National Institute for Health and Care Excellence

Draft for consultation

Neonatal parenteral nutrition

Supplementary material B - Glossary and abbreviations

NICE guideline tbc

Supplementary material B

September 2019

Draft for Consultation

Supplementary material was developed by the National Guideline Alliance which is part of the Royal College of Obstetricians and Gynaecologists

Disclaimer

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or service users. The recommendations in this guideline are not mandatory and the guideline does 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.

Local commissioners and/or providers have a responsibility to enable the guideline to be applied when individual health professionals and their patients or service users 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 compliance with those duties.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the Welsh Government, Scottish Government, and Northern Ireland Executive. All NICE guidance is subject to regular review and may be updated or withdrawn.

Copyright

ISBN:

Contents

Glossary

Definitions for many of the terms used in NICE guidelines are available at https://www.nice.org.uk/process/pmg20/chapter/glossary. This glossary defines the terms that are specific to this guideline.

Term	Definition
Abdominal circumference	The measurement of the outer circumference of the abdomen.
Acetate	The conjugate base or ion (specifically, the negatively charged ion called an anion) of acetic acid, typically found in water solutions and written with the chemical formula $C_2H_3O^-_2$.
Acidosis	Accumulation (increase) of acid within the blood and other body tissues. Occurs with a pH of less than 7.35.
Acute trust	A trust is an NHS organisation responsible for providing a group of healthcare services. An acute trust provides hospital services (but not mental health hospital services which are provided by a mental health trust).
Adipose tissue	An anatomical term for loose connective tissue composed of adipocytes. Its main role is to store energy in the form of fat, although it also cushions and insulates the body.
Amino acids	Organic compounds that form proteins, which help with growth and the repair of body tissues.
Anabolic	Metabolic process concerned with the build-up of tissues from nutrients (such as amino acids).
Anaemia	A condition in which the number of red blood cells or the amount of haemoglobin (a protein that enables red blood cells to carry oxygen from the lungs to other parts of the body) is reduced.
Anion	A negatively charged particle or ion, for example Chlorine is found in water solutions as an anion (Cl^-)
Antenatal	Period of time before birth, relating to pregnancy.
Anthropometric measures	Specific measurements of the body, including weight, linear growth and head circumference.
Anxiety	An emotional state where the person may have physical symptoms such as sweating or a fast heart rate as well as a feeling of fear that something bad is going to happen.
Aqueous solutions	Where materials are dissolved in water.
Base excess	The metabolic component of acid-base disturbances in the body, and is useful as a surrogate marker (indirect measure) for acidosis.
Bilirubin	A pigment formed from the breakdown of haemoglobin.
Body composition	This is a way of describing what the body is made of and is usually described in terms of fat and fat-free mass. There are a number of different ways of measuring body composition which include MRI (magnetic resonance imaging) and DEXA (dual-energy X-ray absorptiometry).
Body mass index (BMI)	A measure of body weight relative to height used to determine whether individuals are underweight, at a healthy weight, overweight or obese.
Bone mineral density	A measure of the amount of calcium and other minerals in bone. It is measured through use of X-rays (usually DEXA) or CT scans. This helps predict the strength of bone and the risk of fractures.
Bone mineralisation	The process whereby minerals such as calcium and phosphate are deposited in the bone.
Bronchopulmonary dysplasia	A requirement for respiratory support or supplemental oxygen at a corrected age of 36 weeks (NNAP – National Neonatal Audit programme definition). This term is often used interchangeably with 'Chronic Lung Disease of prematurity'.

