**Overview**

**Useful For**
- Evaluation of patients with suspected peanut allergy
- Evaluation of patients with possible peanut cross-reactivity

**Testing Algorithm**
Testing begins with analysis of peanut IgE. If peanut IgE is negative (<0.10 kU/L), testing is complete.
If peanut IgE is 0.10 kU/L or greater, then 7 peanut components (Ara h 2, Ara h 1, Ara h 3, Ara h 6, Ara h 8, Ara h 9, and profilin Bet v2) are performed at an additional charge.

**Special Instructions**
- **Allergens - Immunoglobulin E (IgE) Antibodies**

**Highlights**
The determination of the relative amount of IgE antibody to total peanut, and IgE antibodies to specific peanut components, can aid in assessment of the potential strength and type of allergenic response to peanuts.
IgE antibody to total peanut extract will be tested.
If detectable total peanut IgE antibody is present, additional specific peanut allergen antibody testing will be performed.
This is comprised of testing for IgE antibodies to the potential allergens Ara h 2, Ara h 1, Ara h 3, Ara h 6, Ara h 8, Ara h 9, and profilin Bet v2.

**Reflex Tests**

<table>
<thead>
<tr>
<th>Test Id</th>
<th>Reporting Name</th>
<th>Available Separately</th>
<th>Always Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNTCP</td>
<td>Peanut Components, IgE, S</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Method Name**
Fluorescent Enzyme Immunoassay (FEIA)

**NY State Available**
Yes

**Specimen**

**Specimen Type**
Serum

**Ordering Guidance**
For a listing of allergens available for testing, see **Allergens - Immunoglobulin E (IgE) Antibodies** in Special Instructions

**Specimen Required**

- **Container/Tube:**
  - **Preferred:** Red top
  - **Acceptable:** Serum gel
- **Specimen Volume:** 2 mL
Test Definition: PEANT
Peanut Component Reflex, S

Forms
If not ordering electronically, complete, print, and send an Allergen Test Request (T236) with the specimen.

Reject Due To
- Gross hemolysis  OK
- Gross lipemia  OK
- Gross icterus  OK

Specimen Minimum Volume
0.75 mL

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>14 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>90 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>7 days</td>
<td></td>
</tr>
</tbody>
</table>

Clinical & Interpretive

Clinical Information

<table>
<thead>
<tr>
<th>Allergen</th>
<th>Most common reaction type</th>
<th>Heat and digestion stability</th>
<th>Selected potential cross-reactivity with other allergens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ara h1   (storage peanut protein)</td>
<td>Systemic</td>
<td>Stable</td>
<td>Some potential allergic cross reactivity with plant vicilins, including those found in soy and pea</td>
</tr>
<tr>
<td>Ara h2   (storage peanut protein)</td>
<td>Systemic</td>
<td>Strongly stable</td>
<td>Some potential allergic cross reactivity with almond and brazil nut allergens Ara h6</td>
</tr>
<tr>
<td>Ara h3   (storage peanut protein)</td>
<td>Systemic</td>
<td>Stable</td>
<td>Some potential allergic cross reactivity with hazelnut and soybean allergens</td>
</tr>
<tr>
<td>Ara h6   (storage peanut protein)</td>
<td>Systemic</td>
<td>Strongly stable</td>
<td>Ara h2</td>
</tr>
<tr>
<td>Ara h8   (PR-10 protein, Bet v 1-homologous allergen)</td>
<td>Associated with local reactions such as oral allergy syndrome (OAS)</td>
<td>Labile to heat and digestion</td>
<td>Associated with allergy to birch and birch related tree pollen</td>
</tr>
<tr>
<td>Ara h9   (lipid transfer)</td>
<td>Associated with both</td>
<td>Stable</td>
<td>Associated with allergy</td>
</tr>
</tbody>
</table>
Test Definition: PEANT
Peanut Component Reflex, S

