

PANCREATIC FUNCTION TESTS

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Pancreatic Function Tests

Indications:

- Presence of signs characteristic of digestive disturbances.
- In cases of elevated blood sugar level.

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Pancreatic Function Tests**Classification of pancreatic function tests:****A- Primary diagnostic tests**

- 1) Microscopic examination of feces for undigested food.
- 2) Fecal trypsin.
- 3) Serum lipase determination.
- 4) Serum amylase determination.
- 5) Blood glucose and glucose tolerance test.
- 6) Absorption test.

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Pancreatic Function Tests**Classification of pancreatic function tests:****B- Secondary diagnostic tests**

- Serum albumin level.
- Serum calcium level.
- Prothrombin time.
- Blood urea level.

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A- Primary diagnostic tests

1. Microscopic examination of feces for undigested food.

- Detection of fat.
- Detection of striated muscles.
- Detection of starch.

2. Detection of Fecal trypsin.

Gelatin digestion test

Film test

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A- Primary diagnostic tests

3. Determination of serum lipase level

4. Determination of serum amylase level

5. Blood glucose and glucose tolerance test.

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A- Primary diagnostic tests**5. Blood glucose and glucose tolerance test.**

Glucose tolerance test is one of the tests that used for diagnosis of diabetes mellitus. Diabetes mellitus is characterized by hyperglycemia associated with glucosuria, polyuria and polydipsia. There are two types of glucose tolerance test: Oral Glucose tolerance test and intravenous glucose tolerance test.

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For oral glucose tolerance test:

The patient must be fasted for 8-12 hours before the time of test. A blood sample is drawn to measure blood glucose level. A measured amount of glucose is given to the patient. Blood glucose level is measured at one and two hours.

Normal glucose tolerance test:

Fasting blood glucose level is below **110 mg/dl**
blood glucose level at one hour must be less than **160 mg/dl**.

Blood glucose level at two hours must be less than **140 mg/dl**.

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Impaired glucose tolerance test (pre-diaetic state of hyperglycemia):

- Fasting blood glucose level is higher than **110 mg/dl** and less than **126 mg/dl**.
- Blood glucose level at two hours is higher than **140 mg/dl** and less than **200 mg/dl**.
- Diabetes mellitus is confirmed when fasting blood glucose level is higher than **126mg/dl** and when blood glucose at two hours is higher than **200 mg/dl**.

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Hyperglycemia

- Diabetes mellitus from deficiency of insulin.
- Acute pancreatic necrosis.
- Chronic pancreatitis.
- Adrenal cortex over activity.
- Hyperthyroidism.
- Chronic liver diseases.
- Glucose infusion or ingestion of large amounts of carbohydrates.

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Hypoglycemia

- Hyperinsulinism.
- Insulin over dosage in treatment of diabetes mellitus.
- Neoplasia of pancreas.
- Severe exertion.
- Starvation.
- Hypothyroidism.
- Hypopituitarism.
- Adrenal cortical insufficiency.
- Bovine and ovine ketosis.

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A- Primary diagnostic tests

6. Absorption test.

Vitamin A in oil immersion is administered orally and absorption is determined by measurement of vit. A levels in the blood. In the normal animal, an increase in serum Vit. A will occur. The absence of such elevation indicates failure of absorption.

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