NICE National Institute for Health and Care Excellence

NICE Pathways

Nutrition support in adults overview

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

http://pathways.nice.org.uk/pathways/nutrition-support-in-adults
NICE Pathway last updated: 08 August 2017

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.

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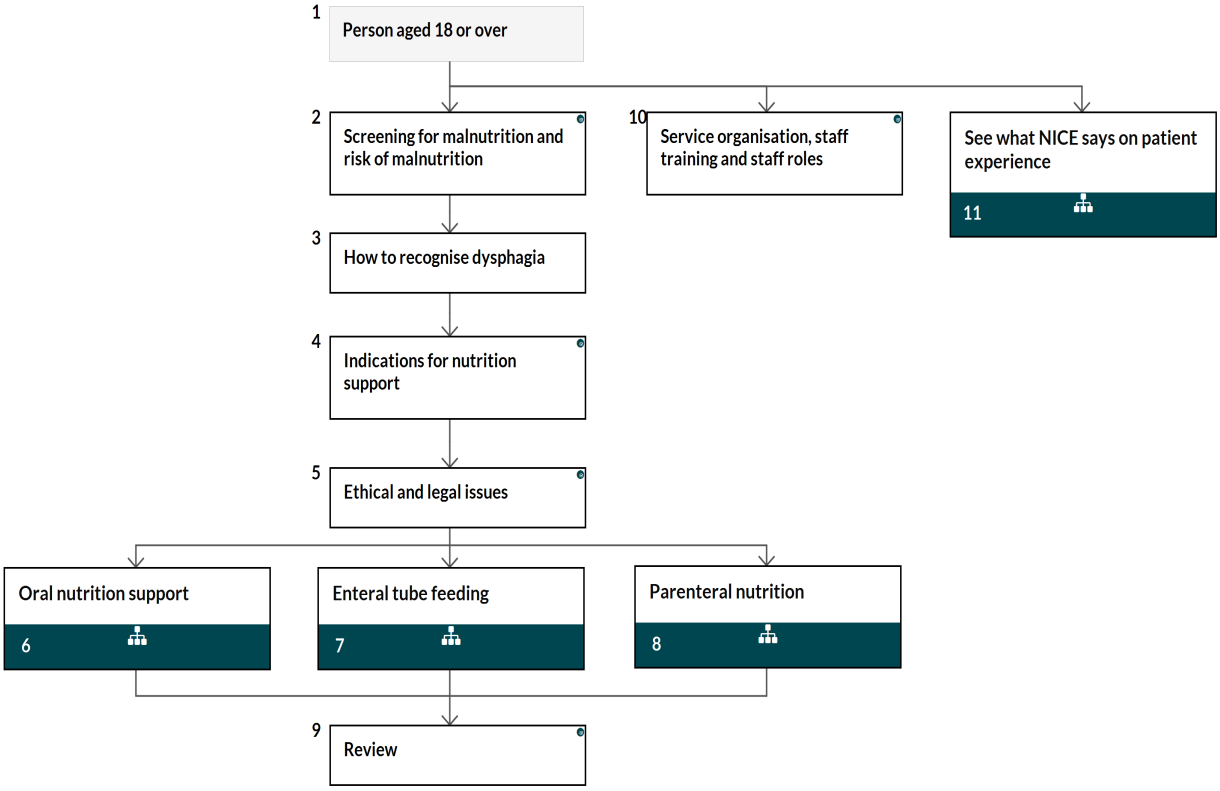

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1 Person aged 18 or over

No additional information

2 Screening for malnutrition and risk of malnutrition

Screening for malnutrition and the risk of malnutrition should be carried out by healthcare professionals with appropriate skills and training.

Screening should assess BMI and percentage unintentional weight loss and should also consider the time over which nutrient intake has been unintentionally reduced and/or the likelihood of future impaired nutrient intake. MUST, for example, may be used to do this.

When to screen

All hospital inpatients on admission and all outpatients at their first clinic appointment should be screened. Screening should be repeated weekly for inpatients and when there is clinical concern for outpatients.

Hospital departments who identify groups of patients with low risk of malnutrition may opt out of screening these groups. Opt-out decisions should follow an explicit process via the local clinical governance structure involving experts in nutrition support.