Term	Definition
Calcium	Essential micronutrient for biochemical processes in the cells of the body, muscle contraction and bone formation.
Carbohydrates	Essential constituent in parenteral nutrition, in the form of glucose. Carbohydrates provide an important source of energy and are essential for normal metabolism.
Cardiac arrhythmias	Where the heartbeat is irregular, too slow, or too fast.
Cardiovascular disease	Conditions affecting the heart or blood vessels, associated with fatty deposits building up inside the arteries (also known as atherosclerosis) and increased risk of blood clots. It can also be associated with damage to the arteries in organs such as the heart, brain, kidneys and eyes.
Catabolic state	Metabolic activity concerned with the breakdown of complex body molecules (e.g. muscle protein) to simpler molecules (such as amino acids) to release energy.
Cation	A positively charged particle or ion, for example Sodium is found in water solutions as a cation (Na^+).
Causal relationship	Describes the relationship between two variables whenever it can be established that one causes the other. For example, there is a causal relationship between a treatment and a disease if it can be shown that the treatment changes the course or outcome of the disease. Usually randomised controlled trials are needed to ascertain causality. Proving cause and effect is much more difficult than just showing an association between two variables.
Cell membrane function	The cell membrane is a specialised structure that functions to actively regulate movement of substances into and out of the cell.
Central line/catheter	Tube inserted into large vein in the body to administer nutrients and medication directly into the bloodstream.
Central nervous system	The brain and spinal cord.
Chloride	The negatively charged (anion) of chlorine. Chloride is important in maintaining the balance between positively charged and negatively charged particles in the blood and body tissues.
Cholestasis	Any condition whereby the flow of bile (digestive fluid) from the liver is decreased or blocked.
Cholesterol	A fatty substance (lipid) that is vital for the normal functioning of the body. Mainly made by the liver, but also found in some foods.
Chorioamnionitis	Inflammation of the membranes surrounding the fetus (chorion and amnion), usually caused by infection.
Chronic lung disease	See ‘Bronchopulmonary dysplasia’.
Clinical effectiveness	The extent to which a specific treatment or intervention, when used under usual or everyday conditions, has a beneficial effect on the course or outcome of disease compared with no treatment or other routine care. (Clinical trials that assess effectiveness are sometimes called management trials.) Clinical ‘effectiveness’ is not the same as efficacy.
Clinical governance	A framework through which NHS organisations are accountable for both continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish.
Cluster	A group of patients, rather than an individual, used as the basic unit for investigation. See also ‘cluster design’ and ‘cluster randomisation’.
Cluster design	Cluster designs are those where research subjects are not sampled or selected independently, but in a group. For example, a clinical trial where patients in a general practice are allocated to the same intervention; the general practice forming a cluster. See also ‘cluster’ and ‘cluster randomisation’.

Term	Definition
Cluster randomisation	A study in which groups of individuals (such as patients in a GP surgery or on a hospital ward) are randomly allocated to treatment groups. For example, in a smoking cessation study of two different interventions – leaflets and teaching sessions – each GP surgery within the study would be randomly allocated to administer one of the two interventions. See also 'cluster' and 'cluster design'.
Cognitive ability	Mental capacity to learn, reason, remember and problem solve.
Congenital abnormality/malformation	An abnormality (genetic, chromosomal or structural) of the baby that is present during fetal life or at birth.
Congenital gastrointestinal defect	A malformation of any part of the gastro-intestinal tract that results in malfunction, or most commonly obstruction, of the intestine. This may present as feeding difficulties (for example, omphalocele, malrotation, and meconium ileus).
Co-morbidity	Co-existence of a disease or diseases in the people being studied in addition to the health problem that is the subject of the study.
Conjugated hyperbilirubinemia	An excess of conjugated bilirubin in the blood and body tissues. This can be caused by processes that result in liver disease or prevent bile flow.
Copper overload	An excess of Copper in the body.
Corrected age	The age used for the first 2 years when assessing the functional and developmental skills (such as walking and talking) of children born preterm. Corrected age is calculated from their original due date (and not the date they were born).
Correlation coefficient	A measure of the degree of linear association between two variables. A significant association does not imply causation.
Cost effectiveness	Value for money. A specific healthcare treatment is said to be 'cost effective' if it gives a greater health gain than could be achieved by using the resources in other ways.
Decision analysis	The study of how people make decisions or how they should make decisions. There are several methods that decision analysts use to help people to make better decisions, including decision trees.
Decision tree	A method for helping people to make better decisions in situations of uncertainty. It illustrates the decision as a series of possible actions and outcomes. It consists of the probabilities, costs and health consequences associated with each option. The overall effectiveness or cost effectiveness of different actions can then be compared.
De novo	New onset or anew.
DEXA scan	A Dual Energy X-Ray Absorptiometry scan that measures bone density. It is used to compare bone mineral density against population standards.
Dextrose	Glucose appears in nature in the form of two isomers (mirror image molecules). Dextrose, or D-glucose, is the form which is found in fruit, and also the form which circulates in the blood. Dextrose and glucose are often used interchangeably.
Diabetes	A metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. The two most common forms are Type 1 and Type 2 diabetes mellitus.
Dietitians	Healthcare professionals trained to modify a patient's diet in response to a disease state and assess, diagnose and treat nutritional problems.
Dietetics	The study of nutrition in health and disease.
Diuresis	Increased or excessive urination.

