Hepatic Proteins and Nutrition Assessment

KEY POINTS TO REMEMBER:

- Albumin, Prealbumin and Transferrin are NOT recommended as markers for nutritional status.
- Decreased albumin, prealbumin and transferrin reflect the severity of illness NOT nutritional status or degree of malnutrition.
- Decreased albumin, prealbumin and transferrin help identify patients likely to DEVELOP malnutrition.
- Exogenous substrate will not restore hepatic proteins to normal in the face of inflammation, infection and illness (when CRP is elevated).
- Resolution of inflammation, not exogenous substrate from nutrition support, restores normal hepatic protein metabolism and eventually serum levels of negative acute phase proteins.
- Improved albumin, prealbumin and transferrin levels do NOT measure nutrition repletion, but rather measure decreased morbidity. Average increase in albumin due to nutrient/protein intake is only 0.4 mg/dL.
- Hepatic proteins of patients with Anorexia Nervosa (very poor nutritional intake) will not differ from normally nourished patients with adequate intake.
- N Balance reflects recovery from inflammation and a decrease in net protein catabolism.

WHAT ELSE CAN AFFECT HEPATIC PROTEINS?

<table>
<thead>
<tr>
<th>Decreased</th>
<th>Increased</th>
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<tbody>
<tr>
<td><strong>Prealbumin</strong>&lt;br&gt;Negative Acute phase protein</td>
<td>Inflammation, infection, acute stress, recent surgery, malignancy, protein wasting disease of intestine, liver damage, burns, zinc deficiency, salicylate poisoning</td>
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<tr>
<td><strong>Albumin</strong></td>
<td>Inflammation, infection, acute stress, recent surgery, liver disease, pregnancy, protein losing nephropathies and enteropathies, edema (hemodilution), increased capillary permeability</td>
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<tr>
<td><strong>Transferrin</strong>&lt;br&gt;Negative acute phase protein</td>
<td>Inflammation, chronic illness, malignancy, collagen vascular disease, liver disease</td>
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<td><strong>C-Reactive Protein</strong>&lt;br&gt;Positive Acute Phase Protein</td>
<td>CRP disappears when the inflammatory process is suppressed by salicylates or steroids</td>
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References: