
Professional Certificate in Geriatric Nutrition (United Kingdom)

Nutrition Support and Intervention Strategies

Nutrition support and intervention strategies in geriatric nutrition rely on a specific set of terms that enable clinicians, dietitians, and allied health professionals to communicate clearly about the needs of older adults. Mastery of this vocabulary is essential for accurate assessment, planning, implementation, and evaluation of nutrition care. The following explanation presents the most frequently encountered key terms, defines each concept, and illustrates practical applications and common challenges encountered in the United Kingdom context.

Malnutrition refers to a state in which the intake or utilisation of nutrients is insufficient to meet the body's requirements, leading to adverse health outcomes. In older adults, malnutrition is often multifactorial, involving reduced appetite, chronic disease, medication effects, and social factors such as isolation or limited access to food. The term is distinguished from simple under-weight; a person may be within a normal body mass index (BMI) range yet still be malnourished if muscle mass is depleted. In practice, the detection of malnutrition triggers a cascade of interventions, from dietary advice to the prescription of specialised supplements.

Sarcopenia is the age-related loss of skeletal muscle mass and function. Although it shares features with malnutrition, sarcopenia can develop even in individuals who consume adequate calories but lack sufficient protein or physical activity. The European Working Group on Sarcopenia in Older People (EWGSOP) defines sarcopenia using three criteria: low muscle mass, low muscle strength, and poor physical performance. Recognising sarcopenia is crucial because it increases the risk of falls, fractures, and loss of independence. Nutritional strategies aimed at sarcopenia typically focus on higher protein intakes, leucine enrichment, and resistance exercise programmes.

Frailty is a broader clinical syndrome characterised by reduced physiological reserve and increased vulnerability to stressors. While frailty and sarcopenia overlap, frailty encompasses multiple domains including cognition, mobility, nutrition, and social support. The Clinical Frailty Scale (CFS) and the Frailty Index are commonly used tools to categorise frailty severity. Nutrition interventions for frail older adults often combine caloric supplementation with micronutrient optimisation and multidisciplinary support to address the complex interplay of factors that drive decline.

Protein-energy malnutrition (PEM) describes a specific pattern of undernutrition where both protein and energy (calories) are deficient. PEM can manifest as kwashiorkor-type oedema in severe cases, but in the geriatric population it typically presents as weight loss, muscle wasting, and weakened immunity. The identification of PEM guides the selection of high-protein, energy-dense oral supplements or, when oral intake is insufficient, the initiation of enteral nutrition (EN) or parenteral nutrition (PN).

Enteral nutrition (EN) is the delivery of nutrients directly to the gastrointestinal (GI) tract via a tube. EN is preferred over PN when the GI tract is functional because it maintains gut integrity, reduces infection risk, and is more physiologically natural. Common EN routes include nasogastric (NG) tube, naso-jejunal tube,

and percutaneous endoscopic gastrostomy (PEG). In the UK, the National Institute for Health and Care Excellence (NICE) guidelines recommend EN for patients who cannot meet their nutritional needs orally for longer than four weeks, provided there are no contraindications such as severe dysphagia with aspiration risk.

Parenteral nutrition (PN) delivers nutrients directly into the bloodstream through a central or peripheral venous catheter. PN is reserved for situations where the GI tract cannot be used, such as severe bowel obstruction, high output fistulae, or intolerable EN. While PN can be life-saving, it carries risks of catheter-related bloodstream infections, metabolic disturbances, and liver dysfunction. Hence, PN is initiated after careful risk-benefit analysis and usually in collaboration with a specialised nutrition support team.

Oral nutritional supplements (ONS) are concentrated sources of calories, protein, and micronutrients designed to augment oral intake. ONS are available in liquid, semi-solid, and powdered forms, and may be standard or disease-specific (e.g., high-protein, high-energy, or fortified with immune-modulating nutrients). In the UK, ONS are frequently prescribed for older adults who are at risk of malnutrition but can still swallow safely. Evidence shows that regular use of ONS can improve weight, muscle mass, and functional outcomes when paired with dietary counselling.