<table>
<thead>
<tr>
<th>protein)</th>
<th>systemic reactions and local reactions such as OAS</th>
<th>to peach and peach related fruits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profilin Bet v2</td>
<td>Associated with more minor local reactions such as OAS</td>
<td>Labile to heat and digestion</td>
</tr>
</tbody>
</table>

Reference Values

<table>
<thead>
<tr>
<th>Class</th>
<th>IgE kU/L</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>&lt;0.10</td>
<td>Negative</td>
</tr>
<tr>
<td>0/1</td>
<td>0.10-0.34</td>
<td>Borderline / Equivocal</td>
</tr>
<tr>
<td>1</td>
<td>0.35-0.69</td>
<td>Equivocal</td>
</tr>
<tr>
<td>2</td>
<td>0.70-3.49</td>
<td>Positive</td>
</tr>
<tr>
<td>3</td>
<td>3.50-17.4</td>
<td>Positive</td>
</tr>
<tr>
<td>4</td>
<td>17.5-49.9</td>
<td>Strongly positive</td>
</tr>
<tr>
<td>5</td>
<td>50.0-99.9</td>
<td>Strongly positive</td>
</tr>
<tr>
<td>6</td>
<td>&gt; or =100</td>
<td>Strongly positive</td>
</tr>
</tbody>
</table>

Interpretation
When detectable total peanut IgE antibody is present (> or =0.10 IgE kUa/L), additional specific component IgE antibody testing will be performed. If at least one potential specific allergenic peanut component IgE is detectable (> or =0.10 IgE kUa/L), an interpretative report will be provided.
When the sample is negative for total peanut IgE antibody (<0.10 IgE kUa/L), further testing for specific peanut component IgE antibodies will not be performed. Negative IgE results for total peanut antibody may indicate a lack of sensitization to potential peanut allergenic components.

Cautions
Results from peanut specific IgE antibody testing must be interpreted in the context of patient's clinical evaluation and history of allergen exposures.
Negative results for IgE to total peanut and any peanut components do not completely exclude the possibility of clinically relevant allergic responses upon exposure to peanut. Clinical correlation of results from in vitro IgE testing with patient history of allergic or anaphylactic responses to peanut is recommended.
Positive results for IgE to total peanut or any potential peanut allergenic components are not diagnostic for peanut allergy, and only indicate patient may be sensitized to peanut or a cross-reactive allergen. Clinical correlation of results from in vitro IgE testing with patient history of allergic or anaphylactic responses to peanut is recommended.
Testing for IgE antibodies may not useful in patients previously treated with immunotherapy to determine if residual clinical sensitivity exists, or in patients in whom the medical management does not depend upon identification of allergen specificity.
Some patients with significantly elevated concentrations of total peanut IgE antibodies do not have any reaction when administered a peanut oral food challenge. This may be due to the presence of an IgE antibody specific for a nonallergenic protein present within the peanut extract. Furthermore, some individuals with clinically insignificant or no sensitivity to allergens may have detectable levels of IgE antibodies in serum; therefore results must be interpreted in the clinical context.
False-positive results for IgE antibodies may occur in patients with markedly elevated serum IgE (>2500 kU/L) due to nonspecific binding to allergen solid phases.

**Clinical Reference**

**Performance**

**Method Description**
Specific IgE from the patient’s serum reacts with the allergen of interest, which is covalently coupled to an ImmunoCAP. After washing away nonspecific IgE, enzyme-labeled anti-IgE antibody is added to form a complex. After incubation, unbound anti-IgE is washed away and the bound complex is then incubated with a developing agent. After stopping the reaction, the fluorescence of the eluate is measured. Fluorescence is proportional to the amount of specific IgE present in the patient's sample (ie, the higher the fluorescence value, the more IgE antibody is present).(Package insert: ImmunoCAP System Specific IgE FEIA. Phadia; Rev 06/2019)

**PDF Report**
No

**Specimen Retention Time**
14 days

**Performing Laboratory Location**
Rochester
Fees & Codes

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
86003