Term	Definition
Electrolyte	Salts and minerals which occur as charged particles (ions) in the blood and body tissues. Examples are sodium, potassium, chloride and bicarbonate.
Electrolyte homeostasis	Where electrolytes in the blood and body tissues are maintained in a stable concentration.
Electrolyte imbalance	Where the concentration of one electrolyte is too high or too low.
Enteral feeding	Administration of nutrition by means of the intestinal tract. Feeds may be administered by mouth, or via a tube (for example a nasogastric or gastrostomy tube).
Enzyme	A chemical that speeds up chemical reactions within the body.
Enzyme activity	The rate of reaction of an enzyme with a substrate. Enzyme activity will be influenced by the conditions which exists within the body, for example pH.
Epilepsy	Abnormal electrical activity in the brain, leading to recurrent episodes of sensory disturbance, loss of consciousness or convulsions.
Equity	Fair distribution of resources or benefits.
Erythropoietin	A hormone that controls the production of red blood cells (erythropoiesis) in the bone marrow. Erythropoietin is produced in the kidney in response to decreased oxygen delivery (as in anaemia and hypoxia) and increased levels of androgens.
Essential fatty acids	Linoleic and linolenic acids that are essential for optimal health and can only be obtained from the diet.
Evidence based	The process of systematically finding, appraising and using research findings as the basis for clinical decisions.
Evidence-based clinical practice	Making decisions about the care of individual patients based on the best research evidence available rather than basing decisions on personal opinions or common practice (which may not always be evidence based). Evidence-based clinical practice therefore involves integrating individual clinical expertise and patient preferences with the best available evidence from research.
Extrapolation	The application of research evidence based on studies of a specific population to another population with similar characteristics.
Extravasation	Accidental leakages of fluids from intravenous lines into surrounding tissues.
Extremely low birthweight	A birthweight of less than 1.0 kg.
Fat mass	Proportion of the body that is composed of fat.
Fat-free mass	Proportion of the body that is not composed of fat (i.e. lean mass).
Fat-soluble vitamins	Vitamins A, D, E, and K.
Ferritin	An iron binding protein that plays a significant role in the absorption, storage, and release of iron.
Fluid balance	The balance between fluid intake (drinks or intravenous fluids) and fluid output (sweat and urine and other fluid losses) in the body.
Fluid overload	Where too much fluid has been administered. This may result in electrolyte imbalance (see above) as the concentrations of substances within the blood and body fluids will be altered by excessive fluid intake.
Fluid restriction	Reducing the amount of fluid given to a patient in order to treat a particular clinical problem, such as fluid overload or renal failure (where the kidneys are unable to rid the body of excess fluid)
Fluid resuscitation	The administration of fluid for the purpose of restoring the circulating volume. Where the body has lost excessive fluids, the volume of blood circulating in the body may be reduced, and this can give rise to reduced organ function, as there is not enough blood flow to the organs (hypovolemic shock).
Fluid retention	Where the body is unable to rid itself of excess fluid due to renal dysfunction or other diseases which may occur in babies who are

Term	Definition
	critically unwell. For very premature infants, the kidneys may not be functioning well due to immaturity.
Fractures	A break, most usually in a bone.
Free radical	Where a molecule has at least one unpaired electron, which makes the molecule very reactive. If such a molecule occurs within the body, this could result in damage result to body tissues caused by the reactions of these free radicals.
Gastroenterology	A specialisation in medicine which deals with disorders and disease of the gastrointestinal tract.
Gastrointestinal	Pertaining to the gastrointestinal tract, the organ in the body which absorbs nutrients from food and produces waste in the form of faeces or stool.
Gastrointestinal motility	This is the movement of the gastrointestinal tract which propels food through the gut, and allows absorption of nutrients. If the transition is too fast, not all the nutrients will be absorbed resulting in malabsorption.
Gastroschisis	Abdominal wall defect in which the small intestine, and occasionally the stomach or colon, is outside of the body without a membranous protective sac.
Gastrostomy tube	A tube inserted through the abdomen to provide nutrients directly to the stomach.
Generalisability	The extent to which the results of a study hold true for a population of patients beyond those who participated in the research.
General surgery	Surgery which deals with problems in the body usually including the gastrointestinal tract and organs within the abdomen but can include any area or system of the body not dealt with by a specialised surgeon (for example: neurosurgery which is limited to surgery of the neurological system).
Gestation	The time from conception to birth. Traditionally, the duration of gestation is measured from the first day of the last normal menstrual period, assuming that conception occurs 14 days after the first day of menstruation. Ultrasound biometric measurements in the first half of pregnancy are used to determine gestational age.
Glucose	A simple sugar, or monosaccharide. Glucose is the major source of energy within the body.
Guideline recommendation	Course of action advised by the guideline development group on the basis of their assessment of the supporting evidence.
Haematocrit	A number that gives a measure of how many red blood cells are present in the blood. A low number would indicate anaemia.
Haematopoiesis	The process whereby the body manufactures new red blood cells
Haemoglobin	A protein that carries oxygen within the red blood cells of the body, A low haemoglobin level is found in anaemia.
Haemostasis	Where the flow of blood is stopped, for example during an operation, haemostasis may be achieved by tying off blood vessels
Head circumference	The measurement of the outer circumference of the head.
Humidity	A measure of how much water vapour is found in the air.
Hydration	A measure of how much fluid is present.
Hyperalimented regimen	Provision of parenteral nutrition with macronutrients at amounts above current recommendations.
Hyperbilirubinaemia	A high level of bilirubin in the blood.
Hypercalcaemia	Abnormal elevation of calcium in the blood: serum calcium concentration of 2.65 mmol/L or higher, on two occasions, following adjustment (correction) for the serum albumin concentration.
Hypercalciuria	Excretion of abnormally high amounts of calcium in the urine.
Hyperchloraemia	Abnormal elevation of chloride in the blood (Normal range: 95-106 mmol/L).

