Bijlage 3
Beschrijvende tabel en 'GRADE' tabellen 'preventieve behandeling'

Beschrijvende tabel studies 'preventie'						
Study reference	**Study characteristics**	**Patient characteristics**	**Intervention**	**Comparison/ Control**	**Follow up**	**Outcome measures and effect size**
Patient-administered preventive measures: Triclosan/copolymer dentifrice (I) versus fluoride dentifrice (C)						
Sreenivasan, 2011 [prev1]	Type of study: RCT, double-blind, parallel Setting: Community settlements throughout Israel Country: Israel Source of funding: Study was supported by a grant from Colgate Palmolive Company	Inclusion criteria: Presence of at least 20 teeth, at least one endosseous dental implant supporting a restoration and a contra-lateral natural tooth. Exclusion criteria: current smokers, systemic diseases requiring prescription medications, subjects exhibiting numerous or severe caries, generalized moderate to severe chronic periodontitis, or significant soft tissue pathology N total at baseline: N=120	Intervention: 0.3% triclosan/2% copolymer dentifrice Procedure: Subjects were provided a soft-bristled toothbrush and instructed to brush twice daily with their assigned toothpaste for the next 6 months. Subject compliance and test product resupply were monitored by periodic visits and telephone calls. Subjects refrained from oral hygiene for at least 12 hours before baseline, 3-, and 6-month examinations. At each appointment, subjects were examined for dental plaque, GI, and BOP and supragingival plaque was collected from both the implant and contra-lateral control tooth for laboratory testing.	Control intervention: Fluoride dentifrice	Length of follow up: 6 months Loss to follow up: N=15	Outcome measures: Modified plaque index (mPI) Modified bleeding index (mBI) Effect: *mPI (frequency distribution at 6 months; 0,1,2,3 resp.)* I: 2%, 50.5%, 47.5%, 0% C:0%, 34.1%, 60.5%, 5.5% *mBI (frequency distribution at 6 months; 0,1,2,3 resp.)* I:70%, 15%, 15%, 0% C: 51.4%, 15.9%, 32.7%, 0% Subjects in the intervention group demonstrated significantly ($p<0.05$) lower levels of plaque and bleeding at the implants at 3 and 6 months than the control group. Other measures in study: Gingival index (GI) Microbiological parameters
Patient-administered preventive measures: Powered toothbrushing (I) versus manual toothbrushing (C)						
Tawse-Smith, 2002 [prev2]	Type of study: RCT, Single-blind, cross-over Setting: University	Inclusion criteria: Fully edentulous non-smokers who had been successfully treated during the preceding 6–12 months with 2 unsplinted dental implants in the anterior mandible. All	Intervention: Patients received instruction to brush 2 implants 2x/day for 30 s with a powered brush. Procedure:	Control intervention: Patients received instruction to brush 2 implants 2x/day for 30 s with a manual brush.	Length of follow up: 2 x 6 weeks Loss to follow up: N=0	Outcome measures: Modified plaque index (mPI) Modified bleeding index (mBI) Effect: *mean mPI:* I: 0.9 (0.67) to 0.9 (0.73)

