Manufacturers recommend that fat-soluble vitamins (D, E, A, and K) should be consumed four hours before or after chitosan, on the assumption that fat excretion induced by chitosan could lead to malabsorption of these vitamins. However, the one study that measured serum levels of fat-soluble vitamins did not demonstrate any reduction of levels.6

Regulation

Two manufacturers of chitosan products have been sanctioned for false claims of efficacy. The TRY-Lean Corp was warned by the Food and Drug Administration in 1999,14 and the makers of “Fat Trapper,” Enforma Natural Products Inc was penalized by the Federal Trade Commission and required to pay fines and refunds in 2000.15 Despite this, products still have provocative names like “Fat Absorber,” although the marketing emphasis is now on cholesterol lowering rather than weight loss.

Formulation

Chitosan is marketed as a dietary supplement in the United States. It is marketed by numerous companies, usually in dosages of 500-1,000 mg per tablet. It is sometimes combined with vitamin C, as one of the animal studies showed a synergistic effect of vitamin C and chitosan with respect to inhibiting fat digestion.2 Table 1 shows a sampling of popular chitosan products.

Conclusion

Whether chitosan can reduce weight by itself is uncertain. The weight of the evidence seems to indicate it cannot, although the recent Polish study indicates that as part of a rigorous program of diet, exercise, and behavioral modification, chitosan may have adjunctive benefit. The data for cholesterol lowering also are mixed, although chitosan in combination with glucomannan shows some promise for this use.

Table

<table>
<thead>
<tr>
<th>Product</th>
<th>Manufacturer</th>
<th>Dosage</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorbitol Fat Binder</td>
<td>Natrol</td>
<td>900 mg</td>
<td>$12.95 (60 count)</td>
</tr>
<tr>
<td>Chitosan</td>
<td>Natrol</td>
<td>500 mg</td>
<td>$21.95 (180 count)</td>
</tr>
<tr>
<td>Chitosol</td>
<td>Twinlab</td>
<td>1,000 mg (with 200 mg vitamin C)</td>
<td>$19.95 (60 count)</td>
</tr>
<tr>
<td>Chitosan Plus</td>
<td>Nature’s Best</td>
<td>500 mg</td>
<td>$9.95 (100 count)</td>
</tr>
</tbody>
</table>

Recommendation

Chitosan alone cannot be recommended as a weight loss agent. More study is needed to determine its role in the management of lipid disorders. As it appears safe, a trial for cholesterol lowering can be considered, perhaps for low-risk patients who are near their LDL goal. Because of its source, chitosan cannot be recommended for people who have an allergy to shellfish.

References