Term	Definition
Hyperglycaemia	Abnormal elevation of sugar in the blood (Normal range fasting blood sugar: 2.5-5.5 mmol/L).
Hyperkalaemia	Abnormal elevation of potassium in the blood (Normal range: 3.5-5.5 mmol/L).
Hyperlipidaemia	Abnormal elevation of fats in the blood.
Hyperphosphataemia	Abnormal elevation of phosphorous in the blood (Normal range: 1.3 – 2.6 mmol/L).
Hypertriglyceridemia	Abnormally high levels of triglycerides within the blood (Normal range: < 1.8 mmol/L).
Hypochloraemia	Abnormally low level of chloride in the blood (Normal range: 95-106 mmol/L).
Hypoglycaemia	Abnormally low blood sugar level (Normal range fasting blood glucose: 2.5-5.5 mmol/L).
Hypokalaemia	Abnormally low potassium level in the blood (Normal range: 3.5-5.5 mmol/L).
Hypomagnesaemia	Abnormally low magnesium level in the blood (Normal range: 0.65-1.00)
Hypophosphataemia	Abnormally low phosphorous level in the blood, which leads to impaired bone growth and development in children, and problems with bone mineralisation (Normal range: 1.3 – 2.6 mmol/L).
Hypoxic ischemic encephalopathy	Brain disease or dysfunction in infants caused by a combination of lack of oxygen delivery and poor blood supply to the brain.
Iatrogenic	Any adverse condition in an individual occurring as a result of treatment by a health professional.
Imprecision	When the confidence interval associated with an effect estimate is wide due to a relatively small sample size and/or occurrence of relatively few events.
Indirectness	When the population, intervention, comparison and/or outcomes of the identified studies differs from those specified in the PICO.
Individualised parenteral nutrition	Formulations that are wholly or partly derived from bespoke components (nutrients) designed to meet the clinical needs of an individual baby.
Infarct	Death of tissue (necrosis) due to loss of blood supply.
Infusion set	Apparatus used to administer intravenous nutrients and medication.
Inotropic support	Inotropes are agents administered to increase heart muscle contractions. They are used mainly for critically ill patients with significant haemodynamic impairment whereby tissue blood flow is insufficient to meet metabolic requirements.
Insensible losses	Fluid losses which cannot be fully quantified, for example water lost from the respiratory tract and skin as water vapour.
Insulin/Insulin therapy	Insulin is a hormone made by the pancreas that allows the body to use sugar (glucose) from carbohydrates in the food for energy or to store glucose for future use. Insulin helps to keep blood sugar level from getting too high (hyperglycaemia) or too low (hypoglycaemia).
Intestinal atresia	A birth defect in which the intestine develops abnormally during pregnancy, resulting in complete obstruction and inability of fluids and food to pass through.
Intestinal failure	Disease or injury to the small intestine which prevents the absorption of adequate nutrients and water and may result in malnourishment and dehydration.
Intrahepatocellular lipid	Fat deposits in the liver.
Intrauterine growth restriction	A condition where a fetus' growth slows or ceases when it is in the uterus.

