the cases of early dislocation (<4 weeks after insertion). In the cases of late dislocation (>4 weeks after insertion) of the feeding access, its replacement without endoscopic control, using a balloon kit, is safe (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 44%; 6 – Total support, 56%.

Statement 21 We recommend replacement of the feeding access if it is damaged. We do not recommend routine replacement of a PEG with an internal stabilizer. We recommend routine replacement of a PEG with a balloon every 3–6 months (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 19%; 6 – Total support, 81%.

Statement 22 We do not recommend removal of the feeding access earlier than 4 weeks after insertion. If definitive removal of the feeding access is necessary, we suggest percutaneous (for a soft mushroom) or endoscopic (for a hard mushroom) removal (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[18,59-62]

Vascular access for parenteral nutrition Statement 23 We recommend establishing a protocol for the care of the central venous access that ensures a rate of de-epithelial sepsis lower than 1/300 catheter-days.

In patients treated for chronic intestinal failure (CIF), we recommend the use of a vascular access device for home parenteral nutrition (HPN), such as a tunneled-cuffed centrally inserted central catheter (CICC) or peripherally inserted central catheter (PICC) (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 12%; 5 – Acceptance, 19%; 6 – Total support, 69%.

Comments are provided in Supplementary material. See appropriate references.[63-65]

Statement 24 In independent, active patients with CIF of a nononcologic etiology, we recommend the use of CICC for parenteral nutritional therapy (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 31%; 6 – Total support, 63%.

Comments are provided in Supplementary material. See appropriate references.[66,67]

Statement 25 We recommend the use of PICC for vascular access in patients treated for CIF who require simultaneous interventions by multiple medical teams in addition to HPN. We recommend the long-term use of nutritional treatment via PICC in dependent patients requiring constant care by another person. The use of PICC should be considered in patients with cutaneous gastrointestinal fistulas (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 6%; 4 – Partial acceptance, 0%; 5 – Acceptance, 44%; 6 – Total support, 50%.

Comments are provided in Supplementary material. See appropriate references.[68-70]

Statement 26 In long-term parenteral nutritional treatment, we do not recommend the use of subcutaneous vascular ports (totally implantable venous access ports) (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[71,72]

Inflammatory bowel disease IBDs are a heterogeneous group of idiopathic chronic inflammatory bowel conditions characterized by periods of exacerbation and remission. They include

Crohn disease (CD) and ulcerative colitis (UC), which have similar pathomechanisms and clinical manifestations. The European Society for Clinical Nutrition and Metabolism recommendations,[73] the Polish Society of Gastroenterology and National Consultant in Gastroenterology guidelines for the management of patients with CD,[74] and the International Organization for the Study of IBD 2020 guidelines[75] were considered in the preparation of the recommendations listed below.

Statement 27 Patients with IBDs are at a high risk of developing malnutrition, and we recommend performing a nutritional assessment in every inpatient and in a selected group of outpatients (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 6%; 6 – Total support, 94%.

Comments are provided in Supplementary material. See appropriate references.[73,74,76]

Statement 28 In patients with IBDs, we recommend a diet rich in n-3 fatty acids and poor in n-6 fatty acids (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 10%; 5 – Acceptance, 40%; 6 – Total support, 50%.

Comments are provided in Supplementary material. See appropriate references.[77]

Statement 29 We do not recommend a diet rich in highly processed foods and food additives, including emulsifiers (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[73,75,78]

Statement 30 At the current stage of knowledge, no recommendation can be made regarding dietary fiber intake for patients with IBDs (quality of evidence: low; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 6%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 13%; 5 – Acceptance, 44%; 6 – Total support, 37%.

Comments are provided in Supplementary material. See appropriate references.[73,79,80]

Statement 31 A nonprotein energy supply of 20–25 kcal/kg body weight (BW)/day is recommended in patients with IBDs (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 37%; 6 – Total support, 56%.

Comments are provided in Supplementary material. See appropriate references.[73]

Statement 32 We recommend a protein supply of approximately 1 g/kg BW/day in patients with IBDs. During the period of disease exacerbation, we recommend increasing the protein supply to 1.2–1.5 g/kg BW/day (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 31%; 6 – Total support, 69%.

