

26. TOTAL PARENTERAL NUTRITION (TPN)

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26.2	Introduction	
26.2.1	TPN is a method of ensuring adequate nutrition when normal absorption of food and fluid by the bowel is impossible. It is a relatively recent development in the treatment of serious intestinal conditions, such as Crohn's disease, other conditions in which it is desirable to bypass the small bowel, and conditions which have necessitated its total or partial removal.	
26.2.2	A jejunostomy or ileostomy (an opening onto the skin from part of the small bowel, a stoma) is often present in people on TPN.	
26.3	General	
26.3.1	A fine tube (catheter) is inserted into a major vein in the neck, to remain there (indwelling), with the other end secured to the front of the chest and capped when not in use. The procedure involves passing 3-5 litres of feeding solution through the catheter with the aid of a sophisticated pump, weighing some 2-3kg, which is mounted on a drip stand. This takes about 8-14 hours and is usually carried out overnight.	
26.3.2	After any necessary additions to the feeding solution have been made, the infusion is connected to the catheter. This must be done wearing sterile gloves and using the methods employed in a operating theatre, to ensure that no germs are introduced, as these could easily cause a serious and often fatal infection in the bloodstream (septicaemia).	
26.3.3	The pump must be programmed accurately, as it is essential that the fluid is introduced at a constant rate, which must be slowed before it is discontinued to avoid a sudden dangerous drop in the concentration of sugars in the blood (hypoglycaemia) - [see Chapter 17].	
26.3.4	The pump will detect air in the system, which could prove fatal, or blockage of the catheter for any reason, and it is of sufficient sophistication to alert the person concerned to a problem. However, it may not be possible for the person to take the necessary action, which may be required urgently, unaided.	
26.3.5	After use, the infusion must be disconnected and the catheter flushed, using the same sterile procedures as during set-up. The dressing over the catheter	

site will also need changing.

26.3.6 Success depends to some extent on the training given before the person leaves hospital, stressing the vital importance of attention to detail, and ensuring that confidence has been gained, both in their ability to cope with the procedure, and in the responsiveness of "back-up" systems, such as provision of fluid and equipment, GP support, and a hospital on-call advice line. Success also depends on the person having a stable personality, reasonable intelligence and considerable manual dexterity and, even given favourable circumstances, most people are admitted to hospital at least once a year because of some complication such as an infection, or displacement or blockage of the catheter.

26.4 Care Needs

26.4.1 People receiving TPN have, by definition, a serious disorder of the bowel. They may be passing 2 or 3 litres or more of fluid into a stoma bag in 24 hours which leads to fatigue. They may have other serious and debilitating effects from their underlying disease, or manifestations of associated disorders, such as arthritis. Such people will be frail.

26.4.2 The aim of TPN is to keep people alive and, where possible, independent and mobile between infusions. Some are able to go to work, depending on age and the severity of the underlying disease, or look after their family unaided. Some cannot undertake these activities but are able to cope with their own care. A very small proportion are dependent on others, to administer the treatment for them at home.

26.4.3 Because of the long duration of the procedure, their general frailty, and the weight of the apparatus, help may be needed for toileting purposes during its course.

26.5 Mobility Considerations

26.5.1 TPN, in itself, should not create mobility problems but the underlying condition, especially if there are associated disorders, may be severe enough to do so.

26.6 Duration of Needs

26.6.1 For most people, TPN will be life-long. There may be some reduction in needs in the first year or so, as the general nutritional state improves, but initially there may be both physical and psychological reasons for support being desirable. Both physical disability and psychological adjustment need to be taken into consideration in each case.

26.7 Further Evidence

26.7.1 Everyone on TPN will be attending a hospital. A factual report from the hospital concerned may help establish the severity of the condition and the likely duration of needs.