Term	Definition
Intravenous	Administration into a vein.
Intravenous lipid emulsion	A source of energy provided in parenteral nutrition which prevents essential fatty acid deficiencies.
Intraventricular haemorrhage (IVH)	Refers to bleeding within the brain usually diagnosed on ultrasound. It has most commonly been graded according to the Papile classification. Grade 1 - germinal matrix haemorrhage; Grade 2 - IVH without ventricular dilatation; Grade 3 - IVH with blood distending the ventricle; Grade 4 - IVH extending into adjacent brain parenchyma, this is more accurately referred to as Periventricular venous haemorrhagic infarction (PVHI).
Iron	A metallic element which is an important component of haemaglobin, where it helps transport oxygen in the blood, and myoglobin, a muscle protein.
Iron overload	Excessive accumulation of iron within the body.
Iron supplementation	Supplementation to increase levels of iron in the body; they are typically prescribed to prevent or treat iron deficiency anaemia.
Jaundice	A yellow discolouration of the skin and eyes caused by hyperbilirubinemia.
Lean mass	Body weight minus body fat.
Length of stay	The total number of days an individual stays in hospital.
Linear growth	Growth in length or height of an infant or child.
Lipaemia	Excess of lipoprotein particles in the blood. Lipaemia can interfere with laboratory tests that use transmission of light as part of the detection scheme. Common causes of lipaemia include diabetes mellitus, chronic renal failure and total parenteral nutrition.
Lipaemic index	A measure used to determine whether or not blood samples are suitable for laboratory analysis. See also ‘lipaemia’.
Lipids	Fats that are stored in the body as energy reserves and are important components of cell membranes. The main lipids are triglycerides, but also include phospholipids, free fatty acids, cholesterol and fat-soluble vitamins.
Lipid emulsion	As fats and lipids are not soluble in water, intravenous lipid is administered in the form of an emulsion, which means that tiny droplets of lipid are suspended within a water based solution. This allows safe administration of lipid mixtures into the blood.
Lipid soluble vitamins	Vitamins A, D, E and K are fat soluble. This means they are transported in together with lipids within the blood in fat globules called chylomicrons.
Lipogenesis	The production of fat or lipids within the body.
Lipoprotein particles	A lipoprotein particle is an arrangement of lipids (fats) and proteins that allows the transport of non-water soluble fats in water based solutions such as blood or tissue fluid.
Liver enzymes	Alkaline phosphatase (ALP), alanine transaminase (ALT), aspartate transaminase (AST) and gamma-glutamyl transpeptidase (GGT). These enzyme levels may be raised in the blood when there is liver dysfunction or disease.
Low birthweight	A birthweight of less than 2.5 kg.
Macronutrients	Amino acids, carbohydrates and lipids.
Magnesium	A mineral that is needed in the body for a number of different functions. It is an important component of bone, and is also essential for the synthesis of DNA and RNA, and for the processes whereby energy is generated in the cells of the body.

Term	Definition
Magnetic resonance imaging (MRI)	Magnetic resonance imaging (MRI) is a type of scan that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body.
Malnutrition	A state of nutrition in which a deficiency of energy, protein and/or other nutrients causes measurable adverse effects on tissue/body form, composition, function or clinical outcome.
Malrotation	An abnormality of the bowel where it does not coil up in the correct position. This is a common congenital anomaly, which occurs during embryonic development.
Mechanical ventilation	The process of using a machine (a ventilator or life-support machine) to breathe for an individual during an illness.
Meconium	The first form of bowel movement in neonates.
Meconium aspiration	Before birth the fetus may pass meconium into the amniotic fluid. During birth, meconium may be inhaled into the lungs, as the baby attempts to breathe. This inhaled meconium may trigger lung injury and respiratory distress (i.e. meconium aspiration syndrome).
Meconium ileus	Obstruction of the distal small bowel by abnormal meconium; it occurs most frequently in neonates with cystic fibrosis.
Membrane pore size	How large or small the gaps in a membrane are, which will determine which particles are filtered out of a solution.
Mental health problems	Can affect the way an individual thinks, feels and behaves. More common ones include depression, generalised anxiety disorder and obsessive compulsive disorder.
Metabolic acidosis	Reduction in bicarbonate, typically with compensatory reduction in carbon dioxide partial pressure; acid levels may be markedly low or slightly subnormal.
Metabolic alkalosis	Increase in bicarbonate, with or without compensatory increase in carbon dioxide partial pressure; acid levels may be high or nearly normal.
Metabolic bone disease	Reduced bone mineralisation seen in preterm infants due to deficiencies in intake of calcium, phosphate, magnesium, or vitamin D.
Metabolic disturbance	This occurs when metabolic processes within the body are not working correctly. For example, for preterm babies may have difficulty in controlling their blood glucose concentration, resulting in the metabolic disturbance of hypoglycaemia (low blood sugar).
Metabolism	The continual chemical processes in the body that keep organs functioning normally, such as breathing, repairing cells and digesting food.
Microbiological medium	A liquid, gel or solid which will encourage and support the growth of bacteria.
Minerals	Nutrients required in small amounts by the body to work properly and stay healthy. Macrominerals include, for example, calcium and sodium. Trace minerals include, for example, selenium and zinc.
Model input	Information required for economic modelling. For clinical guidelines, this may include information about prognosis, adverse effects, quality of life, resource use or costs.
Mortality	Death; the incidence of death; death rate.
Multidisciplinary care team (MDT)	A team of healthcare professionals that is formed to help diagnose and/or treat complex conditions. MDT's are generally used when the complex nature of the condition requires input from many health care professionals.
Multiple pregnancy	A pregnancy with more than one fetus.
Nasogastric tube	A tube that is passed through the nose and into the stomach.
Necrotising enterocolitis	A bowel condition that predominantly affects preterm babies. It is characterised by inflammation of the bowel, feed intolerance and physiological instability.

