

# **Effects of probiotics on intermediate cardiovascular outcomes in patients with overweight or obesity: a systematic review and meta-analysis**

Frank Mayta-Tovalino,<sup>1</sup> Carlos Diaz-Arocutipa,<sup>1</sup> Alejandro Piscoya,<sup>1</sup> Adrian V. Hernandez<sup>1,4</sup>

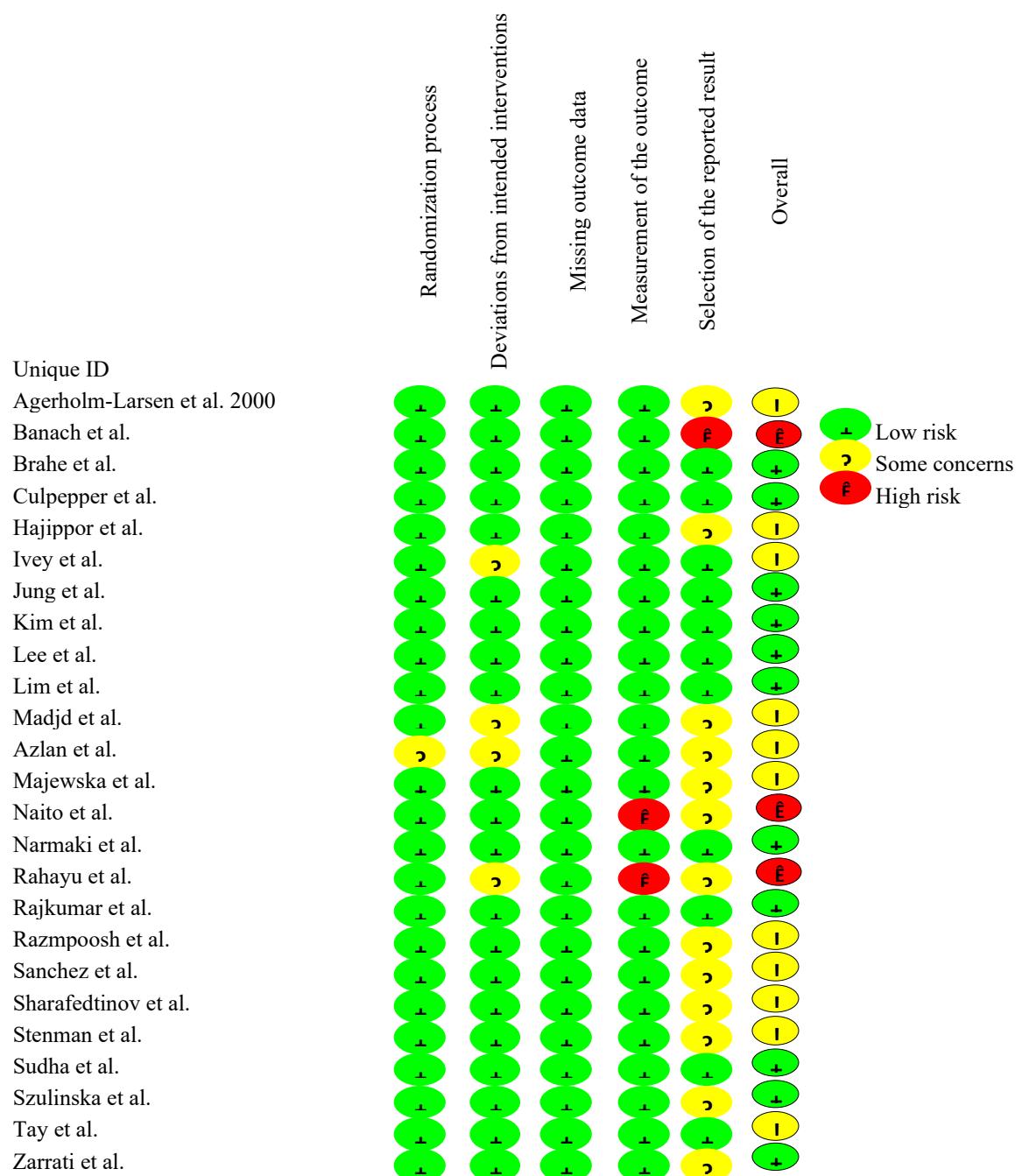
## **Supplementary contents**

- **Supplemental Table S1:** Search strategies for PubMed, Scopus and Web of Science
- **Supplemental Figure S1:** Risk of bias assessment of included trials
- **Supplemental Figure S2:** Subgroup analyses by type of control on BMI
- **Supplemental Figure S3:** Subgroup analyses by type of control on glucose
- **Supplemental Figure S4:** Subgroup analyses by type of control on SBP
- **Supplemental Figure S5:** Subgroup analyses by type of control on DBP
- **Supplemental Figure S6:** Subgroup analyses by type of control on cholesterol
- **Supplemental Figure S7:** Subgroup analyses by type of control on LDL
- **Supplemental Figure S8:** Subgroup analyses by type of control on HDL
- **Supplemental Figure S9:** Subgroup analyses by type of control on triglycerides
- **Supplemental Figure S10:** Subgroup analyses by Overweight vs obese on BMI
- **Supplemental Figure S11:** Subgroup analyses by overweight vs obese on weight
- **Supplemental Figure S12:** Subgroup analyses by overweight vs obese on glucose
- **Supplemental Figure S13:** Subgroup analyses by overweight vs obese on SBP
- **Supplemental Figure S14:** Subgroup analyses by overweight vs obese on DBP
- **Supplemental Figure S15:** Subgroup analyses by overweight vs obese on cholesterol
- **Supplemental Figure S16:** Subgroup analyses by overweight vs obese on LDL
- **Supplemental Figure S17:** Subgroup analyses by overweight vs obese on HDL
- **Supplemental Figure S18:** Subgroup analyses by overweight vs obese on triglycerides.

**Supplemental Table S1:** Search strategies for PubMed, Scopus, and Web of Science

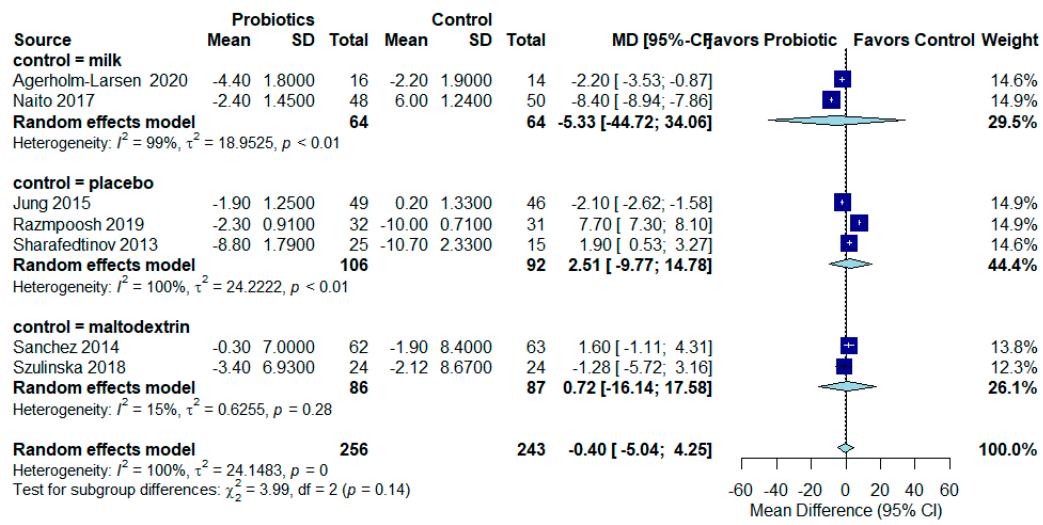
PUBMED
