

# Intravenous fluid therapy in hospital overview

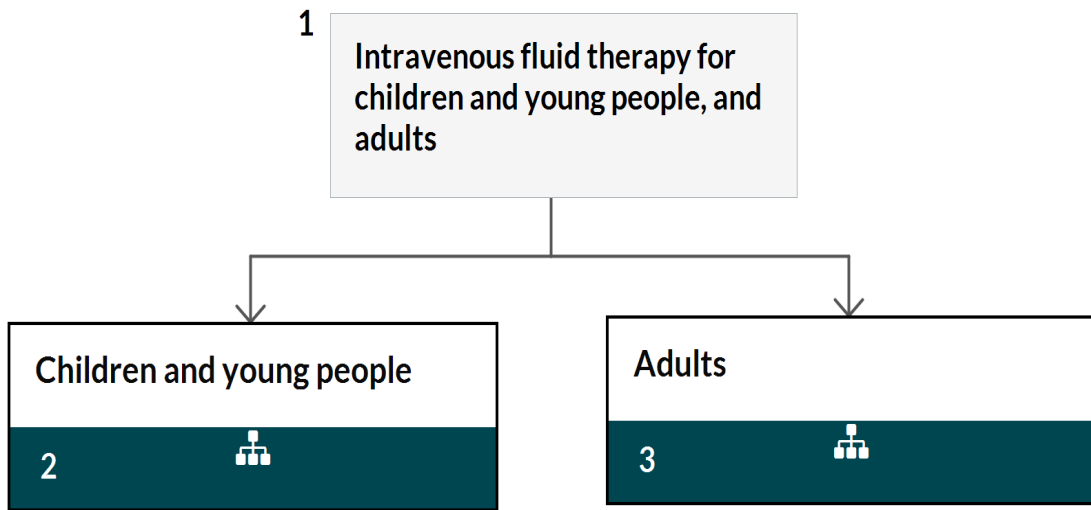
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

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/intravenous-fluid-therapy-in-hospital>

NICE Pathway last updated: 30 March 2017

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



**1 Intravenous fluid therapy for children and young people, and adults**

No additional information

**2 Children and young people**

[See Intravenous fluid therapy in hospital / Intravenous fluid therapy in children and young people in hospital](#)

**3 Adults**

[See Intravenous fluid therapy in hospital / Intravenous fluid therapy in adults in hospital](#)

**ABCDE**

airway, breathing, circulation, disability, exposure

**ADH**

antidiuretic hormone

**BMI**

body mass index

**bolus**

a volume of fluid given quickly

**creatinine**

a waste product produced by the body during muscle metabolism and normally excreted in urine. If the creatinine level increases in the blood, this may indicate decreased kidney function

**colloids**

a solution which is administered intravenously and acts as a volume expander. It is composed of particles which are not capable of passing through a semipermeable membrane. Examples of colloids include albumin, starches and gelatin. Colloids can be synthetic (containing naturally-produced proteins such as albumin or haemoglobin) and non-synthetic (containing synthetically-derived colloid particles such as hydroxyethyl starches)

**crystalloids**

a solution which is administered intravenously and acts as a volume expander. It is composed of particles which are capable of passing through a semipermeable membrane. Examples of crystalloids include 0.9% sodium chloride and Ringer's lactate solution. Crystalloids can be divided into the following groups based on their tonicity: isotonic, hypertonic and hypotonic

**dehydration**

depletion of body water and, to varying degrees, electrolytes

**Electrolyte**

ions in solution that acquire the capacity to conduct electricity

**Expert**

a healthcare professional who has core competencies to diagnose and manage acute illness. These competencies can be delivered by a variety of models at a local level, such as a critical care outreach team, a hospital-at-night team or a specialist trainee in an acute medical or surgical specialty

**fluid balance and prescription chart**

fluid balance chart: a record of a patient's fluid intake, output and balance. This may or may not be combined with a fluid prescription chart; fluid prescription chart: a record of IV fluid prescriptions administered to a patient. This may or may not be combined with a fluid balance chart

**fluid resuscitation**

the replacement of bodily fluid lost through pathological processes

**Hartmann's solution**

a solution which is administered intravenously and acts as a volume expander. It is composed of particles which are capable of passing through a semipermeable membrane. Examples of crystalloids include 0.9% sodium chloride and Ringer's lactate solution. Crystalloids can be divided into the following groups based on their tonicity: isotonic, hypertonic and hypotonic

**hypernatraemia**

increased sodium level in blood

**hypervolaemia**

term implying that the individual described appears to have increased circulating blood fluid volume within their body

**hypoglycaemia**

decreased glucose level in the blood

**hyponatraemia**

decreased sodium level in the blood

**hypotonic**

in the context of a human body cell, a hypotonic solution is one with a lower concentration of solutes outside the cell than inside the cell. When a cell is immersed in a hypotonic solution, water will flow into the cell to balance the concentration of solutes

**hypovolaemic shock**

an emergency condition in which severe blood and fluid loss mean that the heart is unable to pump enough blood to the body. This can cause organs to stop working

**isotonic**

in the context of a human body cell, an isotonic solution is one which has the same solute concentration as the cell

**IV**

intravenous

**neonates**

infants aged 28 days and under (born at term)

**NEWS**

National Early Warning Score

**oedema**

excessive fluid in or around cells

## Passive leg raising

passive leg raising is a bedside method to assess fluid responsiveness in a patient. It is best undertaken with the patient initially semi-recumbent and then tilting the entire bed through 45°. Alternatively it can be done by lying the patient flat and passively raising their legs to greater than 45°. If, at 30–90 seconds, the patient shows signs of haemodynamic improvement, it indicates that volume replacement may be required. If the condition of the patient deteriorates, in particular breathlessness, it indicates that the patient may be fluid overloaded

## point-of-care testing

laboratory testing or analyses performed in the clinical setting by non-laboratory healthcare professionals

## tachypnoea

rapid breathing

## 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.

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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.

### **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.

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.