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COMPETING RISKS SURVIVAL MODELLING OF CHILDHOOD CARIES

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RESULTS

Marginal survival models
Marginal survival of primary molar teeth and surfaces were derived with respect to caries and exfoliation, using frailty models with surface- and tooth-level observations nested within children. These may be interpreted as the survival experience that would be observed in the absence of other risks. Surface-level results are illustrated.

Calculation of likelihood ratio statistics show the log-logistic distribution to be the best fit to the data.

<table>
<thead>
<tr>
<th>Failure mode</th>
<th>Null model log likelihood from assumed distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caries</td>
<td>-53,802</td>
</tr>
<tr>
<td>Exfoliation</td>
<td>-76,153</td>
</tr>
</tbody>
</table>

Survival to caries is affected by surface type and fluoridation status. Non-occlusal surfaces of children from areas with fluoridated water show best survival rates.

SEC score also affects marginal survival to a lesser extent. Other covariates have little substantive effect.

Exfoliation rates are not affected by surface type or demographics.

CONCLUSIONS
Survival of primary tooth surfaces to caries is substantively associated with fluoridation status, SEC score and surface type. Exfoliation is a significant limiter on caries occurrence later in life.