(prebiotics[mesh] OR probiotics[mesh] OR synbiotics[mesh] OR prebiotic*[tiab] OR probiotic*[tiab] OR synbiotic*[tiab] OR lactobacill*[tiab] OR lactococc*[tiab] OR lactobacillus[mesh] OR bifidobacter*[tiab] OR bifidobacterium[mesh] OR enterococc*[tiab] OR enterococcus[mesh] OR streptococc*[tiab] OR streptococcus[mesh] OR saccharomyces[tiab] OR saccharomyces[mesh] OR bacill*[tiab] OR bacillus[mesh] OR "escherichia coli"[tiab] OR "escherichia coli"[mesh]) AND (mortality[tiab] OR "myocardial infarction"[tiab] OR stroke[tiab] OR glucose[tiab] OR diabetes[tiab] OR weight[tiab] OR "body mass index"[tiab] OR BMI[tiab] OR hypertension[tiab] OR "blood pressure"[tiab] OR cholesterol[tiab] OR LDL[tiab] OR HDL[tiab] OR triglyceride*[tiab]) AND (overweight[mesh] OR overweight[tiab] OR obesity[mesh] OR obes*[tiab]) AND ("clinical trial"[tiab] OR random*[tiab] OR placebo[tiab]))
SCOPUS
TITLE-ABS-KEY ((prebiotic* OR probiotic* OR synbiotic* OR lactobacill* OR lactococc* OR bifidobacter* OR enterococc* OR streptococc* OR saccharomyces OR bacill* OR "escherichia coli") AND (mortality OR "myocardial infarction" OR stroke OR glucose OR diabetes OR weight OR "body mass index" OR BMI OR hypertension OR "blood pressure" OR cholesterol OR LDL OR HDL OR triglyceride*) AND (overweight OR obes*) AND ("clinical trial" OR random* OR placebo))
WOS
TS=((prebiotic* OR probiotic* OR synbiotic* OR lactobacill* OR lactococc* OR bifidobacter* OR enterococc* OR streptococc* OR saccharomyces OR bacill* OR "escherichia coli") AND (mortality OR "myocardial infarction" OR stroke OR glucose OR diabetes OR weight OR "body mass index" OR BMI OR hypertension OR "blood pressure" OR cholesterol OR LDL OR HDL OR triglyceride*) AND (overweight OR obes*) AND ("clinical trial" OR random* OR placebo))
EMBASE
(prebiotic* OR probiotic* OR synbiotic* OR lactobacill*:ti,ab OR lactococc*:ti,ab OR bifidobacter*:ti,ab OR enterococc*:ti,ab OR streptococc*:ti,ab OR saccharomyces:ti,ab OR bacill*:ti,ab OR 'escherichia coli':ti,ab) AND (mortality:ti,ab OR 'myocardial infarction':ti,ab OR stroke:ti,ab OR glucose:ti,ab OR diabetes:ti,ab OR weight:ti,ab OR 'body mass index':ti,ab OR bmi:ti,ab OR hypertension:ti,ab OR 'blood pressure':ti,ab OR cholesterol:ti,ab OR ldl:ti,ab OR hdl:ti,ab OR triglyceride*:ti,ab) AND (overweight OR obes*) AND ('clinical trial' OR random* OR placebo)