People in care homes should be screened on admission and when there is clinical concern. Clinical concern includes, for example, unintentional weight loss, fragile skin, poor wound healing, apathy, wasted muscles, poor appetite, altered taste sensation, impaired swallowing, altered bowel habit, loose fitting clothes or prolonged intercurrent illness.

Screening should take place on initial registration at general practice surgeries and when there is clinical concern. Screening should also be considered at other opportunities (for example, health checks, flu injections).

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

1. Screening for the risk of malnutrition

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3 How to recognise dysphagia

People who present with any obvious or less obvious indicators of dysphagia (see below) should be referred to healthcare professionals with relevant skills and training in the diagnosis, assessment and management of swallowing disorders.

Obvious indicators of dysphagia include:

- difficult, painful chewing or swallowing
- regurgitation of undigested food
- difficulty controlling food or liquid in the mouth
- drooling
- hoarse voice
- coughing or choking before, during or after swallowing
- globus sensation
- nasal regurgitation
- feeling of obstruction
- unintentional weight loss – for example, in people with dementia.

Less obvious indicators of dysphagia include:

- change in respiration pattern
- unexplained temperature spikes
- wet voice quality
- tongue fasciculation (may be indicative of motor neurone disease)
- xerostomia
- heartburn
- change in eating habits – for example, eating slowly or avoiding social occasions
- frequent throat clearing
- recurrent chest infections
- atypical chest pain.

Healthcare professionals should recognise that people with acute and chronic neurological conditions and those who have undergone surgery or radiotherapy to the upper aero-digestive tract are at high risk of developing dysphagia.

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4 Indications for nutrition support

Nutrition support should be considered in people who are malnourished, as defined by any of the following:

- a BMI of less than 18.5 kg/m^2
- unintentional weight loss greater than 10% within the last 3–6 months
- a BMI of less than 20 kg/m^2 and unintentional weight loss greater than 5% within the last 3–6 months.

Nutrition support should be considered in people at risk of malnutrition who, as defined by any of the following:

- have eaten little or nothing for more than 5 days and/or are likely to eat little or nothing for the next 5 days or longer
- have a poor absorptive capacity, and/or have high nutrient losses and/or have increased nutritional needs from causes such as catabolism.

Healthcare professionals should consider using oral, enteral or parenteral nutrition support, alone or in combination, for people who are either malnourished or at risk of malnutrition. Potential swallowing problems should be taken into account.

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

2. Treatment

5 Ethical and legal issues

Healthcare professionals involved in starting or stopping nutrition support should:

- obtain consent from the patient if he or she is competent
- act in the patient's best interest if he or she is not competent to give consent
- be aware that the provision of nutrition support is not always appropriate. Decisions on withholding or withdrawing of nutrition support require a consideration of both ethical and legal principles (both at common law and statute including the Human Rights Act 1998).

When such decisions are being made, the General Medical Council's treatment and care

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towards the end of life: decision making and the Department of Health's reference guide to consent for examination or treatment, second edition 2009 should be followed.

Healthcare professionals should ensure that people having nutrition support, and their carers, are kept fully informed about their treatment. They should also have access to appropriate information and be given the opportunity to discuss diagnosis and treatment options.

See what NICE says on end of life care for people with life-limiting conditions.

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

2. Treatment

6 Oral nutrition support

See Nutrition support in adults / Oral nutrition support

7 Enteral tube feeding

See Nutrition support in adults / Enteral tube feeding

8 Parenteral nutrition

See Nutrition support in adults / Parenteral nutrition

9 Review

Healthcare professionals should review the indications, route, risks, benefits and goals of nutrition support at regular intervals. The time between reviews depends on the patient, care setting and duration of nutrition support. Intervals may increase as the patient is stabilised on nutrition support.

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

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5. Review

10 Service organisation, staff training and staff roles

Acute trusts

All acute hospital trusts should have a multidisciplinary nutrition support team which may include: doctors (for example gastroenterologists, gastrointestinal surgeons, intensivists or others with a specific interest in nutrition support), dietitians, a specialist nutrition nurse, other nurses, pharmacists, biochemistry and microbiology laboratory support staff, and other allied healthcare professionals (for example, speech and language therapists).

All hospital trusts should have a nutrition steering committee working within the clinical governance framework.

Members of the nutrition steering committee should be drawn from trust management, and include senior representation from medical staff, catering, nursing, dietetics, pharmacy and other healthcare professionals as appropriate, for example, speech and language therapists.

