**Clinical Use**
- Diagnose disorders of the hypothalamic-pituitary-adrenal system
- Differentiate Cushing’s syndrome from normal when ACTH levels are low

**Reference Range**

<table>
<thead>
<tr>
<th>Gender</th>
<th>ACTH (pg/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>7-50</td>
</tr>
<tr>
<td>Women</td>
<td>5-27</td>
</tr>
<tr>
<td>Children*</td>
<td></td>
</tr>
<tr>
<td>Prepubertal</td>
<td>7-28</td>
</tr>
<tr>
<td>Pubertal</td>
<td>2-49</td>
</tr>
</tbody>
</table>

*Pediatric data from *Euro J Endocrin*. 1997; 137:635-647.

**Interpretive Information**

- ACTH-secreting tumor
- Pituitary Cushing’s disease
- Addison’s disease
- Stress
- Adrenal adenoma
- Adrenal carcinoma
- Secondary adrenal insufficiency

**Clinical Background**

Adrenocorticotropic hormone (ACTH) is a 39-amino acid polypeptide secreted mainly by the anterior pituitary gland. The hypothalamus controls pituitary ACTH secretion by means of corticotropin releasing hormone (CRH), a 41-amino acid peptide released in response to pain, anxiety, and stress. There also is a diurnal variation. Cortisol exerts negative feedback control on the secretion of ACTH at the pituitary gland and hypothalamic levels.

Plasma ACTH measurements are useful in diagnosing disorders of the hypothalamic-pituitary-adrenal system.

**Method**

- Immunochemiluminometric assay (ICMA)
- Detects intact ACTH
- Analytical sensitivity: 5 pg/mL

**Specimen Requirements**

1.5 mL frozen EDTA plasma
0.3 mL minimum

Collect samples between 7 and 10 AM.