

# What is the relationship between the intake of milk and milk products and type 2 diabetes?

## Conclusion

Moderate evidence shows that milk and milk products are associated with a lower incidence of type 2 diabetes in adults.

## Grade: Moderate

Overall strength of the available supporting evidence: Strong; Moderate; Limited; Expert Opinion Only; Grade not assignable For additional information regarding how to interpret grades, [click here](#).

## Evidence Summary Overview

In a recent systematic review with meta-analysis (Elwood, 2008) of four prospective studies on diabetes, relative risk for type 2 diabetes (T2D) was estimated to be 10% lower in people who had a high milk intake relative to those with low consumption.

## Evidence Summary Paragraph

### *Systematic Review / Meta-Analysis*

**Elwood et al, 2008** (positive quality) performed a systematic review and meta-analysis to investigate the literature on milk and dairy consumption and risk of vascular disease and diabetes, examine the evidence related to consumption of whole vs. reduced fat milk and disease risk and consider the likely effect of milk and dairy consumption on survival. The authors also reviewed a 2007 report by the World Cancer Research Fund to determine the impact of milk and dairy consumption on cancer risk. Using Cochrane systematic review methods, MEDLINE was searched up to June 2008 using key words milk/milk protein/dairy/dairy calcium and heart disease/ coronary artery disease/myocardial infarction/ischaemic heart disease, stroke and diabetes/metabolic syndrome. This search revealed 180 papers on milk and heart disease, 33 papers on milk and stroke and 111 papers on milk and diabetes. Only studies that were done in human adults using population-based and prospective designs and reported baseline data on milk or dairy consumption, vascular disease outcome or incident diabetes were included in the final review. The final sample included 15 prospective studies on ischaemic heart disease and stroke, four prospective studies on diabetes, four case-control studies on metabolic syndrome and four case-control studies on myocardial infarction. Relative risk for T2D was estimated to be 10% lower in people who had a high milk intake (RR=0.92; 95% CI: 0.86, 0.97).

[View table in new window](#)

Author, Year, Study Design, Class, Rating	Description of Study Sample	Methodology	Outcomes
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<p>Elwood PC, Givens DI et al, 2008</p> <p>Study Design: Systematic review and meta-analysis</p> <p>Class: M</p> <p>Rating: </p>	<p>Final N=15 prospective studies on IHD and stroke:</p> <ul style="list-style-type: none"> <li>• Four prospective studies on diabetes</li> <li>• Four case-control studies on metabolic syndrome</li> <li>• Four case-control studies on MI.</li> </ul>	<p>MEDLINE was searched up to June 2008 using key words: Milk/milk protein/dairy/dairy calcium and heart disease/coronary artery disease/myocardial infarction/ischaemic heart disease, stroke and diabetes/metabolic syndrome.</p>	<p>RR for T2D estimated to be 10% lower in people who had a ↑ milk intake (RR=0.92; 95% CI: 0.86, 0.97).</p>
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### Research Design and Implementation Rating Summary

For a summary of the Research Design and Implementation Rating results, [click here](#).

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### Worksheets

 [Elwood PC, Givens DI, Beswick AD, Fehily AM, Pickering JE, Gallacher J. The survival advantage of milk and dairy consumption: An overview of evidence from cohort studies of vascular diseases, diabetes and cancer. \*J Am Coll Nutr.\* 2008; 27 \(6\): 723S-734S](#)