Comments are provided in Supplementary material. See appropriate references.[73,75]

Statement 33 At the current stage of knowledge, it is not possible to make a recommendation on the specific oral diet that should be followed by patients with IBDs in the exacerbation phase of the disease to help achieve remission (quality of evidence: low; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 6%; 4 – Partial acceptance, 25%; 5 – Acceptance, 38%; 6 – Total support, 31%.

Comments are provided in Supplementary material. See appropriate references.[73-76,81]

Statement 34 We recommend oral nutritional supplements (ONSs) as an adjunctive therapy to the standard diet as the first stage of nutritional intervention in patients with a negative protein–calorie balance (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 25%; 6 – Total support, 69%.

Comments are provided in Supplementary material.

Statement 35 If oral nutrition becomes insufficient, we recommend enteral nutrition as the next step in patients with a functional gastrointestinal tract (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 13%; 5 – Acceptance, 12%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[73,75,82,83]

Statement 36 In adult patients in the active phase of CD (mild and moderate forms), we recommend considering the introduction of a specialized CD exclusion diet, alone or in combination with enteral nutrition (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 13%; 5 – Acceptance, 31%; 6 – Total support, 56%.

Comments are provided in Supplementary material. See appropriate references.[73,75,83,84]

Statement 37 We do not recommend enteral nutrition in adult patients with UC who are effectively fed via the oral route, nor parenteral nutrition in patients with a functioning gastrointestinal tract (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 25%; 6 – Total support, 69%.

Statement 38 In severe exacerbation of UC, we suggest enteral nutrition as the first-line management in patients with a functional gastrointestinal tract. We recommend parenteral nutrition in this patient group when the patient cannot be effectively fed via the gastrointestinal route (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 25%; 6 – Total support, 69%.

Comments are provided in Supplementary material. See appropriate references.[85-87]

Statement 39 In malnourished patients with indications for surgery, if possible, we recommend delaying surgery for 7 to 14 days or longer, until the nutritional status improves. The optimal timing of surgery should be based on the benefit of continued metabolic preparation and the urgency of surgery due to increasing or regressing clinical symptoms (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 19%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[73,82,87-90]

Acute pancreatitis AP is associated with high levels of catabolism, particularly in the necrotic form.[91] The prevalence of malnutrition in patients with AP is high and increases dynamically during hospitalization.[92,93] Malnutrition is a strong predictor of AP-associated mortality (3-fold increase in risk) and morbidity (5-fold increase in the risk of sepsis and respiratory failure, 6-fold increase in the risk of shock).[94]

Statement 40 We recommend that patients with AP be considered at a moderate-to-high nutritional risk due to the catabolic nature of the disease and the impact of nutritional status on the disease course (quality of evidence: moderate; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 13%; 5 – Acceptance, 31%; 6 – Total support, 56%.

Comments are provided in Supplementary material. See appropriate references.[91,92,95,96]

Statement 41 We recommend early initiation of oral nutrition in patients with predicted mild AP after resolution of complaints, regardless of lipase activity (quality of evidence: moderate, strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 6%; 6 – Total support, 94%.

Comments are provided in Supplementary material. See appropriate references.[97-99]

Statement 42 We recommend the implementation of enteral nutrition from the start of hospitalization in all malnourished patients and individuals with predictive factors for severe AP, and within 72 hours of admission to a hospital in all patients in whom oral nutrition does not cover 60% of the protein–calorie requirements (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 13%; 5 – Acceptance, 12%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[100-105]

Statement 43 When nutrient requirements cannot be met via the gastrointestinal route (contraindications, intolerance, lack of access), we recommend supplementary or total parenteral nutrition not exceeding metabolic limits (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 7%; 5 – Acceptance, 6%; 6 – Total support, 87%.

Comments are provided in Supplementary material. See appropriate references.[91,106-109]

Statement 44 In patients with severe AP and concomitant obesity, we suggest supplying an isocaloric high-protein diet (>1.3 g/kg adjusted BW/day) in the acute phase of the disease (quality of evidence: low; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 25%; 5 – Acceptance, 19%; 6 – Total support, 56%.