Dietary counselling is a personalised educational process that helps individuals modify food choices, portion sizes, and eating patterns to meet nutritional goals. In geriatric care, dietary counselling must consider sensory changes (taste, smell), dental status, cultural preferences, and cognitive ability. Effective counselling often incorporates the use of food diaries, visual aids, and goal-setting techniques. It is a cornerstone of nutrition intervention because it empowers patients and carers to sustain long-term improvements.

Fortified meals refer to regular foods that have been enriched with additional nutrients, typically protein, calories, vitamins, and minerals. Fortification can be achieved by adding powdered supplements, protein powders, or commercially prepared fortified products. For example, a standard porridge may be fortified with whey protein concentrate to increase its protein content without substantially altering taste or texture. Fortified meals are particularly useful in care home settings where meals are prepared in bulk and consistency is essential.

Multidisciplinary team (MDT) denotes the collaborative group of professionals involved in the nutrition care of an older adult. An MDT typically includes a dietitian, physician (often a geriatrician), nurse, speech and language therapist, occupational therapist, physiotherapist, pharmacist, and social worker. The MDT approach ensures that nutrition interventions are aligned with medical management, functional goals, and psychosocial needs. Regular MDT meetings facilitate coordinated care plans, reduce duplication of effort, and improve patient outcomes.

Mini Nutritional Assessment (MNA) is a validated screening tool specifically designed for older adults. The MNA consists of a short form (MNA-SF) for rapid screening and a full version for comprehensive assessment. Scores classify individuals as well-nutritional, at risk of malnutrition, or malnourished. The MNA includes questions on dietary intake, weight loss, mobility, psychological stress, neuropsychological problems, and BMI. In practice, the MNA is often the first step in a nutrition care pathway, prompting

further evaluation when risk is identified.

Malnutrition Universal Screening Tool (MUST) is a simple, internationally recognised screening instrument that assesses BMI, unintentional weight loss, and acute disease effect. MUST generates a risk score (low, medium, high) that guides the urgency of intervention. The tool is widely used in hospitals, community services, and residential care. A high MUST score typically triggers a referral to a dietitian and the development of an individualized nutrition care plan.

Nutrition Risk Screening 2002 (NRS-2002) is another screening tool, primarily employed in acute care settings. The NRS-2002 evaluates the severity of disease, recent weight loss, reduced intake, and the presence of a BMI. Calorie (or kilocalorie) is the unit of energy supplied by food. Older adults typically require 30–35 kcal/kg body weight per day, though this may be adjusted based on activity level, disease state, and metabolic stress. For a 70 kg individual, the estimated energy requirement would be approximately 2,100–2,450 kcal/day. Accurate estimation of calorie needs is essential for planning ONS, EN formulas, and fortified meals.

Protein is a macronutrient composed of amino acids, crucial for tissue repair, immune function, and muscle maintenance. The recommended protein intake for healthy older adults is at least 1.0–1.2 g/kg body weight per day, increasing to 1.2–1.5 g/kg for those with acute or chronic illness, and up to 1.5–2.0 g/kg for individuals with severe sarcopenia or after major surgery. Protein quality is assessed by its amino acid profile, with leucine identified as a key trigger for muscle protein synthesis.

Micronutrients include vitamins and trace minerals required in small amounts but essential for metabolic pathways, immune competence, and bone health. Common micronutrient concerns in geriatrics are vitamin D, calcium, vitamin B12, folate, iron, zinc, and selenium. Deficiencies may arise from reduced dietary intake, impaired absorption, or drug-induced depletion. Routine supplementation of vitamin D (800–1,000 IU/day) is often recommended for older adults living in the UK due to limited sunlight exposure.

Dietary reference intakes (DRIs) are evidence-based nutrient reference values that guide recommended intakes for various populations. In the UK, the Scientific Advisory Committee on Nutrition (SACN) provides DRIs for energy, protein, and micronutrients. Understanding DRIs enables clinicians to compare a patient's intake against national standards and to identify gaps that require supplementation.

Geriatric Nutrition Screening (GNS) is a term used to describe the comprehensive process of identifying nutrition risk in older adults. GNS incorporates screening tools (MUST, MNA, NRS-2002), clinical judgement, and contextual information such as social circumstances, medication reviews, and functional status. The process is iterative; repeated screening at admission, discharge, and during community follow-up helps capture changes in nutritional risk.