**Supplemental Figure S1:** Risk of bias assessment of included trials

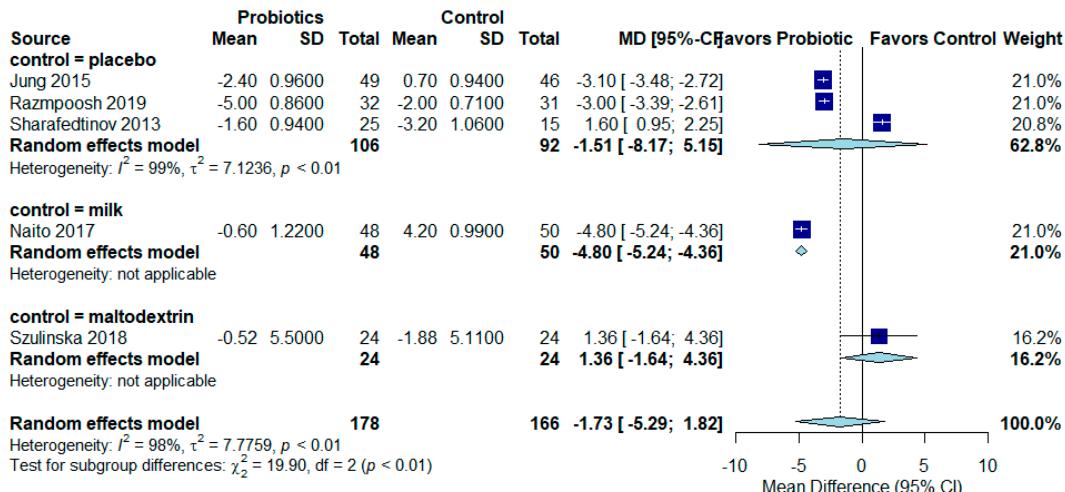




**Supplemental Figure S4:** Subgroup analyses by type of control on SBP



**Supplemental Figure S5:** Subgroup analyses by type of control on DBP















**Supplemental Figure S18:** Subgroup analyses by overweight vs obese on triglycerides

