

# Probiotics in oral health and disease: a systematic review

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**Table S8-** Characteristics of clinical trials of probiotics in orthodontics

Reference Oral condition	Parameters evaluated - Evaluation time	Study design - Groups of study	Sample size (at the end of the study)- Age or age group	Vehicle - Administration time	Probiotic strain(s) used (Dose)
<b>Alp &amp; Baka 2018</b> Orthodontics	Salivary flux, buffer capacity, SM and LB salivary counts - baseline, 3, 6 weeks	RCT, no-blind - Group 1: control /Group 2: systemic probiotic/Group 3: local probiotic	45 patients with orthodontic treatment at least 3 months - 12-17 years	Systemic probiotic: 100mL of kefir (twice a day) / Local probiotic: toothpaste (twice a day) - 6 weeks	Systemic probiotic: mix lactic acid bacteria ( <i>Lactococcus lactis subsp.</i> , <i>Leuconostoc spp.</i> , <i>Lactobacillus spp</i> and <i>S. thermophilus</i> ) and yeasts isolated from cereal grains) Local probiotic: bacteriocin extracted from lactic acid bacteria
<b>Gizani et al., 2016</b> Orthodontics and white spot	Clinical: WSL, PI / Microbiological: SM, LB (saliva samples) - baseline, after orthodontic appliance removal	RCT prospective, placebo-controlled, double-blind - Probiotic group and Placebo group	85 patients with maxillary at least 8 anterior teeth - mean age 15,9 years	Lozenges - 17 months (once a day)	<i>Lactobacillus reuteri</i> DSM 17938 and ATCC PTA 5289 (10 <sup>8</sup> CFU each)
<b>Kohar et al., 2015</b> Orthodontics and periodontal condition	Clinical: PI, GI, hygiene oral, papillary bleeding - baseline, 14 days	RCT: 1 <sup>st</sup> step periodontal treatment and 2 <sup>nd</sup> step probiotic intervention - Group 1: controlled group/Group 2: probiotic group (lozenges)/Group 3: probiotic group (milk)	30 patients with orthodontic treatment - 18-25 years	Lozenges ( <i>L.reuteri</i> ) or milk 65mL ( <i>L. casei</i> ) – 14 days (once a day)	<i>Lactobacillus reuteri</i> (200 x 10 <sup>6</sup> CFU) or <i>Lactobacillus casei</i> (6.5 x 10 <sup>6</sup> CFU)
<b>Pinto et al., 2014</b> Orthodontics	Microbiological (saliva and plaque samples) total SM, LB counts - baseline, 14 days	RCT cross-over, placebo-controlled, double-blind 4 periods: run-in (1week) / intervention (2weeks) / washout (4weeks) /intervention (2weeks) - Test group: probiotic yogurt / Control group: yogurt	26 patients with fixed bi- maxillary orthodontic treatment - 10-30 years	Yogurt 200g - 2 weeks (once a day)	<i>Bifidobacterium animalis subsp.lactis</i> DN-173010
<b>Ritthagol et al., 2014</b> Cleft lip and palate and orthodontics	Clinical: caries/Biochemical (salivary pH)/ Microbiological: SM, LB and probiotic colonization - baseline, 1, 2, 3, 4 weeks	RCT placebo-controlled, double-blind - Group A: probiotic 10g milk powder with probiotic in 50mL of water/Group B: control	30 patients with non-syndromic cleft lip and palate treated orthodontically - mean age 19 years	Milk - 4 weeks (once a day)	<i>Lactobacillus paracasei SD1</i>
<b>Jose et al., 2013</b> Orthodontics	Microbiological: (plaque samples on vestibular surfaces around brackets of upper lateral incisors) SM counts (PCR) - baseline, 30 days	RCT double-blind - Group 1: control/Group 2: systemic probiotic (200 mg active plus Nestle 1x / day) + toothpaste with fluoride/Group 3: probiotic toothpaste (2x / day)	60 patients with orthodontic straight-line appliance (MBT, slot 0.022) - 14-29 years	Toothpaste (2x/day) or curd 200mg (1x/day) for 30 days	N/A