Nutrition care pathway outlines the sequence of steps from screening to intervention, monitoring, and evaluation. In the UK, many NHS trusts have adopted a standardised pathway that begins with MUST screening on admission, followed by dietitian assessment for those at medium or high risk, and subsequent implementation of ONS, EN, or PN as indicated. The pathway also includes regular re-assessment to adjust the care plan as the patient's condition evolves.

Energy density describes the amount of calories per gram of food or formula. Energy-dense products (e.g., 1.5 kcal/mL) are useful for patients with limited gastric capacity or those who become fatigued quickly during meals. Conversely, low-energy density foods are recommended for patients with obesity or those needing to limit fluid intake, such as in heart failure. Selecting the appropriate energy density is a key decision when formulating EN regimens.

Osmolality measures the concentration of solutes in a fluid and influences the tolerance of EN formulas. High-osmolality feeds (> 350 mOsm/L) may cause gastrointestinal discomfort, diarrhea, or delayed gastric emptying. Therefore, formulas are often categorised as iso-osmolar (≈ 300 mOsm/L) or hypo-osmolar, and the choice is matched to the patient's gastrointestinal function and feeding route.

Feeding tube placement encompasses the procedural aspects of inserting NG, naso-jejunal, or PEG tubes. In the UK, guidelines stipulate that NG tube placement should be performed by trained staff, with verification of placement using pH testing or radiography. PEG placement is usually considered when long-term EN is anticipated (≥ 4 weeks) and the patient's anatomy permits safe insertion. Complications such as tube dislodgement, blockage, and infection require vigilant monitoring.

Tube feeding protocols are written policies that standardise the management of EN, including initiation, advancement, monitoring, and troubleshooting. Protocols help reduce variability in practice, ensure safety, and improve outcomes. A typical protocol will outline stepwise feed progression (e.g., start at 20 mL/h, increase by 10–20 mL/h every 12 hours), target calorie and protein goals, and criteria for assessing tolerance (e.g., abdominal distension, residual volumes).

Residual volume refers to the amount of formula remaining in the stomach after a feeding period, measured by aspirating through the feeding tube. Historically, residual volumes > 200 mL were considered a sign of intolerance, prompting feed cessation. Recent evidence suggests that routine residual checks may not improve safety and can unnecessarily interrupt feeding. Many UK institutions now limit residual checks to specific clinical scenarios, such as suspected gastric outlet obstruction.

Refeeding syndrome is a potentially fatal metabolic disturbance that occurs when nutrition is re-initiated after prolonged starvation. The rapid influx of carbohydrates stimulates insulin release, leading to intracellular shifts of phosphate, potassium, and magnesium. Clinical manifestations include hypophosphatemia, cardiac arrhythmias, and respiratory failure. To prevent refeeding syndrome, clinicians start feeding at low calorie levels (e.g., 10 kcal/kg/day) and closely monitor electrolytes, especially in patients with a BMI. Nutrition impact symptoms (NIS) are patient-reported issues that affect intake, such as loss of appetite, dysphagia, constipation, nausea, or dental problems. Identifying NIS is a pivotal step in tailoring interventions. For instance, a patient reporting dysphagia may benefit from texture-modified diets, thickened liquids, and possibly a swallow assessment by a speech and language therapist before considering EN.

Texture-modified diets are foods altered to a softer consistency to facilitate safe swallowing. The International Dysphagia Diet Standardisation Initiative (IDDSI) provides a framework ranging from Level 4 (extremely thick) to Level 7 (thin). In the UK, care homes and hospitals adopt IDDSI levels to ensure consistency across settings. Texture modification may be combined with nutrient enrichment to offset the

reduced calorie density that can occur with softer foods.

Mealtime assistance involves staff support during eating, which can improve intake for individuals with functional limitations, cognitive decline, or reduced motivation. Assistance may include prompting, feeding, providing adaptive utensils, or creating a calm environment. Studies show that regular mealtime assistance can increase energy intake by 10–20% in frail older adults.