	Country: New Zealand Source of funding: Industry	patients had a removable complete denture in the maxillary jaw. Exclusion criteria: Use of antibiotics or antimicrobial mouthrinses 3 months prior to the study, a medical condition precluding soft tissue probing, smokers N total at baseline: N=40	The two 6-week experimental phases were separated by a 2-week wash-out period. 2 weeks prior to each experimental phase (pre-entry visits), implant abutments were polished to remove all plaque and a standardised instruction in the use of the toothbrush was given. Modified plaque and bleeding indices were recorded at the start and end of each experimental period. Participants were instructed not to use any oral care products other than those supplied during the study period.			C: 0.8 (0.64) to 0.8 (0.67) *n.s.* *mean mBI:* I: 0.4 (0.38) to 0.5 (0.52) C: 0.4 (0.49) to 0.5 (0.51) *n.s.*
Truhlar, 2000 [prev3]	Type of study: RCT, multicenter, parallel Setting: Department of veteran affairs Industry Country: USA Source of funding: industry	Inclusion criteria: Patients participating in a six-year longitudinal study on the influence of dental implant design, application and site of placement on long-term clinical performance and crestal bone. 30 out of the 55 original research centers were selected for participation in the present study. Patients with implant type Spectra System. No professional therapy before start intervention. Exclusion criteria: Not reported. N total at baseline: N=2966 implants	Intervention: I1: Patients used a counter-rotational powered toothbrush (CRPB) I2: Patients used a counter-rotational powered toothbrush plus twice daily chlorhexidine rinses Procedure: patients were asked to start using their hygiene regimen immediately after the uncovering procedure, continuing through the restorative phase and beyond. Patients were recalled at three, six, nine, 12, 18 and 24 months after the implants were uncovered, and yearly thereafter for a total of six years.	Control intervention: CI1: Patients used only conventional manual methods for plaque removal (soft manual toothbrush and interproximal cleansing with regular dental floss or specialized implant dental floss and end- tufted brush or interproximal brush without specific regimen). CI2: Patients used conventional manual methods for plaque removal (soft manual toothbrush and interproximal cleansing with regular dental floss or specialized implant dental floss and end- tufted brush or interproximal brush without specific regimen) + twice daily 0.12 percent chlorhexidine rinses.	Length of follow up: 24 months Loss to follow up: N=0	Outcome measures: Plaque index (PI)) Effect: *PI at 24 months:* I: mean of all sites pooled=4.5 C: mean of all sites pooled=7.1 Regardless of whether chlorhexidine rinse was used, in each group, the CRPB was more effective than a manual brush plus interproximal aids, both in terms of clinical indexes and implant survival. Other measures in study: Gingival index (GI) Calculus index Clinical attachment levels Implant survival
Wolff, 1998 [prev4]	Type of study: RCT, single-blind, parallel Setting:	Inclusion criteria: Patients with one or more restored dental implants, who had no antibiotics and/or professional tooth cleaning	Intervention: Patients received instruction to brush 2min 2x/day with sonic toothbrush.	Control intervention: Patients received instruction to brush 2min 2x/day with manual toothbrush.	Length of follow up: 6 months Loss to follow up: N=0	Outcome measures: Bleeding index (BI) Effect: *BI:*

	University Country: USA Source of funding: industry	during the three months prior to entering the study. Exclusion criteria: Pregnancy; bleeding disorders; haemophilia; diabetes; immunocompromised; epilepsy; rheumatic heart disease; joint replacement prosthesis; using cyclosporin, dilantin or calcium channel blockers; chronic use of non-steroidal, anti-inflammatory drugs; using other oral care products than the ones supplied; undergoing extensive restorative treatment. N total at baseline: N=31	Procedure Patients received oral and written instructions for manual or sonic toothbrush, with timer for manual and built-in for sonic brush. All subjects received a supra- and subgingival prophylaxis at baseline, but did not receive prophylaxis during the course of the study. OHI was reviewed and reinforced at each visit (4, 8, 12 and 24 weeks).			I: 1.47 (0.31) to 0.66 (0.64) C: 1.46 (0.72) to 0.67 (0.56) *p=0.911* Other measures in study: Plaque index (PI) Gingival index (GI) Pocket depth (PD)
Professional-administered preventive measures: Antiseptic therapy (phosphoric acid) (I) versus supra-/subgingival scaling + polishing (C)						
Strooker, 1998 [prev5]	Type of study: RCT, split-mouth Setting: Private practice Country: The Netherlands Source of funding: Partly by the International Team for Oral Implantology (ITI)	Inclusion criteria: Patients who had received an 4-implant-supported mandibular denture that had been functioning satisfactorily for more than 1 year. All patients attended a regular maintenance program. Exclusion criteria: Patients with antibiotic therapy during the 3 months prior to the study or used drugs or mouthrinses with anti-inflammatory properties. N total at baseline: N=16	Intervention: Patients received phosphoric acid gel (35 %) in sulcus for 1 min + thoroughly rinsing of the sulcus with water spray for 15 seconds. Any calculus deposits still present on the bar splint after this procedure were removed using acid gel on a cotton swab. Procedure: Every month each patient visited the dental hygienist for both tests and maintenance treatment. Outcome measures were scored at 1 and at 5 months.	Control intervention: Patients received supra-/subgingival scaling (carbon curettes) + polishing (rubber cup + prophylactic paste)	Length of follow up: 5 months Loss to follow up: N=0	Outcome measures: Plaque Index (PI) Bleeding on probing (BOP) Effect: *PI:* I: 0.29 (0.26) to 0.21 (0.21) C: 0.34 (0.23) to 0.21 (0.21) *n.s.* *BOP (% of sites):* I: 30,5 % (27.5) to 9.7% (10.97) C: 29.2 % (29.4) to 14.3 (22.47) *n.s.* Other measures in study: Calculus Index (CI) Gingival Index GI Pocket Depth (PD) Microbiological parameters
Professional-administered preventive measures: Internal decontamination of dental implants with (I) or without chlorhexidine gel (C)						

