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The evidence used in the preparation of this leaflet is available on request. Please email: patient.information@salisbury.nhs.uk if you would like a reference list.

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Pancreatic enzyme replacement therapy (PERT) (page 1 of 5)

Information for patients

This leaflet answers some of the questions you may have about taking pancreatic enzymes. It explains why and how you need to take them. If you have any questions or concerns, please speak to the team caring for you.

What is the pancreas?

The pancreas is part of your digestive system. It is a gland organ that produces a fluid containing digestive enzymes.

These enzymes are needed to break down (digest) your food so it can be absorbed.

Your pancreas also produces a hormone called insulin which helps to control the amount of sugar in your blood.

Why do I need to take pancreatic enzymes?

If you have chronic pancreatitis, pancreatic cancer or have had some of your pancreas removed your pancreas may not produce enough enzymes to digest your food. As a result you may not be able to absorb the food you eat very well. This is called malabsorption.

How do I know if I have malabsorption?

If you are not fully absorbing some of the food you eat – particularly fat or carbohydrates – you may have symptoms including:

- pale, orange or yellow coloured stools, which may float and be difficult to flush away. They may be oily and foul-smelling
- your stools may be loose and you may need to go frequently
- you may experience bloating, abdominal pain, cramping and excessive wind

These symptoms may result in weight loss or failure to gain weight.

To help you absorb food properly again you will need to take replacement pancreatic enzymes.

What are pancreatic enzymes?

We treat malabsorption by replacing the enzymes you lack. There are different brands of enzymes that may be prescribed including: Creon®, Nutrizym®, Pancrease HL® or Pancrex®.

Most come in capsule form.

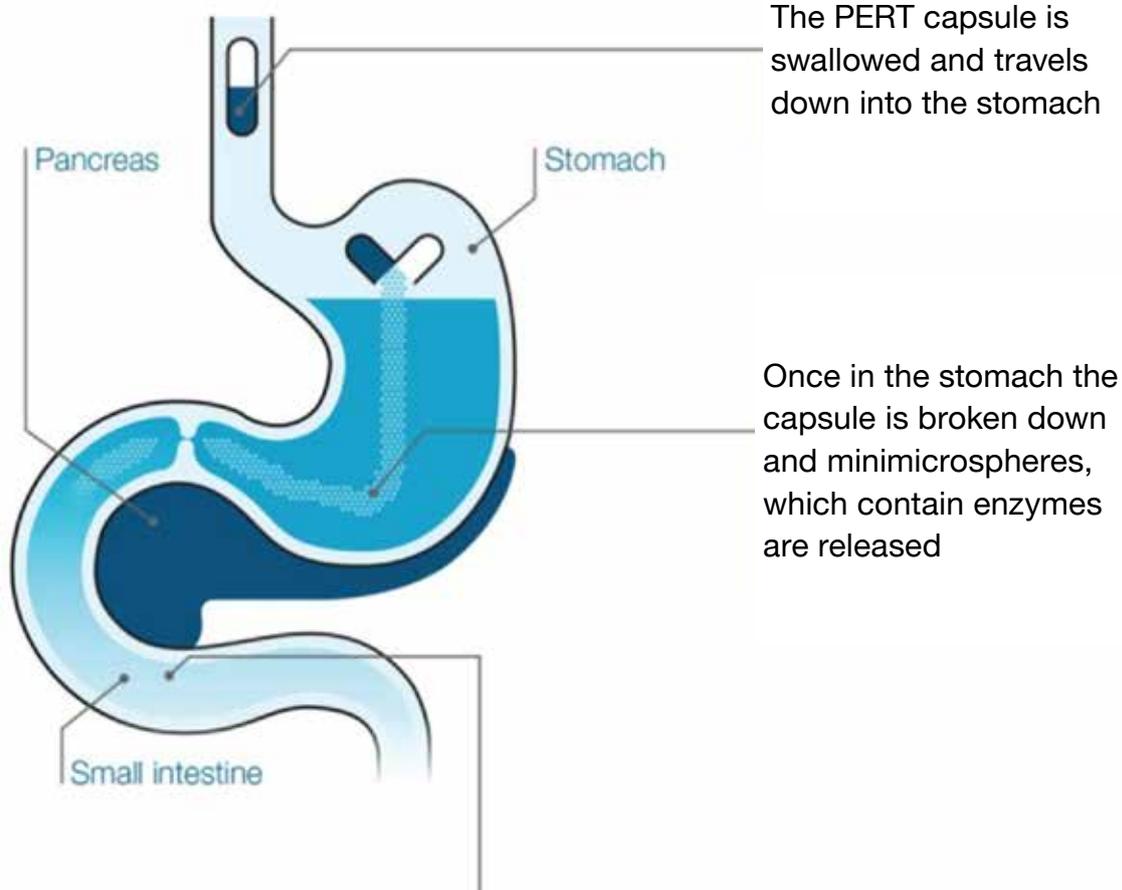
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Each capsule contains a mixture of enzymes:

- Lipase to digest fat
- Amylase to digest starchy carbohydrate
- Protease to digest protein.