See appropriate references.[20,91,110,111]

Chronic pancreatitis CP is an irreversible inflammatory process causing permanent progressive damage to the parenchyma of the organ (fibrosis), leading to impaired exocrine and endocrine pancreatic

function. The most common symptom in patients with CP is postprandial pain. As a result, the patients reduce or avoid food intake, which leads to malnutrition and micro- and macronutrient deficiencies, especially those of fat-soluble vitamins.[111,112]

Statement 45 We recommend assessing the nutritional status of patients with CP at each follow-up outpatient visit, at least every 12 months, based on clinical scales, symptoms, anthropometric assessment, and available biochemical and imaging data (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 25%; 6 – Total support, 69%.

Comments are provided in Supplementary material. See appropriate references.[91,112-118]

Statement 46 Restrictive diets are not recommended for patients with CP (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 13%; 6 – Total support, 87%.

Comments are provided in Supplementary material. See appropriate references.[117,119-125]

Statement 47 We recommend the implementation of ONS in patients with CP in the following clinical situations: 1) in malnourished patients, when oral nutrition is insufficient to meet the protein and caloric requirements; 2) in individuals with persistent symptoms of malabsorption despite adequate enzyme supplementation and exclusion of small intestinal bacterial overgrowth (SIBO) (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 31%; 6 – Total support, 69%.

Comments in Supplementary material. See appropriate references.[125,126]

Statement 48 We recommend supplementation of fat-soluble vitamins (A, D, E, and K), magnesium, and iron in patients with CP and symptoms of malabsorption syndrome. In patients with CP without malabsorption syndrome, we do not recommend supplementation of all fat-soluble vitamins (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 7%; 5 – Acceptance, 12%; 6 – Total support, 81%.

Comments are provided in Supplementary material. See appropriate references.[90,113,116-118,127-131]

Statement 49 We recommend the implementation of enteral feeding in patients with CP who cannot tolerate an oral diet, and who experience persistent nausea and vomiting, abdominal pain, delayed gastric emptying, or progressive weight loss refractory to oral therapy (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 13%; 5 – Acceptance, 12%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[132-137]

Statement 50 We recommend the implementation of parenteral nutrition in patients with gastrointestinal failure, intolerance of enteral nutrition, or progressive weight loss refractory to enteral nutrition (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 13%; 6 – Total support, 87%.

Comments are provided in Supplementary material. See appropriate references.[123,133,138]

Liver disease Malnutrition in liver disease results from several factors, including chronic inflammation, lack of appetite, early satiety, taste disturbances, dietary salt restriction, gastrointestinal symptoms, SIBO, hepatic encephalopathy, protein loss with peritoneal fluid discharge, intestinal malabsorption, as well as impaired protein, carbohydrate, and fat metabolism.[139] Malnutrition occurs in up to 80% of individuals with decompensated cirrhosis. Nutritional treatment decreases mortality as a result of a reduced risk of infection and encephalopathy and improved liver function.[140,141]

Patients at a high risk of malnutrition are those with body mass index below 18.5 kg/m^2 and Child–Pugh class C. The dietary history should include the amount and type of food, fluids, and supplements consumed, their distribution throughout the day, and the reasons for restricting the calorie intake.[142] It is recommended that nutritional status be monitored every 6 to 12 months in stable outpatients, and once a week in hospitalized patients.

Statement 51 For the calculation of the basal energy and protein requirements of patients with cirrhosis without ascites, we recommend taking the actual BW, whereas for patients with cirrhosis and ascites, we suggest using one of the following methods to estimate metabolically active BW (excluding peritoneal fluid weight): 1) ideal BW calculated based on height (height [cm] – 100); 2) BW measured just after peritoneal fluid discharge; 3) difference between actual BW and fluid weight representing 5% of current weight for mild ascites, 10% for moderate ascites, and 15% for advanced ascites, depending on the severity of the ascites, with an additional subtraction of 5% of BW for bilateral peripheral edema of the lower

extremities (quality of evidence: low; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 12%; 5 – Acceptance, 44%; 6 – Total support, 44%.