Nutrition education for carers is a component of many intervention programmes. Carers often influence food choices, portion sizes, and the timing of meals. Training sessions may cover topics such as recognising signs of malnutrition, preparing protein-rich snacks, and managing medication-related appetite suppression. Empowering carers is associated with better adherence to nutrition plans and reduced hospital readmissions.

Nutrition audit is a systematic review of nutrition practice against established standards. Audits may assess compliance with MUST screening, the proportion of patients receiving ONS when indicated, or the incidence of catheter-related infections in PN. Findings from audits inform quality improvement initiatives, such as staff education or protocol revisions.

Clinical outcome measures used to evaluate the effectiveness of nutrition interventions include weight change, hand-grip strength, serum albumin, length of hospital stay, readmission rates, and quality-of-life scores. Hand-grip dynamometry is a simple, inexpensive tool that correlates with overall muscle strength and functional status. Tracking these measures helps demonstrate the value of nutrition support to multidisciplinary colleagues and funding bodies.

Cost-effectiveness analysis examines the economic impact of nutrition interventions relative to health outcomes. In the UK, the National Health Service (NHS) increasingly requires evidence that programmes such as ONS provision or EN reduce overall costs by preventing complications, shortening admissions, or decreasing the need for intensive care. Cost-effectiveness data support the allocation of resources toward nutrition services.

Nutrition governance refers to the organisational structures that oversee nutrition policy, staffing, and service delivery. Governance may involve a nutrition steering committee, appointed nutrition leads, and integration with broader clinical governance frameworks. Clear governance ensures accountability, facilitates strategic planning, and aligns nutrition services with national priorities such as the NHS Long-Term Plan.

Food safety and hygiene are critical considerations when preparing fortified meals or handling EN formulas. Regulations such as the Food Standards Agency's Food Hygiene Rating Scheme apply to care homes and hospitals. Staff must adhere to proper hand-washing, storage temperatures, and cross-contamination prevention to avoid food-borne illness, which can be particularly severe in immunocompromised older adults.

Clinical pathways for specific conditions integrate nutrition with disease-specific management. Examples include:

- Heart failure pathway: restriction of sodium, optimisation of fluid balance, and use of low-energy-density, high-protein ONS to prevent cachexia while avoiding fluid overload.
- Chronic obstructive pulmonary disease (COPD) pathway: high-calorie, high-protein diets to counteract the increased metabolic demand of breathing, and supplementation with antioxidants such as vitamin C and E.
- Osteoporosis pathway: calcium (1,200 mg/day) and vitamin D (800–1,000 IU/day) supplementation, alongside protein-rich meals to support bone matrix formation.

Medication-nutrition interactions are a frequent source of nutritional risk. Certain drugs, such as metformin, can reduce vitamin B12 absorption, while diuretics may increase calcium excretion. Polypharmacy, common in older adults, may also cause taste alterations or gastrointestinal upset, reducing appetite. Conducting a medication review as part of the nutrition assessment helps identify and mitigate these interactions.

Psychosocial factors influence food intake and compliance. Loneliness, depression, and bereavement can lead to reduced appetite and neglect of meals. Social interventions, such as communal dining, involvement in cooking activities, or participation in nutrition clubs, can improve morale and encourage better eating habits. Understanding the psychosocial context is essential for tailoring interventions that are realistic and acceptable.

Cultural competence ensures that nutrition plans respect dietary preferences, religious restrictions, and traditional foods. For example, a Muslim patient may require halal-certified supplements, while a vegetarian older adult may need plant-based protein sources fortified with vitamin B12. Sensitivity to cultural practices enhances adherence and builds trust between the care team and the patient.

Legal and ethical considerations arise when deciding on invasive nutrition support. In the UK, the Mental Capacity Act (2005) outlines the process for assessing decision-making capacity and determining best-interest decisions when a patient cannot consent. Advance directives and documented wishes must be respected, and any decision to withhold or withdraw nutrition support requires thorough documentation and multidisciplinary agreement.