Paolantonio, 2008 [prev6] / D'Ercole, 2009 [prev7]	Type of study: RCT, parallel Setting: University Country: Italy Source of funding: Not mentioned	Inclusion criteria: Patients undergoing single-tooth implant restoration in the incisor-canine-bicuspid area. Exclusion criteria: systemic diseases that could affect the immune response or that could condition the bacterial colonization; use of antibiotics during the 3 months prior to the beginning of the study; smoking; fullmouth plaque score (FMPS) and full-mouth bleeding score (FMBS) >20%; probing depth (PD) >4 mm or radiographic evidence of periodontal bone loss in the whole dentition; and subjects needing more than one implant. N total at baseline: N=30	Intervention: The implant was completely filled with a 1% CHX-gel before recementation of the crowns. Procedure: All patients received a single 10 to 15mm implant and surgical and prosthetic treatment according to routine procedures. Restorative procedures started after 3 months. Before abutment tightening, the inner part of each fixture was washed with 10% volume weight H_2O_2 and gently dried with air and patients underwent a session of professional oral hygiene. After 3 months the crowns were removed, the peri-implant mucosa was dried, abutment fixation screws were loosened and all abutments were removed. MBI and MPI scores were taken at four sites and microbiological sampling was performed at each implant. After these procedures subjects were randomly divided into the test and control group. Clinical and microbiological measurements were repeated after 6 months.	Control intervention: The crowns were recemented without any further intervention.	Length of follow up: 6 months Loss to follow up: N=0	Outcome measures: Modified plaque index (mPI) Modified bleeding index (mBI) Effect: mPI and mBI were similar between both groups at baseline and did not change significantly over time. Other measures in study: Microbiological parameters

Overzicht 'Risk of bias' studies 'preventie'							
		random sequence generation (selection bias)	**allocation concealment (selection bias)**	**blinding (performance bias and detection bias)**	**incomplete outcome data (attrition bias)**	**selective reporting (reporting bias)**	**other bias**
prev1	Sreenivasan, 2011	Not reported	Not reported	Low risk	Low risk	Unclear risk	Unclear risk
prev2	Tawse-Smith, 2002	Low risk	Unclear risk	Low risk	Unclear risk	Unclear risk	Unclear risk
prev3	Truhlar, 2000	Not reported	Not reported	Not reported	Not reported	Unclear risk	Unclear risk
prev4	Wolff, 1998	Unclear risk	Unclear risk	Low risk	Unclear risk	Unclear risk	Unclear risk
prev5	Strooker, 1998	Not reported	Not reported	High risk	Low risk	Low risk	Unclear risk
prev6/ prev7	Paolantonio, 2008 / D'Ercole, 2009	Low risk	Low risk	Not reported	High risk	High risk	Unclear risk

Dit overzicht is gebaseerd op de analyse van 'risk of bias' in:

- Graziani F, Figuero E, Herrera D. (2012) Systematic review of quality of reporting, outcome measurements and methods to study efficacy of preventive and therapeutic approaches to per-implant diseases. J Clin Periodontol: 39, Suppl 12: 224-244.
- Salvi GE, Ramseier CA. (2015) Efficacy of patient-administered mechanical and/or chemical plaque control protocols in the management of peri-implant mucositis. A systematic review. J Clin Periodontol: 42, Suppl 16: S187-201.

Samenvattende tabel van kwaliteitstoetsing studies 'preventie'							
Aantal studies	**Design**	**Beperkingen[1]**	**Inconsistentie[2]**	**Indirect bewijs[3]**	**Imprecisie[4]**	**Andere overwegingen**	**Kwaliteit[5]**
(m)PI in preventie van peri-implantitis/mucositis							
5	RCT	Serieus[b,e]	Niet serieus	Niet serieus	Zeer serieus	Nee	Zeer laag
(m)BI in preventie van peri-implantitis/mucositis							
4	RCT	Serieus[b,e]	Niet serieus	Niet serieus	Zeer serieus	Nee	Zeer laag
BOP in preventie van peri-implantitis/mucositis							
1	RCT	Serieus[b,e]	Niet serieus	Niet serieus	Zeer serieus	Nee	Zeer laag

