The sweet miracle of xylitol
By Dr Deborah Horch, Germany

The latest analysis by German consumer watchdog publication ÖKO-TEST (September 2015 issue) of a variety of chewing gums only rated brands containing xylitol as “good” or “very good”, while some of the global competing products containing other sweeteners were rated only “fair” or “poor”. There are plenty of good alternatives to chewing gum, such as boiled sweets and xylitol powder, which compares almost one to one to granulated sugar in its sweetness. In order to benefit fully from its positive properties, five grams of xylitol a day is generally recommended. An intake of 50 grams for adults and 30 grams for children is well tolerated. In order to ensure that products only contain xylitol and no other sweeteners, the list of ingredients should be checked.

“Xylitol cannot replace fluoride entirely. It should rather be regarded as a valuable addition to dental prophylaxis.”

Table 1: Overview of relevant studies.

<table>
<thead>
<tr>
<th>Research center</th>
<th>Duration in years</th>
<th>Dose g / day</th>
<th>Reduction of caries incidence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Turku, Finland</td>
<td>2</td>
<td>67</td>
<td>&gt;85</td>
</tr>
<tr>
<td>2. USSR</td>
<td>2</td>
<td>38</td>
<td>73</td>
</tr>
<tr>
<td>3. WHO – Thailand</td>
<td>2.5 – 2.7</td>
<td>20 bis 20</td>
<td>–</td>
</tr>
<tr>
<td>4. Montreal, Canada</td>
<td>1 – 2</td>
<td>3 – 7</td>
<td>52</td>
</tr>
<tr>
<td>5. Ylivieska, Finland</td>
<td>21 months</td>
<td>7 – 10</td>
<td>50 – 84</td>
</tr>
<tr>
<td>6. Dayton, OH</td>
<td>1.8</td>
<td>8.5</td>
<td>80</td>
</tr>
<tr>
<td>7. Ylivieska, Finland</td>
<td>Van der Mutter – Kind</td>
<td>6 – 7</td>
<td>70</td>
</tr>
</tbody>
</table>

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There is a reason that the health departments of Italy, Japan and Finland recommend the use of xylitol for active oral care. An increasing number of national dental associations in Europe have also begun to follow that recommendation.

What is so special about xylitol? Is there any evidence to support its claimed properties, such as being anti-cariogenic and able to advance the very extensive current debate among experts. It is fact that health claims that chewing gum only sweetened with xylitol is anti-cariogenic as well as highly effective against caries. As a rule, as many products containing xylitol as possible should be used in daily practice. In order to achieve extraordinary results in patients, the use of chewing gum sweetened only with xylitol is recommended. Studies evaluated by the EFSA confirm this.

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The health benefits of xylitol have been established for many years. It was originally harvested from birch bark.

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Fig. 1: Xylitol was originally harvested from birch bark.

Fig. 2: Xylitol blocks streptococcus mutans. © Mäkinen KK, et al. (1989) Caries Res 23, 261-267—Fig. 3: Xylitol is also favoured by diabetics. © D. Fritsche: "Diabetes: Der Ernährungskompass", Gräfe und Unzer Verlag, Germany (2008)

Fig. 4: Chewing Gum sweetened with 100% xylitol. © Hager & Werken—Fig. 5: Molecular structure of xylitol—© miradent Dental Care

Fig. 3: Figure showing the percentage of caries reduction in patients consuming xylitol compared with a control group.1

Table 1: Overview of relevant studies. (Note:芻A indicates that the study was conducted between 1970 and 1976 (Table I), while Table II asterisks indicate that the study was conducted in the year indicated.)

1. T urku, Finland 2 >85 >85
2. USSR 2 73 73
3. WHO – Thailand Polynesia Hungary 2.5 – 2.7 20 bis 20 58 -68 37 -45
4. Montreal, Canada 1 – 2 3 – 7 52
5. Ylivieska, Finland 3 7 – 10 50 – 84
6. Dayton, OH 1.8 8.5 80
7. Ylivieska, Finland Van der Mutter – Kind 21 months 6 – 7 70


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