Pancreatic elastase-1 (faeces)

Fact sheet for clinicians

Overview
Pancreatic elastase-1 (E1) is a protease enzyme produced exclusively by the pancreas. E1 is not broken down in the gastrointestinal tract and is therefore detectable in the faeces. For this reason, measurement of faecal elastase can provide information on the exocrine activity of the pancreas.

Clinical indications for testing
- Patients with clinical features which may be consistent with pancreatic exocrine insufficiency (steatorrhea, abdominal pain, bloating, weight loss etc.)
- Patients at risk of pancreatic exocrine insufficiency (e.g. cystic fibrosis, chronic pancreatitis)

Interpretation of results

<table>
<thead>
<tr>
<th>Pancreatic elastase (μg/g)</th>
<th>Interpretation</th>
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<tbody>
<tr>
<td>&gt;200</td>
<td>Normal</td>
</tr>
<tr>
<td>100-199</td>
<td>Mild-to-moderate exocrine pancreatic insufficiency</td>
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<tr>
<td>&lt;100</td>
<td>Severe exocrine pancreatic insufficiency</td>
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Results must be interpreted with the pre-test probability of exocrine pancreatic insufficiency in mind. If the pre-test probability is not high, a faecal elastase within the reference interval has a high predictive value for the exclusion of pancreatic exocrine insufficiency, whereas a low or undetectable faecal elastase is suggestive but not diagnostic of pancreatic exocrine insufficiency. These patients warrant further investigation and gastroenterology review. Conversely, if the pre-test probability is high, a normal elastase result may be insufficient to entirely exclude the diagnosis.(1)

Limitations of the test
- The test performs best on formed stool samples. Whilst liquid stools will not be rejected, falsely low results are possible due to dilution in watery samples.
- Pancreatic elastase results should be interpreted with caution in patients with intestinal inflammation or enteropathy.
- An abnormal pancreatic elastase result in isolation is insufficient to make the diagnosis of exocrine pancreatic insufficiency. Such results should be further investigated with a full clinical assessment and other investigations (e.g. pancreatic imaging).

Interferences
The pancreatic elastase assay generally performs well. Interferences are rare, however clinically discordant results should be discussed with the laboratory.

Pancreatic enzyme replacement therapy (Creon) does not interfere with the elastase-1 assay.
Specimen requirements and assay details

Analytical method: Chemiluminescent immunoassay (DiaSorin Liaison XL)

Sample type: Stool sample in plain container (no preservative required)

Minimum volume: 0.5g of stool

Collection requirements: Collect into a clean, airtight container with no preservative.

Transport: Transport frozen

Stability: 7 days at 2-8°C
1 month frozen (-20°C)

Testing frequency: Results available within 7 days of receipt by the laboratory

Cost: This is a non-MBS test with a fee to patients of $50

Send samples to: Chemical Pathology
Level 4, Campus Centre, Prince of Wales Hospital
Barker St, Randwick, NSW 2031

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References