Abstract

Title: The Effect on HbA1c of intake of *Lactobacillus acidophilus* & *Bifidobacterium lactis* in individuals with type 2 diabetes mellitus.

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**Background** Diabetes is a chronic disease spreading across the world, the prevalence in Sweden is 4-5%. The most common form is type 2 diabetes, which can have serious complications. HbA1c is a marker used to evaluate the long-term effect of diabetes treatment. According to WHO, probiotics are living organisms which, when consumed, can improve health. Prior research indicate that probiotics may have beneficial effects on controlling diabetes.

**Objective** The aim of this systematic review was to evaluate available scientific evidence of whether a combination of *Lactobacillus acidophilus* La-5 and *Bifidobacterium lactis* Bb-12 could improve glucose control in individuals with type 2 diabetes and thus be recommended.

**Search strategy** Literature searches were performed in PubMed, Scopus and Cochrane.

**Selection criteria** RCT, human studies, in Swedish and English, individuals with type 2 diabetes, adults between 18 and 70 y/o, probiotic supplementation of the combination *Lactobacillus acidophilus* La-5 and *Bifidobacterium lactis* Bb-12. Exclusion criteria were research performed on children, pregnant, individuals > 70 y/o, diabetes currently treated with insulin and additional diseases other than type 2 diabetes.

**Data collection and analysis** Three articles were examined using the template for quality assessment of randomized trials provided by SBU, which were deemed moderately high or high quality. Further, the GRADE template designed to estimate the collective study quality provided by Gothenburg university was used to evaluate the strength of evidence for the endpoint measurement, HbA1c.

**Main results** Evidence for lowering HbA1c was considered moderate (+++). An intake of *Lactobacillus acidophilus* La-5 and *Bifidobacterium lactis* Bb-12 resulted in a significant improvement of HbA1c between intervention groups and control groups after an intake for six to eight weeks.

**Conclusions** There is moderate evidence suggesting a reduction in HbA1c with intake of a combination of *Lactobacillus acidophilus* La-5 and *Bifidobacterium lactis* Bb-12.

**Keywords:** Probiotika, diabetes mellitus typ 2, HbA1c, *Lactobacillus acidophilus*, *Bifidobacterium lactis*