Nutrition risk stratification divides patients into categories based on severity of malnutrition, comorbidities, and functional status. High-risk patients may receive intensive interventions such as combined ONS and EN, frequent monitoring, and involvement of a specialised nutrition support team. Low-risk patients may benefit from simple dietary advice and periodic re-screening. Stratification helps allocate resources efficiently and ensures that those who need the most support receive it promptly.

Fluid management is intertwined with nutrition, especially in patients with renal impairment or heart failure. Fluid restrictions may limit the volume of ONS that can be given, requiring the use of higher-energy-density formulas. Conversely, dehydration can exacerbate constipation and reduce appetite. Monitoring fluid balance, urine output, and serum electrolytes is an integral part of nutrition support.

Glycaemic control is a concern when providing carbohydrate-rich feeds to patients with diabetes. EN formulas are available with modified carbohydrate profiles, such as low-glycaemic-index or diabetes-specific feeds. Careful titration of insulin, alongside regular blood glucose monitoring, is necessary to avoid hyper- or hypoglycaemia. Collaborative planning between dietitians and diabetes teams ensures that nutritional

goals align with glycaemic targets.

Immunonutrition refers to the inclusion of nutrients that modulate immune function, such as arginine, omega-3 fatty acids, and nucleotides. In surgical or critically ill older adults, immunonutrient-enriched EN may reduce infection rates and length of stay. However, the evidence is mixed, and routine use is not universally endorsed. Decision-making should be based on individual risk profiles and current guidelines.

Enteral feeding formulas are classified by composition:

- Standard polymeric formulas containing intact proteins, carbohydrates, and fats.
- Peptide (or hydrolysed) formulas with partially broken down proteins for patients with malabsorption or high gastric residuals.
- Disease-specific formulas, such as renal, hepatic, or diabetic formulas, which adjust electrolyte and macronutrient content to meet organ-specific needs.

Selecting the appropriate formula requires assessment of GI function, renal and hepatic status, and the presence of comorbidities.

Caloric and protein targets are calculated using predictive equations (e.g., Harris-Benedict, Mifflin-St Jeor) or indirect calorimetry when available. For most older adults, a pragmatic approach is to aim for 30 kcal/kg and 1.2 g protein/kg. Adjustments are made for obesity (using adjusted body weight) or severe catabolism (increasing protein up to 2 g/kg). Regular reassessment ensures that targets remain appropriate as the clinical picture evolves.

Monitoring parameters for nutrition support include:

- Daily weight (preferably measured at the same time each day).
- Fluid balance charts.
- Serum electrolytes, albumin, pre-albumin, and renal function.
- Tolerance indicators (e.g., abdominal distension, nausea, vomiting).
- Clinical signs such as skin integrity, wound healing, and muscle strength.

Documentation of these parameters in the patient's record enables trend analysis and timely intervention.

Transition of care is a critical phase when patients move from hospital to community or residential settings. Ensuring continuity of nutrition support involves clear communication of the care plan, provision of prescriptions for ONS or EN, and arranging follow-up dietetic appointments. Discharge summaries should detail the reason for nutrition support, target intakes, and any monitoring requirements. Failure to coordinate this transition can lead to interruption of feeding, weight loss, and readmission.

Tele-nutrition has emerged as a valuable tool for delivering dietetic services remotely, especially for older adults living in rural areas. Video consultations allow dietitians to assess food intake, review medication regimens, and provide education without requiring travel. While tele-nutrition improves access, it may be limited by technology literacy, hearing impairment, or lack of internet connectivity. Hybrid models that combine in-person visits with remote follow-up are often most effective.

Research and evidence base underpinning nutrition support continues to evolve. Systematic reviews indicate that early EN in critically ill older adults reduces infection risk, while ONS use in community-dwelling seniors at risk of malnutrition improves functional outcomes. Ongoing trials are investigating the role of high-protein diets in preventing sarcopenia, the impact of omega-3 supplementation on cognitive decline, and the cost-benefits of multidisciplinary nutrition teams. Staying current with emerging evidence helps practitioners refine interventions and justify resource allocation.