They come in different strengths, for example, Creon 10000, Creon 25000 and Creon 40000 – which is not presently available. The number shows the amount of lipase in each capsule. So each Creon 25000 capsule contains less lipase than a Creon 40000 capsule. The higher the strength the larger the capsule size.

How do the enzymes work?



These enzymes mix with the food and become activated in the small intestine, breaking down food as nutrients are absorbed

For this reason PERT should always be taken with a snack or meal



How do I take pancreatic enzymes?

- you need enzymes to digest food, so take your enzyme capsules with all meals, snacks and nutritious drinks (such as milkshakes and oral nutritional supplements).
- take the enzyme capsules at the start of your meal, snack or nutritious drink.
- take them with a cold drink as hot ones may make them less effective.
- for large meals or meal times lasting longer than 30 minutes take half your enzyme dose at the start of your meal and half in the middle of your meal.
- you may need a higher enzyme dose with meals containing more fat. Your dietitian can advise you on how many enzyme capsules you need to take.
- if you find enzyme capsules difficult to swallow you can ask for a smaller capsule size. This will be a lower dose so it is likely that you will need to take more capsules.

Do I need to take any other medications?

You may need to take medication that reduces your gastric acid (such as omeprazole - proton pump inhibitor) to prevent your stomach acid making your pancreatic enzymes less effective.

How many capsules do I need to take?

The dose will depend on:

- why you have reduced pancreatic function – for example, how much of your pancreas is working, and if you have had surgery, how much of the pancreas remains
- the amount of food you are eating
- the fat content of the food
- you, as everyone is different.

Suggested starting dose:

- One Creon 25000 capsule with a snack/small meal.
- Two Creon 25000 capsules with a meal

You will need to take into account the fat content and size of each meal or snack. For example, if you are having a larger meal or a higher- fat meal or snack you may need to take more enzyme capsules.

Notes on my enzyme dose (if different from above):

How do I know I am taking enough enzymes?

If your weight is stable and you do not have any of the symptoms of malabsorption listed on page 1, then it is likely you are taking the correct enzyme dose. Your dietitian or nurse can advise you if you need more help.

Are there any side effects?

The information leaflet that comes with your enzymes will give you more detailed information. The most common side effects are nausea, abdominal pain, diarrhoea and constipation. However, only some people taking enzymes will experience these side effects and some side effects may be unrelated to the PERT.

Your anal area may become red and sore (anal excoriation) if you take too many enzymes or if the enzymes pass through you too quickly because you have diarrhoea (that is not directly related to taking the enzymes). If you have any concerns or feel unwell contact your team.

How do I store the enzymes and how long can I keep them?

Store them at temperatures below 25°C/77°F. Do not keep them in a car, particularly the glove box, because the temperature may often exceed this limit.

Keep them in their original container or a special enzyme holder. If they have passed their expiry date, return them to your pharmacy who will dispose of them appropriately.

Will I need to take any other medications?

You may need to take medication that reduces your gastric acid (such as omeprazole) to prevent your stomach acid making your pancreatic enzymes less effective.

Vegan, vegetarian and other restrictive diets that avoid pork

Please be aware that all pancreatic enzymes are pork-based; there are currently no alternatives available. Please discuss any concerns with your dietitian, doctor or nurse.

Do I need to take nutritional supplements?

If you have lost weight and/or have a poor appetite you may need to have high-energy and/or high-protein supplement drinks. You will need to take your enzymes with each supplement drink. Your dietitian will let you know if you need to start on these.

What can I eat and do I need a low-fat diet?

It is useful to know which foods and snacks are higher in fat so you can adjust your enzyme dose. Unless you are overweight and have been advised to, you do not need a low-fat diet.

You should not need enzymes with fat-free sweets such as mints, wine gums and fruit and vegetables. See next page for more information.

Examples of when you may require more enzymes	Examples of when you do not require Pancreatic Enzymes (if eaten on their own)
<p>Larger meals or meals with dessert</p> <p>If you take longer than usual to consume your meal (e.g. buffet, party)</p> <p>High fat meals including:</p> <ul style="list-style-type: none"> • Fried foods, hot chips, fish in batter, fatty meats, beef-burgers, doner kebabs, sausages, pies, pasties, suet pudding, pizza, samosas, pakora, paratha • Curries (takeaways) or homemade using oil or ready prepared sauces • Croissants, doughnuts, pastries, baklava, steamed puddings • Cheesecakes, ice-cream, dishes made with cream, crumbles and pies • Oily dressings, mayonnaise and sauces • Chocolate drinks (unless low in fat), chocolate, fudge, toffee (more than 2-3 squares at a time) • Milk, creamy soups • Nutritional supplements. 	<p>Any food or drink that contains virtually no protein or fat: including those listed below:</p> <ul style="list-style-type: none"> • Fresh or tinned fruit, jelly and sorbet • Sweets, e.g. boiled lollies, jelly babies/wine gums, mints, pastilles, chews, chewing gum and jelly sweets • Soft drinks, juice, cordial • Clear soup, Bovril, consommé • Tea or coffee with a dash of milk and sugar.