All acute hospital trusts should employ at least one specialist nutrition support nurse.

Healthcare professionals

All healthcare professionals who are directly involved in patient care should receive education and training, relevant to their post, on the importance of providing adequate nutrition. Education and training should cover:

- nutritional needs and indications for nutrition support
- options for nutrition support (oral, enteral and parenteral)
- ethical and legal concepts
- potential risks and benefits
- when and where to seek expert advice.

Healthcare professionals should ensure that care provides:

- food and fluid of adequate quantity and quality in an environment conducive to eating
- appropriate support, for example, modified eating aids, for people who can potentially chew and swallow but are unable to feed themselves.

Healthcare professionals should ensure that all people who need nutrition support receive

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coordinated care from a multidisciplinary team. The composition of this team may differ according to setting and local arrangements.

Specialist nutrition support nurse

The specialist nutrition support nurse should work alongside nursing staff, as well as dietitians and other experts in nutrition support, to:

- minimise complications related to enteral tube feeding and parenteral nutrition
- ensure optimal ward-based training of nurses
- ensure adherence to nutrition support protocols
- support coordination of care between the hospital and the community.

Quality standards

The following quality statement is relevant to this part of the interactive flowchart.

5. Review

11 See what NICE says on patient experience

See Patient experience in adult NHS services

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Protocol for nutritional, anthropometric and clinical monitoring of nutrition support

Parameter	Frequency	Rationale
Nutritional		
Nutrient intake from oral, enteral or parenteral nutrition (including any change in conditions that are affecting food intake)	Daily initially, reducing to twice weekly when stable	To ensure that patient is receiving nutrients to meet requirements and that current method of feeding is still the most appropriate. To allow alteration of intake as indicated
Actual volume of feed delivered*	Daily initially, reducing to twice weekly when stable	To ensure that patient is receiving correct volume of feed. To allow troubleshooting
Fluid balance charts (enteral and parenteral)	Daily initially, reducing to twice weekly when stable	To ensure patient is not becoming over/under hydrated
Anthropometric		
Weight*	Daily if concerns regarding fluid balance, otherwise weekly reducing to monthly	To assess ongoing nutritional status, determine whether nutritional goals are being achieved and take into account both body fat and muscle
BMI*	Start of feeding and then monthly	
Mid-arm circumference*	Monthly, if weight	

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	cannot be obtained or is difficult to interpret	
Triceps skinfold thickness	Monthly, if weight cannot be obtained or is difficult to interpret	
GI function		
Nausea/vomiting*	Daily initially, reducing to twice weekly	To ensure tolerance of feed
Diarrhoea*	Daily initially, reducing to twice weekly	To rule out any other causes of diarrhoea and then assess tolerance of feeds
Constipation*	Daily initially, reducing to twice weekly	To rule out other causes of constipation and then assess tolerance of feeds
Abdominal distension	As necessary	To assess tolerance of feed
Enteral tube – nasally inserted		
Gastric tube position (pH less than or equal to 5.5 using pH paper – or noting position of markers on tube once initial position has been confirmed)	Before each feed begins	To ensure tube in correct position
Nasal erosion	Daily	To ensure tolerance of tube

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Fixation (is it secure?)	Daily	To help prevent tube becoming dislodged
Is tube in working order (all pieces intact, tube not blocked/ kinked)?	Daily	To ensure tube is in working order
Gastrostomy or jejunostomy		
Stoma site	Daily	To ensure site not infected/red, no signs of gastric leakage
Tube position (length at external fixation)	Daily	To ensure tube has not migrated from/into stomach and external overgranulation
Tube insertion and rotation (gastrostomy without jejunal extension only)	Weekly	To prevent internal overgranulation/ prevention of buried bumper syndrome
Balloon water volume (balloon retained gastrostomies only)	Weekly	To prevent tube falling out
Jejunostomy tube position by noting position of external markers	Daily	To confirm position
Parenteral nutrition		
Catheter entry site*	Daily	To check for signs of infection/ inflammation

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Skin over position of catheter tip (peripherally fed people)*	Daily	To check for signs of thrombophlebitis
Clinical condition		
General condition*	Daily	To ensure that patient is tolerating feed and that feeding and route continue to be appropriate
Temperature/blood pressure	Daily initially, then as needed	To check for sign of infection and monitor fluid balance
Drug therapy*	Daily initially, reducing to monthly when stable	To ensure appropriate preparation of drug (to reduce incidence of tube blockage). To prevent/reduce drug nutrient interactions
Long-/short-term goals		
Are goals being met?*	Daily initially, reducing to twice weekly and then progressively to 3–6 monthly, unless clinical condition change	To ensure that feeding is appropriate to overall care of patient
Are goals still appropriate?*		

People at home having parenteral nutrition should be monitored using observations marked *.