1 Beperkingen: meer of minder beperkingen in opzet en uitvoering van onderzoek. Mogelijke bronnen van vertekening zijn:
- a selectieve toewijzing van de onderzoekdeelnemers (selectiebias)
- b vertekening door het ontbreken van blindering (performance bias)
- c vertekening van uitkomstmetingen door gebrek aan blindering van de effectbeoordelaar (informatiebias)
- d selectieve uitval van onderzoekdeelnemers (attrition bias)
- e selectieve publicatie van uitkomsten binnen hetzelfde onderzoek (reporting bias)
- f andere mogelijke bronnen van vertekening

2 Inconsistentie: grote verschillen in behandeleffecten tussen studies die niet verklaard kunnen worden door bijvoorbeeld verschillen in populatie, interventies, uitkomsten en studiekwaliteit

3 Indirect bewijs: afwijking van de vraag van het onderzoek ten opzichte van de uitgangsvraag

4 Imprecisie: Onzekerheid over de grootte van het effect door bijvoorbeeld een kleine steekproef of weinig voorkomende events

5 Op basis van de beoordeling van genoemde criteria wordt de volgende gradering van kwaliteit gebruikt:
- Hoog: Het werkelijke effect ligt dicht in de buurt van de schatting van het effect
- Matig: Het werkelijke effect ligt waarschijnlijk dicht bij de schatting van het effect maar er is een mogelijkheid dat het hier substantieel afwijkt
- Laag: Het werkelijke effect kan substantieel verschillend zijn van de schatting van het effect
- Zeer laag: Het werkelijke effect wijkt waarschijnlijk substantieel af van de schatting van het effect

Bron: Everdingen, JJE van et al. Evidence-based richtlijnontwikkeling. Een leidraad voor de praktijk. Houten, 2014.

GRADE tabel: kwaliteitstoetsing studies 'preventie'										
Aantal studies	**Design**	**Beperkingen**	**Inconsistentie**	**Indirect bewijs**	**Imprecisie**	**Andere overwegingen**	**Aantal patiënten**	**Effect**	**Kwaliteit**	**Belang**
Patient-administered preventive measures: mPI in triclosan/copolymer dentifrice (I) versus fluoride dentifrice (C)										
1 [prev1]	RCT	Serieus	Niet serieus	Niet Serieus	Zeer serieus	Nee	120	(frequentie verdeling na 6 mnd; 0,1,2,3 resp.) I: 2%, 51%, 48%, 0% C: 0%, 34%, 61%, 6% p<0.05	Zeer laag	Cruciaal
Patient-administered preventive measures: mBI in triclosan/copolymer dentifrice (I) versus fluoride dentifrice (C)										
1 [prev1]	RCT	Serieus	Niet serieus	Niet Serieus	Zeer serieus	Nee	120	(frequentie verdeling na 6 mnd; 0,1,2,3 resp.) I: 70%, 15%, 15%, 0% C: 51%, 16%, 33%, 0% p<0.05	Zeer laag	Cruciaal
Patient-administered preventive measures: (m)PI in powered toothbrushing (I) versus manual toothbrushing (C)										
2 [prev2, prev3]	RCT	Serieus	Serieus	Niet Serieus	Zeer serieus	Nee	40 / 2.966 implants	mPI [prev2] I: van 0.9 tot 0.9 C: van 0.8 tot 0.8 NS PI [prev3] I: 4.5 C: 7.1 p<0.05	Zeer laag	Cruciaal
Patient-administered preventive measures: (m)BI in powered toothbrushing (I) versus manual toothbrushing (C)										
2 [prev2, prev4]	RCT	Serieus	Niet serieus	Niet Serieus	Zeer serieus	Nee	71	mBI [prev2] I: van 0.4 tot 0.5 C: van 0.4 tot 0.5 NS BI [prev4] I: van 1.47 tot 0.66 C: van 1.46 tot 0.67	Zeer laag	Cruciaal

								NS		
Professional-administered preventive measures: PI in antiseptic therapy (phosphoric acid) (I) versus supra-/subgingival scaling + polishing (C)										
1 [prev5]	RCT	Serieus	Niet serieus	Niet Serieus	Zeer serieus	Nee	16	I: van 0.29 tot 0.21 C: van 0.34 tot 0.21 NS	Zeer laag	Cruciaal
Professional-administered preventive measures: BOP in adjunctive antiseptic therapy (phosphoric acid) (I) versus supra-/subgingival scaling + polishing (C)										
1 [prev5]	RCT	Serieus	Niet serieus	Niet Serieus	Zeer serieus	Nee	16	I: van 30.5 % tot 9.7% C: van 29.2 % tot 14.3% NS	Zeer laag	Cruciaal
Professional-administered preventive measures: mPI in internal decontamination of dental implants with (I) or without chlorhexidine gel (C)										
2 [prev6, prev7]	RCT	Serieus	Niet serieus	Niet Serieus	Zeer serieus	Nee	30	Geen verschil	Zeer laag	Cruciaal
Professional-administered preventive measures: mBI in internal decontamination of dental implants with (I) or without chlorhexidine gel (C)										
2 [prev6, prev7]	RCT	Serieus	Niet serieus	Niet Serieus	Zeer serieus	Nee	30	Geen verschil	Zeer laag	Cruciaal