Term	Definition
Neonatal intensive care unit (NICU)	A unit where there is a high staff-patient ratio and full supportive care can be given to critically ill as well as very premature babies.
Neonate	A baby aged up to 28 days.
Neonatology	Neonatology is a subspecialty of paediatrics that encompasses the medical care of the neonate. Neonatology is concerned with the care of critically ill term infants as well as the care of the preterm infant.
Nervous system	The brain, spinal cord and nerves in the body.
Neurodevelopmental disorders	Impairments of the developing brain. These disorders can be manifested as delayed developmental milestones, and can affect all areas of brain function such as body movements, cognition and emotional development. These disorders may also therefore affect a child's quality of life, activity and participation.
Nitrogen accretion	Gradual increase or build-up of nitrogen within body tissues, typically in the form of proteins within the body.
Nitrogen balance	This is the difference between Nitrogen intake and Nitrogen losses in the body. Nitrogen is normally taken in as protein within the diet, or in the case of parenteral nutrition, as amino acids within the parenteral nutrition solution. Nitrogen is lost through the formation of the body's waste products in urine, sweat and faeces.
Nitrogen energy	Energy gained from the breakdown of amino acids or proteins.
Non-experimental study	A study based on subjects selected on the basis of their availability, with no attempt having been made to avoid problems of bias.
Non-nitrogen energy	Energy gained from carbohydrates and lipids. .
Nutritional inadequacy	Insufficient nutrition to maintain growth, body weight, or maintain a state of health.
Obesity-related conditions	Conditions that may result from obesity, such as type 2 diabetes, coronary heart disease, and some types of cancer.
Observation	A research technique used to help understand complex situations. It involves watching, listening to and recording behaviours, actions, activities and interactions. The settings are usually natural but they can be laboratory settings, as in psychological research.
Omphalocoele	A midline abdominal wall defect in which a thin membrane surrounds the protruding organs that can include small intestine, liver, bladder, spleen, and stomach.
One-way sensitivity analysis (univariate analysis)	Each parameter is varied individually in order to isolate the consequences of each parameter on the results of the study.
Osmolality	Measurement of the number of dissolved particles present in a solution to indicate fluid concentration. It is defined as the number of osmoles (Osm) of solute per kilogram of solvent.
Osmolarity	Measurement of the number of dissolved particles present in a solution to indicate the level of fluid concentration. It is defined as the number of osmoles (Osm) of solute per litre of solution.
Oxidation	Any chemical reaction that involves the loss of electrons by the substance that is oxidised. Oxidation is a key process in the generation of energy for the cells in the body.
Parathyroid hormone	Parathyroid hormone is secreted by the parathyroid glands which are small glands situated near the thyroid gland in the neck. Parathyroid hormone regulates the level of Calcium in the blood through its actions on the bones, intestine and kidneys.
Parenteral nutrition	The provision of nutrition support through intravenous administration of nutrients such as amino acids, glucose, fat, electrolytes, vitamins and trace elements.
Parenteral nutrition associated liver disease (PNALD)	Complication of long-term parenteral nutrition; including abnormal liver function, cholestasis, conjugated hyperbilirubinemia.

