MANGANESE

MAIN FUNCTIONS

- Structural component of antioxidant enzymes
- Facilitates bone development
- Helps make and break down glucose and amino acids

GOOD SOURCES

<table>
<thead>
<tr>
<th>Whole Grains</th>
<th>Nuts</th>
<th>Pineapple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown Rice (cooked), ½ cup, 1.1 mg</td>
<td>Pecans, 1 ounce (19 halves), 1.3 mg</td>
<td>Pineapple (raw, chunks), ½ cup, 0.77 mg</td>
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</tbody>
</table>

DAILY RECOMMENDATION

Men: 2.3 mg
Women: 1.8 mg

SPECIAL NOTES

- Mangaense deficiency is not common.
- Excessive manganese is neurotoxic and can cause irreversible brain damage. Tolerable Upper Intake Levels from food and supplements range from 2 mg/day for infants to 11 mg/day for adults.
- Newborns, children, and individuals diagnosed with iron deficiency or chronic liver disease are especially sensitive to mangansese overexposure.