

PANCREATIN (previously known as Pancrealipase)

Trade Name	Creon® Micro microspheres (Abbott) Creon® 10,000 capsules (Abbott)
Class	Pancreatic enzyme replacement therapy
Mechanism of Action	Aids in the digestion of protein, carbohydrate and fat when administered orally and controls steatorrhoea and azotorrhea.
Indications	Cystic Fibrosis - pancreatic insufficiency occurs in 85% Chronic pancreatitis Ductal obstruction of pancreas or common bile duct Post pancreatectomy Post gastrointestinal bypass surgery eg. gastroenterostomy
Contraindications	Acute Pancreatitis or acute exacerbation of chronic pancreatitis. Hypersensitivity to pork proteins.
Supplied As	Creon® Micro microspheres: 1 measured level scoop 100mg = 5,000 IU of lipase Creon® 10,000 capsules: 1 capsule = 10,000 IU of lipase
Dilution	N/A
Dosage	For term infants on 3 hourly feeds ½ -1 scoop Creon Micro or ¼ to ½ Creon capsule per breast feed or bottle feed. For premature or low birth weight infants the dose will depend on the infant's weight, feed type and volume and will be advised by the dietitian Maximum safe dose 10,000 IU lipase /kg /day Allow several days between dose adjustments
Interval	Give immediately before or during all feeds containing fat
Administration	If giving by mouth: Measure out required amount with Creon micro scoop or open a capsule and divide microspheres into the prescribed quantity. Sprinkle prescribed dose of microspheres on to a small quantity of apple puree and give on a teaspoon immediately before and or during feeds. Titrate the dose depending on the volume of the feed as per dietitian's instructions. If giving via nasogastric tube: Open a Creon capsule or measure out required number of Creon Micro scoops

	<p>Crush microspheres with a mortar and pestle or a mechanical pill crusher to a fine powder and add to usual milk 20 minutes prior to delivery.</p> <p>Alternatively, add 2 mL of sodium bicarbonate 8.4% solution (1mmol/mL) to dissolve the powdered enzymes into a solution that has no visible lumps. Draw up prescribed dose and give by NG tube immediately before feed. Dose will depend on weight and feed volume and will be calculated by Dietitian.</p> <p>Caution: Wear eye protection and gloves when crushing enzymes, as they are astringent and can cause burning/stinging sensation when exposed to skin.</p>
Compatible With	<p>Foods that have a pH lower than 7.3. (eg apple puree)</p> <p>Vit A (retinol) recommended dose for CF = 1-2 drops/day</p> <p>Vit D (colecalciferol) recommended dose for CF = 1 drop /day</p> <p>Micel E recommended dose for CF = 0.3 - 0.5 mL /day</p> <p>Sodium supplements may be required.</p>
Incompatible With	<p>Do not mix Creon microspheres with other foods, such as custard or icecream prior to administration unless directed by a dietitian.</p>
Monitoring	<p>Mouth, cheek and tongue - ensure there are no microspheres left in the mouth as the enteric coating may dissolve and the enzymes will irritate the mouth, cheeks, lips and tongue.</p> <p>Titrate the dose according to weight and steatorrhoea (texture, colour and odour) Measure faecal fat excretion (abnormal >7%), faecal steatocrit</p> <p>Blood gases and HCO₃ levels in the blood if using sodium bicarbonate solution</p> <p>Serum sodium and urine sodium</p> <p>Growth – weight , head circumference and length.</p>
Stability	<p>Microspheres/capsules: Manufacture's expiry date.</p> <p>Reconstituted solution: discard immediately after use.</p>
Storage	<p>Store in an air tight container below 25°C in a dry place.</p> <p>Check enzymes have not exceeded the expiry date or begun to deteriorate (change colour and /or texture).</p>
Adverse Reactions	<p>Under-dosing: bulky and oily stools, flatulence, abdominal discomfort</p> <p>Over-dosing: diarrhoea, peri-anal irritation</p>
Metabolism	<p>Microspheres are swallowed and pass into the duodenum where the pH reaches 5.5 and the enteric coating begins to dissolve and the enzymes are released.</p> <p>Enzymes are effective for 30 minutes after consumption.</p>

Comments	<p>Objectives of Pancreatic enzyme replacement therapy (PERT) are:</p> <ol style="list-style-type: none"> 1. To correct macro and micronutrient maldigestion. 2. To eliminate abdominal symptoms that is directly attributable to maldigestion. 3. To establish normal stools and bowel habit. 4. To sustain normal growth and nutritional status Dietitian involvement essential to teach parents about PERT before discharge.
References	<ol style="list-style-type: none"> 1. Medsafe.govt.nz datasheet CREON® Capsules 2. Stapleton DR, Anthony H, Collins CE, Powell EB, King SJ, Mews CF, Clinical practice guidelines Implementing the Australian pancreatic enzyme replacement therapy guidelines for cystic fibrosis Aust J Nutr Diet 1999 56:2 91-6 3. Anthony H, Collins CE Davidson G Mews C Robinson P Shepherd R Stapleton D Clinical practice Pancreatic enzyme replacement therapy in cystic fibrosis: Australian guidelines J. Paediatr child Health 1999 35, 125-29. 4. Taketomo CK et al. Paediatric Dosage Handbook 16th Edition. 5. Grunert J, Tai A. Crushing pancreatic enzymes with enteral feeds in an extremely premature infant with cystic fibrosis – a novel and effective technique. EJCN 2021 75, 214-217
Updated By	<p>Helen Little, Barbara Robertshawe , Adrienne Lynn Dec 2011 A Lynn, B Robertshawe Dec 2012 (re-order profile) A Lynn B Robertshawe, Sophie Hall, Respiratory Team, Jan 2022</p>