Term	Definition
Patent ductus arteriosus	The ductus arteriosus is normally patent when the fetus is in the womb. It allows blood flow to bypass the lungs, as the fetus obtains oxygen from the placenta. After birth, blood flow is directed through the lungs to allow oxygen to be absorbed into the blood stream and the ductus arteriosus closes. In premature infants, the ductus may stay open (patent) and this can give rise to a number of clinical complications.
Paediatric	Paediatrics is the branch of Medicine which deals with children's health. This includes newborn babies and those born prematurely.
Performance bias	Systematic differences in care provided apart from the intervention being evaluated. For example, if study participants know they are in the control group they may be more likely to use other forms of care; people who know they are in the experimental group may experience placebo effects, and care providers may treat patients differently according to what group they are in. Masking (blinding) of both the recipients and providers of care is used to protect against performance bias.
Pericardium	The membrane around the heart.
Peripheral line/catheter	Tube inserted in the vein (arms, hands, legs or feet) to administer fluids or medication directly into the bloodstream.
Periventricular leukomalacia	Softening of the white brain matter around the ventricles of the brain leading to a cystic or honeycomb appearance to this area of the brain.
Persistent pulmonary hypertension	Continued narrowing of the arteries to the lungs, whereby the amount of blood flow to the lungs is limited and consequently limiting the amount of oxygen in the bloodstream.
pH	Direct measure of acidosis.
Phosphate	Phosphate is an important mineral and can be found in all cells in the body. It is key for growth of body tissues, as well as for bone growth.
Photo-degradation	This is the degradation of materials by light.
Phytosterols	These are compounds that naturally occur in plant-based foods, especially plant oils.
Point estimate	A best single estimate (taken from research data) for the true value of a treatment effect or other measurement. For example, researchers in one clinical trial take their results as their best estimate of the real treatment effect – this is their estimate at their point in time. The precision or accuracy of the estimate is measured by a confidence interval. Another clinical trial of the same treatment will produce a different point estimate of treatment effect.
Polyunsaturated fatty acid	These are fatty acids which contain two or more double bonds between the carbon atoms, and so have less hydrogen bonded to the chain. They are commonly found in plant oils such as sunflower oil or corn oil.
Post-conception	Post-conceptional age refers to the number of weeks of age after conception and is synonymous with corrected age. For a preterm infant born 4 weeks early, the post conceptional age is 36 weeks.
Postnatal	Following birth.
Post-operative period	The immediate period following surgery.
Potassium	Potassium is a mineral necessary for the normal functioning of cells, nerves, and muscles
Precipitates	These are formed when 2 compounds in a solution react to form a solid compound that is no longer soluble.
Preterm	Birth of a baby before 37 weeks gestation (Extremely preterm: <28 weeks gestational age; very preterm: 28 to 31 weeks gestational age; moderately preterm: 32 to 36 weeks gestational age).
Probabilistic sensitivity analysis	Probability distributions are assigned to the uncertain parameters and are incorporated into evaluation models based on decision analytical techniques (for example Monte Carlo simulation).

Term	Definition
Prognostic factor	Patient or disease characteristics, for example age or co-morbidity, that influence the course of the disease under study. In a randomised trial to compare two treatments, chance imbalances in variables (prognostic factors) that influence patient outcome are possible, especially if the size of the study is fairly small. In terms of analysis these prognostic factors become confounding factors.
Protein	Proteins are made up of chains of amino acids and are essential components for both the structure and function of the body.
Re-feeding syndrome	This occurs as a result of the re-introduction of nutrition to patients who are malnourished or starved. It is a potentially serious complication which results in abnormalities in the concentration of Magnesium, Phosphate and Potassium in the blood, which can give rise to serious effects on the heart, lungs and brain.
Renal failure	Decline in kidney function whereby the kidneys are unable to filter metabolic waste products (such as creatinine and urea nitrogen) from the blood, and are less able to control the amount and distribution of water in the body and the levels of electrolytes and acid in the blood.
Respiratory distress syndrome	A condition of newborn babies associated with immature lungs.
Retinopathy of prematurity (RoP)	A condition of the eye affecting mainly premature babies, usually those who have received oxygen therapy. It is thought to be caused by disorganised retinal blood vessel growth, which can result in scarring, and in severe cases, retinal detachment and blindness. All preterm babies at risk for this are screened for ROP in England.
Rickets	A condition that affects bone development. Symptoms of rickets in infants include soft skull and abnormal bone growth.
RNA	A single stranded chain of nucleotides which act as important chemical messengers within cells, and also translate the genetic code (DNA, Deoxyribonucleic acid) into proteins within the cells of the body
Seizures	This is sudden, abnormal electrical activity in the brain. Which can be clinically apparent (through abnormal postures and movements, and decreased consciousness) or present only on monitoring electrical brain wave activity.
Selection bias	If the characteristics of the sample differ from those of the wider population from which the sample has been drawn or if there are systematic differences between comparison groups of patients in a study in terms of prognosis or responsiveness to treatment.
Selection criteria	Explicit standards used by guideline development groups to decide which studies should be included and excluded from consideration as potential sources of evidence.
Sepsis	A condition that arises when the body's response to infection causes injury to its own tissues and organs. Blood culture-positive sepsis (when laboratory tests confirms that there are bacteria in the bloodstream) is usually treated with antibiotics for more than 5 days.
Serum iron	A measure of iron circulating in the blood. Serum iron levels can be used together with serum ferritin, transferrin saturation levels and total iron binding capacity to diagnose iron deficiency.
Serum urea	A measure of the amount of urea circulating in the blood. Urea is the nitrogen containing waste product from the breakdown of protein and amino acids in the body.
Short bowel syndrome	Abnormally short bowel which can cause nutritional problems as the body cannot digest or absorb food properly.
Skeletal system	This is the bones found in the body, including the skull.