Implementation challenges commonly encountered in geriatric nutrition include:

- **Adherence**: Older adults may find ONS unpalatable, leading to poor compliance. Strategies such as flavour rotation, offering small frequent doses, or integrating supplements into familiar foods can improve acceptability.
- **Cognitive impairment**: Dementia can hinder the ability to follow dietary instructions. In such cases, simplifying regimens, using visual cues, and involving family members become essential.
- **Dysphagia**: Swallowing difficulties necessitate texture modification and careful assessment to avoid aspiration. Collaboration with speech and language therapists is vital.
- **Resource constraints**: Limited dietitian staffing may delay assessments. Utilising screening tools to prioritise high-risk patients and training nursing staff in basic nutrition care can mitigate this.
- **Cultural barriers**: Lack of culturally appropriate foods may reduce intake. Engaging with community groups and sourcing culturally specific products can address this gap.
- **Financial limitations**: ONS and specialised formulas can be costly. Knowledge of NHS funding pathways, such as the Best Practice Tariff for malnutrition, assists in securing reimbursement.

Best practice recommendations summarise the core principles for effective nutrition support in older adults:

1. Perform systematic nutrition screening on admission and at regular intervals.
2. Use validated tools (MUST, MNA, NRS-2002) to identify risk and guide referral.
3. Conduct comprehensive dietetic assessment for at-risk individuals, including evaluation of NIS, medication effects, and functional status.
4. Develop personalised nutrition care plans that incorporate dietary counselling, ONS, fortified meals, or EN/PN as indicated.
5. Set realistic, measurable goals for calorie and protein intake, and document them clearly.
6. Monitor clinical and biochemical parameters at defined intervals, adjusting the plan as needed.
7. Ensure multidisciplinary collaboration, involving physicians, nurses, therapists, pharmacists, and social workers.
8. Provide education and support for patients and carers to promote adherence and sustainability.
9. Conduct regular audits and quality improvement cycles to evaluate effectiveness and refine processes.
10. Align interventions with national guidelines, cost-effectiveness data, and patient preferences.

Practical example 1 – Community-dwelling older adult

Mrs Harris, an 82-year-old widower living alone, presents to her GP with a 4 kg weight loss over the past three months, reduced appetite, and occasional constipation. A MUST screen yields a score of 2 (medium risk). The GP refers her to the community dietitian, who completes an MNA assessment confirming

malnutrition. The dietitian identifies the following NIS: loss of taste, limited mobility, and depression. Intervention includes:

- A tailored meal plan with high-protein, energy-dense foods (e.g., scrambled eggs with cheese, smoothies fortified with whey protein).
- Prescription of a high-protein ONS (20 g protein, 300 kcal) to be taken twice daily.
- Referral to a local physiotherapy service for resistance exercises.
- Arrangement of weekly meals delivery from a community charity to address food access.
- Follow-up after two weeks to assess weight, intake, and mood, with adjustments made as needed.

Within six weeks, Mrs Harris regains 2 kg, reports improved energy, and her MNA score improves from 7 (malnourished) to 11 (at risk). This case illustrates the integration of screening, dietetic expertise, and social support.

Practical example 2 – Hospitalised patient requiring EN

Mr Baker, a 78-year-old man admitted with a hip fracture, has a BMI of 18 kg/m² and a NRS-2002 score of 4, indicating high nutrition risk. Post-operative pain and limited oral intake result in a daily intake of only 800 kcal. The multidisciplinary team initiates a feeding protocol:

- Placement of a nasogastric tube within 24 hours.
- Commencement of a standard polymeric EN formula at 20 mL/h, advancing to 60 mL/h over 48 hours to achieve 1,800 kcal/day and 90 g protein.
- Daily monitoring of gastric residuals, electrolytes, and weight.
- Coordination with the physiotherapy team for early mobilisation.
- Review by the dietitian on day 5 to assess tolerance and modify the formula to a higher-protein, lower-osmolarity variant due to mild nausea.
- Transition planning for discharge, including a prescription for a PEG tube if oral intake remains insufficient after two weeks.

The patient's weight stabilises, infection rates are low, and he is discharged to a rehabilitation facility with a clear nutrition care plan, demonstrating the role of EN in acute care.