Comments are provided in Supplementary material. See appropriate references.[142-144]

Statement 52 In patients with nonalcoholic steatohepatitis (metabolic dysfunction–associated steatohepatitis), we recommend a Mediterranean diet and weight reduction, as they are associated with reduced insulin resistance and hepatic steatosis as well as a lower risk of ischemic heart disease and diabetes (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 25%; 5 – Acceptance, 31%; 6 – Total support, 44%.

Comments are provided in Supplementary material. See appropriate references.[141,143,145,146]

Statement 53 In patients with cirrhosis, we recommend a daily total energy intake of 30–35 kcal/kg/day and a protein supply of 1.5 g/kg/day for malnourished patients and 1.2 g/kg/day for other patients, taking metabolic limits into account (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 19%; 6 – Total support, 81%.

Comments are provided in Supplementary material. See appropriate references.[111,139,140,142,147-152]

Statement 54 We recommend withholding enteral feeding for 48–72 hours after an episode of esophageal / gastric variceal bleeding (until bleeding is controlled), as enteral feeding makes endoscopic intervention more difficult, increases visceral flow, and may exacerbate variceal bleeding (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 7%; 5 – Acceptance, 37%; 6 – Total support, 56%.

Comments are provided in Supplementary material. See appropriate references.[153-155]

Statement 55 In patients with advanced alcoholic liver disease, we recommend a daily total energy intake of 30–35 kcal/kg/day and a protein supply of 1.2–1.5 g/kg/day, taking metabolic limits into account (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 25%; 6 – Total support, 69%.

Comments are provided in Supplementary material. See appropriate references.[141,156-158]

Statement 56 We recommend monitoring blood ammonia levels and strict glycemic control during feeding in patients with acute liver failure (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 7%; 5 – Acceptance, 31%; 6 – Total support, 62%.

Comments are provided in Supplementary material. See appropriate references.[20,141,142,158,159]

Statement 57 To reduce frailty syndrome in patients being prepared for liver transplantation, we recommend a daily total energy intake of 30–35 kcal/kg/day and a protein supply of 1.2–1.5 g/kg/day, taking metabolic limits into account (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 44%; 6 – Total support, 56%.

Comments are provided in Supplementary material. See appropriate references.[141,142,144,160,161]

Statement 58 To prevent liver damage associated with parenteral nutrition, we recommend not exceeding metabolic limits and avoiding excessive macronutrient energy supply (overfeeding) (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[162-165]

The geriatric patient in gastroenterology According to the World Health Organization classification and Polish legislation, 60 years of age is considered the onset of old age. In the literature, the geriatric patient is typically defined as an older person, usually in late old age, with multimorbidity and functional deficits, often manifesting frailty syndrome, prone to stress, and at a risk of multiple organ failure.

Malnutrition is common in the older population. In the PolSenior2 study[166] published in 2021, the prevalence of malnutrition in the geriatric population in Poland was 3.2%, and 23.8% of the study population were at risk of malnutrition. Malnutrition is significantly more common in individuals over 80 years of age. It is diagnosed in every sixth person in the over-90 age group, every tenth person in the 85–89-year age group, and every fifteenth person in the 80-84–year age group. Epidemiological statistics indicate that malnutrition affects 6% of ambulatory care patients, 22% of hospitalized patients, 17.5% of

nursing home residents, 28.7% of long-term care patients, and 29.4% of patients in rehabilitation wards. It was also noted that in 70% of malnourished patients who are admitted to a hospital, nutritional status deteriorates during hospitalization. Malnutrition in older adults leads to several adverse health changes, chief of which are: impaired muscle strength and psychomotor performance leading to an increased incidence of injuries and falls, impaired gastrointestinal function (impaired intestinal peristalsis, impaired digestion and absorption, liver steatosis, and reduced pancreatic weight and digestive enzyme secretion), impaired circulatory (impairment of myocardial contractile function) and respiratory (atrophy of respiratory muscles with subsequent deterioration of ventilatory efficiency and increased predisposition to pneumonia) function, impaired consciousness, and susceptibility to pressure sores and infections. The range of adverse consequences of malnutrition for older adults, and the frequency of this phenomenon, suggest the importance of assessing the nutritional status of the geriatric patient to implement adequate nutritional intervention at an early stage.

