**Creatinine Clearance**

<table>
<thead>
<tr>
<th>RESULTS</th>
<th>REFERENCE INTERVAL</th>
<th>-2SD</th>
<th>-1SD</th>
<th>MEAN</th>
<th>+1SD</th>
<th>+2SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creatinine Clearance</td>
<td>109 mL/min/BSA</td>
<td>75– 120</td>
<td></td>
<td></td>
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<tr>
<td>Urine Creatinine</td>
<td>1200 mg/24h/BSA</td>
<td>600– 2100</td>
<td></td>
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<tr>
<td>Serum Creatinine</td>
<td>0.73 mg/dL</td>
<td>0.6– 1.3</td>
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</tbody>
</table>

**INFORMATION**

Creatinine Clearance is a test used for estimating glomerular filtration rate (GFR). Creatinine is derived from the metabolism of creatine from skeletal muscle and dietary meat intake, and is released into the circulation at a relatively constant rate. Creatinine is freely filtered by the glomeruli and not reabsorbed or metabolized by renal tubules. Therefore, creatinine clearance can be used to assess GFR.

It is not uncommon for elderly patients and those with heavy metal toxicity to have mild to moderate impairment of renal function. Renal disease is asymptomatic in most cases until late in its clinical course. Safe chelation therapy is highly dependent upon the adequacy of renal function. Excessive mobilization of toxic metals to poorly functioning kidneys may result in renal complications. It is advised that creatinine clearance be monitored prior to and throughout chelation therapy.

**Interpretive guidelines:**

Decreased creatinine clearance indicates decreased glomerular filtration rate (GFR). This can be due to conditions such as progressive renal disease, or result from effects of drugs or ineffective renal perfusion (e.g. volume depletions, heart failure). Increased creatinine clearance is often referred to as hyperfiltration and is most commonly seen during pregnancy or in patients with early diabetes mellitus. It may also occur with large dietary protein intake. Exercise may cause increased clearance.

Inaccurate results may be caused by failure to accurately follow specimen collection instructions. Creatinine clearance normalized to body surface area is calculated by the following equation in mL/min/BSA:

\[
\text{Urine volume (mL) per min} \times \text{urine creatinine (mg/L)} = \text{Serum creatinine (mg/L) x 1.73/BSA}
\]

**References:**


**SPECIMEN DATA**

- Date Collected: 02/06/2019
- Height: 65 in
- Collection Period: 24 hours
- Date Received: 02/09/2019
- Weight: 176 lbs
- Volume: 2900 ml
- Date Completed: 02/14/2019
- Body Surface Area: 1.87
- Methodology: Automated Jaffe