Protocol for laboratory monitoring of nutrition support

The information in this table is particularly relevant to parenteral nutrition. It could also be selectively applied when enteral or 'oral nutrition support' is used, particularly for people who are metabolically unstable or at risk of refeeding syndrome. The frequency and extent of the observations given may need to be adapted in acutely ill or metabolically unstable people.

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Parameter	Frequency	Rationale	Interpretation
Sodium, potassium, urea, creatinine	Baseline, daily until stable, then 1 or 2 times a week	Assessment of renal function, fluid status, and Na and K status	Interpret with knowledge of fluid balance and medication. Urine sodium may be helpful in complex cases with gastrointestinal fluid loss
Glucose	Baseline, 1 or 2 times a day (or more if needed) until stable, then weekly	Glucose intolerance is common	Good glycaemic control is necessary
Magnesium, phosphate	Baseline, daily if risk of refeeding syndrome, 3 times a week until stable, then weekly	Depletion is common and under recognised	Low concentrations indicate poor status
Liver function tests including International Normalised Ratio (INR)	Baseline, twice weekly until stable, then weekly	Abnormalities common during parenteral nutrition	Complex. May be due to sepsis, other disease or nutritional intake
Calcium, albumin	Baseline, then weekly	Hypocalcaemia or hypercalcaemia may occur	Correct measured serum calcium concentration for albumin. Hypocalcaemia may be secondary to Mg deficiency. Low albumin reflects disease not protein status
C-reactive	Baseline, then 2 or	Assists	To assess the presence of an acute

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protein	3 times a week until stable	interpretation of protein, trace element and vitamin results	phase reaction (APR). The trend of results is important
Zinc, copper	Baseline, then every 2–4 weeks, depending on results	Deficiency common, especially when increased losses	People most at risk when anabolic. APR causes Zn ↓ and Cu ↑
Selenium[a]	Baseline if risk of depletion, further testing dependent on baseline	Se deficiency likely in severe illness and sepsis, or long-term nutrition support	APR causes Se ↓. Long-term status better assessed by glutathione peroxidase
Full blood count and MCV	Baseline, 1 or 2 times a week until stable, then weekly	Anaemia due to iron or folate deficiency is common	Effects of sepsis may be important
Iron, ferritin	Baseline, then every 3–6 months	Iron deficiency common in long-term parenteral nutrition	Iron status difficult if APR (Fe ↓, ferritin ↑)
Folate, B12	Baseline, then every 2–4 weeks	Iron deficiency is common	Serum folate/B12 sufficient, with full blood count
Manganese[b]	Every 3–6 months if on home parenteral nutrition	Excess provision to be avoided, more likely if liver	Red blood cell or whole blood better measure of excess than plasma

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		disease	
25-OH Vit D[b]	6-monthly if on long-term support	Low if housebound	Requires normal kidney function for effect
Bone densitometry[b]	On starting home parenteral nutrition, then every 2 years	Metabolic bone disease diagnosis	Together with lab tests for metabolic bone disease

[a] This test is needed primarily for people having parenteral nutrition in the community.

[b] These tests are rarely needed in people having enteral tube feeding (in hospital or in the community), unless there is cause for concern.

Glossary

Enteral tube feeding

delivery of a nutritionally complete feed via a tube into the stomach, duodenum or jejunum

Micronutrients

all essential vitamins and trace elements

MUST

malnutrition universal screening tool

Oral nutrition support

any of the following methods to improve nutritional intake: fortified food with protein, carbohydrate and/or fat plus minerals and vitamins; snacks; oral nutritional supplements; altered meal patterns; and the provision of dietary advice

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PEG

percutaneous endoscopic gastrostomy

Total nutrient intake

intake from any food, oral fluid, oral nutritional supplements, enteral and/or parenteral nutrition support and intravenous fluid

Sources

Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition (2006 updated 2017) NICE guideline CG32

Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

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Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

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