Statement 59 We suggest that in older patients with diagnosed malnutrition or at a high nutritional risk who reside in 24-hour and inpatient health care units ONSs should be administered in the traditional manner or at the time of solid medication administration, that is, in accordance with the Medication Pass Nutritional Supplement Program system (quality of evidence: moderate; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 19%; 5 – Acceptance, 37%; 6 – Total support, 44%.

Comments are provided in Supplementary material. See appropriate references.[167]

Statement 60 In older patients with oropharyngeal dysphagia, we recommend a clinical assessment of swallowing function by a speech therapist or phoniatrist. In older patients diagnosed with malnutrition, those at a high nutritional risk, and those with oropharyngeal dysphagia, we recommend modifying the consistency of the meals consumed and fortifying the diet as the first step. We recommend enteral nutrition in patients in whom adequate energy and protein requirements cannot be met via the oral route despite attempts to use compensatory techniques to improve swallowing (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 7%; 5 – Acceptance, 31%; 6 – Total support, 62%.

Comments are provided in Supplementary material. See appropriate references.[168,169]

Statement 61 We recommend that a multidisciplinary nutrition support team, coordinated by physicians, nurses, dieticians, and pharmacists, be established in each 24-hour and inpatient health care unit, and that a standard operating procedure for nutritional care is in place (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 7%; 4 – Partial acceptance, 6%; 5 – Acceptance, 12%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[170]

Statement 62 We recommend routine assessment for malnutrition and high nutritional risk using validated clinical questionnaires in all hospitalized older patients, including those with excess body weight. In the case of a positive screening assessment for malnutrition, we recommend assessing the degree of malnutrition and then implementing an appropriate nutritional intervention (quality of evidence: high; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 7%; 5 – Acceptance, 12%; 6 – Total support, 81%.

Comments are provided in Supplementary material. See appropriate references.[171,172]

Statement 63 In older patients, we recommend a daily energy intake of 30 kcal/kg BW/day, which should be individually adjusted according to the nutritional status, physical activity level, and coexisting chronic diseases (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[3,173,174]

Statement 64 In older patients, we recommend a daily protein supply of at least 1 g/kg BW/day. If required, the dose may be higher, with individual adjustment for nutritional status, physical activity level, and chronic comorbidities (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 38%; 6 – Total support, 62%.

Comments in Supplementary material. See appropriate references.[175,176]

Statement 65 We suggest the use of leucine-enriched formulations with vitamin D_3 supplementation in nutritional interventions with special-purpose medical foods due to the efficacy of these ingredients in sarcopenia in older patients

(quality of evidence: moderate; strength of recommendation: weak).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 25%; 5 – Acceptance, 44%; 6 – Total support, 31%.

Comments are provided in Supplementary material. See appropriate references.[177,178]

Statement 66 For enteral feeding in older patients, we suggest fiber-containing nutrient mixtures (quality of evidence: low; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 6%; 5 – Acceptance, 50%; 6 – Total support, 44%.

Comments are provided in Supplementary material.

Statement 67 In older patients diagnosed with malnutrition or at a high risk of malnutrition requiring enteral or parenteral nutrition, we recommend starting it immediately, and that the caloric content of the formulas be gradually increased over the first 3 days to establish a metabolic limit and minimize the risk of refeeding syndrome.

We also recommend monitoring potassium, magnesium, and phosphorus levels during the first 3 days of nutritional treatment; all these minerals should be supplemented even in mild deficiencies. We recommend performing biochemical tests on subsequent days depending on the metabolic stability of the hospitalized patient, but at least once a week (quality of evidence: moderate; strength of recommendation: strong).

Scale of endorsement: 1 – Total rejection, 0%; 2 – No acceptance, 0%; 3 – Partial rejection, 0%; 4 – Partial acceptance, 0%; 5 – Acceptance, 25%; 6 – Total support, 75%.

Comments are provided in Supplementary material. See appropriate references.[179-182]

Summary Nutritional treatment is an integral part of the therapeutic process in gastroenterology. The intention of the current guideline is to update the current medical knowledge on clinical nutrition in gastrointestinal diseases and to support gastroenterologists in ongoing postgraduate training.

The process is owned by the Clinical Nutrition and Metabolism Section of the Polish Society of Gastroenterology.

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/paim.

ARTICLE INFORMATION

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