Overview

Useful For
Diagnosing protein-losing enteropathies

Profile Information

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Reporting Name</th>
<th>Available Separately</th>
<th>Always Performed</th>
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</thead>
<tbody>
<tr>
<td>AATS</td>
<td>Alpha-1-Antitrypsin, S</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>A1ATF</td>
<td>Alpha-1-Antitrypsin, 24 Hr, F</td>
<td>No</td>
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</tbody>
</table>

Method Name
Nephelometry

NY State Available
No

Specimen

Specimen Type
Fecal
Serum

Ordering Guidance
The recommended procedure for protein-losing enteropathy is A1AFS / Alpha-1-Antitrypsin Clearance, Feces and Serum.

Shipping Instructions
Feces and serum should be shipped together. Specimens shipped separately may delay testing.

Specimen Required
Both feces and serum are required.

Blood must be drawn during the stool collection period.

Specimen Type: Serum

Collection Container/Tube: Red top or serum gel

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions:
1. Centrifuge within 2 hours.

2. Aliquot and ship in plastic vial.

**Specimen Type:** Feces

**Supplies:** Stool Containers - 24, 48, 72 Hour Kit (T291)

**Container/Tube:** Stool container

**Specimen Volume:** Entire collection

**Collection Instructions:**

1. Collect a 24-hour fecal collection.

2. If no specimen is obtained within 24 hours, extend collection time to 48 to 72 hours. Document time frame.

**Forms**

If not ordering electronically, complete, print, and send a [Gastroenterology and Hepatology Client Test Request](#) (T728) with the specimen.

**Specimen Minimum Volume**

Homogenized feces: 1 mL

Serum: 0.5 mL

**Reject Due To**

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>OK</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>OK</td>
</tr>
<tr>
<td>Feces collected in any preservative or fixative</td>
<td>Reject</td>
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</tbody>
</table>

**Specimen Stability Information**

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Fecal</td>
<td>Frozen (preferred)</td>
<td>14 days</td>
<td></td>
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<tr>
<td></td>
<td>Ambient</td>
<td>14 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refrigerated</td>
<td>14 days</td>
<td></td>
</tr>
<tr>
<td>Serum</td>
<td>Frozen (preferred)</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refrigerated</td>
<td>28 days</td>
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**Clinical and Interpretive**

**Clinical Information**
Alpha-1-antitrypsin (AAT) is a 54kDa glycoprotein that is resistant to degradation by digestive enzymes and is, therefore, used as an endogenous marker for the presence of blood proteins in the intestinal tract. AAT clearance is reliable for measuring protein loss distal to the pylorus. A serum sample is required to interpret results as a serum deficiency of AAT would make the AAT fecal excretion lower and could invalidate the test utility.

Gastrointestinal protein enteropathy has been associated with regional enteritis, sprue, Whipple intestinal lipodystrophy, gastric carcinoma, allergic gastroenteropathy, intestinal lymphangiectasia, constrictive pericarditis, congenital hypogammaglobulinemia, and iron deficiency anemia associated with intolerance to cow's milk. Increased fecal excretion of AAT can be found in small and large intestine disease and is applicable to adult and children.

**Reference Values**

**CLEARANCE:**

< or =27 mL/24 hours

**FECAL ALPHA-1-ANTRYPSIN CONCENTRATION:**

< or =54 mg/dL

**SERUM ALPHA-1-ANTRYPSIN CONCENTRATION:**

100-190 mg/dL

**Interpretation**

Elevated alpha-1-antitrypsin (AAT) clearance suggests excessive gastrointestinal protein loss. The positive predictive value of the test has been found to be 97.7% and the negative predictive value is 75%.

Patients with protein-losing enteropathies generally have AAT clearance values greater than 50 mL/24 hours and AAT fecal concentrations above 100 mg/dL. Borderline elevations above the normal range are equivocal for protein-losing enteropathies.

**Cautions**

In the absence of either a 24-hour fecal collection or a contemporary serum specimen, the fecal concentration of alpha-1-antitrypsin (AAT) can be used as a surrogate marker. The clearance test is preferred as it normalizes the large range of serum AAT concentrations and the variability in random fecal AAT concentrations.

When gastric loss of AAT is suspected (eg, Menetrier disease), AAT clearance is not a reliable indicator of protein loss as AAT is sensitive to pH <3 and rapidly destroyed. When gastric protein loss is suspected and the AAT clearance is normal, the recommendation is to repeat testing after starting an acid suppressive medication regime.

**Supportive Data**

Protein-losing enteropathy has been studied by intravenous injection of radioactive chromium chloride or labeled human serum albumin. The correlation between radiochromium and stool alpha-1-antitrypsin clearance has been measured with excellent correlation coefficients.

**Clinical Reference**


Performance

Method Description
Immunonephelometry quantitates the alpha-1-antitrypsin (AAT) contained in a 24-hour fecal collection. From the concentration of feces and serum AAT, a 24-hour clearance is calculated. In the absence of a serum specimen or a timed fecal collection, an AAT fecal concentration will be reported. (Package insert: N Antiserum to Human alpha-1-antitrypsin. Siemens Healthcare Diagnostics Inc; 01/2018)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
Same day/1 to 2 days

Specimen Retention Time
Serum/2 weeks; Stool/Aliquot 2 weeks

Performing Laboratory Location
Rochester

Fees and Codes

Fees
Test Definition: A1AFS
Alpha-1-Antitrypsin Clearance

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact Customer Service.

Test Classification
This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information
82103 x 2

LOINC® Information

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