

Amylase Isoenzymes

Description	Differentiation of total serum amylase into pancreatic and non-pancreatic (predominantly salivary) forms.
Indication	Amylase isoenzymes may be useful to determine the cause of a raised amylase when this is not clinically apparent by revealing or excluding pancreatic involvement. This may be useful in HIV patients to differentiate drug-induced pancreatitis from an increase in the non-pancreatic form in an HIV patient receiving highly active anti-retroviral therapy (HAART).
Additional Info	Amylase is an enzyme that hydrolyses polysaccharides. It occurs in many tissues and organs, including the salivary glands, which secrete S-type and the pancreas, which secretes P-type amylase. Its small size permits renal filtration, and amylase is the only enzyme normally present in urine. Macroamylase is a large complex of amylase with immunoglobulin, and is a benign cause of persistently raised serum amylase with normal urine amylase and normal serum lipase. Macroamylase is found in 1% of patients with normal amylase, 5% of patients with high amylase and 13% of HIV positive patients.
Concurrent Tests	Lipase can provide additional information due to its greater specificity for the pancreas. Where both pancreatic and non-pancreatic fractions of amylase are elevated but lipase is normal, macroamylase should be suspected. Urine amylase can be measured to confirm this.
Dietary Requirements	N/A
Interpretation	<p><u>High pancreatic amylase:</u> pancreatic disease, biliary tract disease, intestinal obstruction, duodenitis, perforated peptic ulcer, gastritis, mesenteric infarction, acute appendicitis</p> <p><u>High non-pancreatic amylase:</u> salivary gland disease, mumps, parotitis, acute alcohol abuse, septic shock, diabetic ketoacidosis, cardiac surgery, tumours, drugs, ruptured ectopic pregnancy, salpingitis, ovarian malignancy, African ethnicity</p> <p><u>High mixed/unknown amylase:</u> renal insufficiency, trauma, macroamylase, ruptured aortic aneurysm, peritonitis</p>
Collection Conditions	N/A
Frequency of testing	Repeat measurement inappropriate