Term	Definition
Small for gestational age	A baby's size being below a specific threshold (for example 5th or 10th centile) for a given biometric parameter (such as ultrasound measurements or birthweight) for a given gestational age.
Sodium	An essential chemical element which is an important positively charged particle (cation) in the blood and body tissues. Sodium is essential for the generation of energy within the cells.
Soft tissue	Tissues that connect, support and surround other body structures and organs, such as fat, muscle, tendons and ligaments.
Specialist	A specialist is any healthcare professional who has received appropriate training to be able to provide the particular range of specialist services he or she undertakes.
Standardised parenteral nutrition	Mixtures containing fixed formulations of nutrients, such as amino acids, glucose, fat emulsion and electrolytes in a single sterile container system (i.e. manufactured to a pre-specified formulation). Additions of other nutrients such as vitamins and trace elements and occasionally supplemental electrolytes are required to ensure complete admixtures are administered.
Systemic inflammatory response	The activation of the immune system in response to an infectious or non-infectious insult. This immune response may in turn cause damage to body tissues and organs.
Target population	The people to whom guideline recommendations are intended to apply. Recommendations may be less valid if applied to a population with different characteristics from the participants in the research study – for example in terms of age, disease state, social background.
Term	The gestational age at which a baby is normally due. Defined as 37 weeks 0 days to 42 weeks 6 days.
Tissue accretion	Growth of body tissues.
Tissue damage	Damage to muscles, ligaments and tendons (the simple elements from which the various parts and organs of the body are built).
Therapeutic hypothermia	Cooling of the body to several degrees below the core temperature, usually between 33°C and 35°C. This can be achieved by using, for example, surface techniques (e.g. heat-exchange cooling pads or ice packs), together with intravenous sedation and muscle relaxants (to prevent shivering).
Thoracic cavity	This is the cavity of the chest that contains the heart and lungs.
Thrombocytopenia	Low levels of platelets in the bloodstream. Thrombocytopenia can be caused by infection.
Thrombophlebitis	Inflammation of a vein caused by a blood clot.
Total iron binding capacity	Ability of the blood to bind iron and transport it around the body. The total iron binding capacity measurement can be used in conjunction with the serum iron level to diagnose iron deficiency. See also 'serum iron'.
Toxicity	Refers to the undesirable and harmful side effects of a drug.
Trace elements	Elements which are essential for the body to function well, but are only required in minute quantities. Examples include: Chromium, copper, fluoride, iodine, manganese, molybdenum, selenium and zinc.
Tracheo-oesophageal fistula	A birth defect where part of the oesophagus is joined to the trachea (windpipe), commonly seen in conjunction with oesophageal atresia (blind ending oesophagius).
Trans-epidermal	Across or through the skin.
Transferrin	A protein produced by the liver, which regulates the absorption of iron into the blood.
Triglyceride	See 'lipids'.

Term	Definition
Umbilical vessel	Vessels that transport blood between the placenta and the developing fetus in the womb. There are normally three umbilical vessels; two arteries and one vein.
Urinary acidification	The administration of a medication or substance that causes the pH of urine to fall (become acid).
Urinary losses	Losses of substances in the urine which may be greater than expected due to renal dysfunction. This can be due to poor kidney function prematurity, or to acquired renal dysfunction such as in hypoxic-ischaemic encephalopathy
Venous access	This is a device which is placed into a vein, and allows the administration of medication, fluid or nutrition into the blood.
Very low birthweight	A birthweight of less than 1.5 kg.
Vitamins	Nutrients required in small amounts by the body to work properly and stay healthy. For example, vitamins A, C and D.
Vitamin oxidation	Degradation of vitamins by means of the chemical reaction of oxidation. This means that the vitamin can no longer perform its function within the body.
Volvulus	Twisting of the bowel resulting in obstruction and potential compromised blood flow. Volvulus often has an abrupt onset. Pain is continuous, sometimes with colicky pain.
Z-score	A measure of how many standard deviations a child's weight is above or below the average weight for their age and gender. (This is based on a reference population known as a child growth reference).