Practical example 3 – Long-term care home implementing fortified meals

Sunrise Manor, a residential care home, conducts an annual nutrition audit revealing that 30% of residents are at risk of malnutrition according to MUST. The home's nutrition lead initiates a programme of meal fortification:

- Breakfast porridge is fortified with a whey protein powder (5 g protein per serving) and a calcium-vitamin D blend.
- Lunchtime soups are enriched with a powdered carbohydrate-protein mix to increase energy density without increasing volume.
- Snacks are supplemented with fruit smoothies containing added vitamin B12 and iron.
- Staff receive training on the importance of offering fortified meals at optimal times (e.g., before

physiotherapy sessions) and monitoring intake.

- Quarterly re-screening shows a reduction in at-risk residents from 30% to 12%, and a modest increase in average hand-grip strength.

This example highlights how systematic fortification, coupled with staff education, can improve nutritional status at a population level.

Common pitfalls and how to avoid them

- ****Over-reliance on single screening tools****: While MUST is excellent for rapid identification, it does not capture all dimensions of malnutrition. Complementing it with MNA or a full dietetic assessment prevents missed cases.
- ****Neglecting micronutrient adequacy****: Focusing solely on calories and protein can overlook deficiencies in vitamin D, calcium, and B-vitamins. Routine supplementation protocols should be embedded in care pathways.
- ****Inadequate documentation****: Failure to record nutrition goals, interventions, and monitoring results hampers continuity of care. Using standardised templates within electronic health records improves visibility.
- ****Ignoring patient preferences****: Prescribing ONS that the patient dislikes leads to non-adherence. Offering a choice of flavours, textures, and delivery methods respects autonomy and improves uptake.
- ****Delayed escalation to EN or PN****: Waiting too long to initiate tube feeding can worsen outcomes. Clear escalation criteria within the nutrition pathway prompt timely action.
- ****Insufficient training for non-dietetic staff****: Nurses and carers often manage feeding tubes and ONS administration. Regular competency assessments and refresher courses ensure safe practice.

Future directions in geriatric nutrition support

Advancements in technology, research, and policy are shaping the next phase of nutrition care for older adults. Emerging areas include:

- ****Personalised nutrition****: Genomic and metabolomic profiling may allow tailoring of protein sources, amino acid ratios, and micronutrient supplementation to individual metabolic phenotypes.
- ****Artificial intelligence (AI) decision support****: AI algorithms can integrate electronic health record data to predict malnutrition risk, suggest optimal feeding formulas, and flag potential drug-nutrition interactions.
- ****Smart feeding devices****: Sensors embedded in feeding pumps can monitor flow rates, detect blockages, and adjust delivery based on real-time tolerance data, reducing manual oversight.
- ****Community-based nutrition hubs****: Integrated centres offering dietetic services, cooking classes, and social dining aim to prevent malnutrition before hospital admission, aligning with public health initiatives.
- ****Policy reforms****: The NHS is exploring bundled payment models that incorporate nutrition outcomes, incentivising providers to invest in preventive nutrition services.

These developments promise to enhance the precision, efficiency, and impact of nutrition support for the growing ageing population.

Key take-away points for learners

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- Understand and apply the core screening tools (MUST, MNA, NRS-2002) to identify nutrition risk early.
 - Differentiate between malnutrition, sarcopenia, and frailty, recognising their overlapping yet distinct clinical implications.
 - Choose appropriate nutrition interventions—dietary counselling, ONS, fortified meals, EN, or PN—based on individual assessment findings.
 - Set specific calorie and protein targets, adjust for disease states, and monitor tolerance and biochemical markers regularly.
 - Work within a multidisciplinary framework, ensuring clear communication, shared goals, and coordinated care across settings.
 - Anticipate and address barriers to adherence, including sensory changes, cognitive decline, cultural preferences, and financial constraints.
 - Engage patients and carers in education, empowering them to sustain nutrition improvements beyond the clinical environment.
 - Participate in audits and quality improvement cycles to demonstrate the value of nutrition support and drive service enhancements.
 - Stay informed about evolving evidence, guidelines, and technological innovations that can refine practice.

By internalising this terminology and applying the associated concepts, practitioners will be equipped to deliver high-quality nutrition support that improves health, functional independence, and quality of life for older adults across the United Kingdom.