I interventiegroep
C controlegroep
mPI modified plaque index
mBI modified bleeding index
BOP bleeding on probing

Beschrijvende tabel SRs 'Peri-implant maintenance therapy' (PIMT)						
Study reference	**Study characteristics**	**Patient characteristics**	**Intervention (PICO)**	**Outcome measures**	**Results**	**Authors conclusions**
Effects of anti-infective preventive measures on the occurrence of biologic implant complications and implant loss						
Salvi, 2014[prev8]	Type of study: Systematic review Setting: University Country: Switzerland Source of funding: University	Inclusion criteria: Studies published in English, German, French, or Italian and conducted in partially and/or fully edentulous patients with the intervention being the enrollment of ≥ 20 patients with dental implants adhering to a regular SPT program (≥ 1 /year) over a mean follow-up of ≥ 10 years. Publications reporting on fixed and/or removable implant-supported dental prostheses were considered. Exclusion criteria: Studies not reporting on the content and frequency of anti-infective preventive measures during SPT were excluded unless personal communications were available; publications not reporting on the number of patients/implants assessed at the 10-year follow-up; animal studies, abstracts, letters to editors, narrative reviews, case reports; studies with < 20 patients. N total: N=15 studies of which 12 cohort studies and 3 case-control studies	Focus question: "In patients with osseointegrated dental implants, what are the effects of adherence to a regular SPT program on the occurrence of biological implant complications and implant loss?" PICO criteria: Population: Patients with osseointegrated dental implants Intervention: Adherence to a regular SPT (supportive periodontal therapy) program Comparison: Lack of adherence to a regular SPT program Outcomes: Occurrence of biological implant complications and implant loss	Primary: Implant loss Secondary: Marginal bone loss Bleeding on probing (BOP) Gingiva index (GI) Modified bleeding index (mBI) Plaque index (PI) Suppuration Pocket depth (PD) Mucosal recession (REC) Probing attachment level (PAL)	Adherence to recommended SPT of fully and partially edentulous patients yielded beneficial effects with respect to the occurrence of biologic complications and implant loss.	In order to achieve high long-term survival and success rates of dental implants and their restorations, enrolment in regular SPT including anti-infective preventive measures should be implemented. Therapy of peri-implant mucositis should be considered as a preventive measure for the onset of peri-implantitis. Completion of active periodontal therapy should precede implant placement in periodontally compromised patients.
Impact of maintenance therapy for the prevention of peri-implant disease						
Monje, 2016[prev9]	Type of study:	Inclusion criteria:	Focus question:	Outcome measures: Primary:	Results *Mucositis:*	Authors conclusions:

	Systematic review and meta-analysis Setting: University Country: MI, USA Source of funding: Research Fund of the Department of Periodontics and Oral Medicine of the University of Michigan	Prospective or retrospective, randomized or not, cohort or case series trials involving human subjects aimed at showing the incidence or recurrence of peri-implant diseases under a strict regime of PIMT or not; Rough surface implant, with or without smooth surface collar; Subjects, N ≥ 10; Clinical trials with >6-mo follow-up; Articles where the frequency of PIMT could not be clearly extracted were included in the qualitative but not the quantitative analysis (meta-analysis) Exclusion criteria: Systematic reviews; animal trials; case reports; in vitro studies. N total: N=13 studies	"What is the impact of PIMT (peri-implant maintenance therapy) upon the incidence of biologic complications (i.e., mucositis and peri-implantitis)?" PICO criteria: Population: Mandibular and/or maxillary complete or partial edentulous healthy subjects in need of dental implants to restore oral function Intervention: Enrollment in regular recall interval for PIMT after implant placement / intervention for treatment of peri-implant disease Comparison: 1) No regular interval for PIMT 2) Longer interval for PIMT compared with the test group Outcomes: Incidence of biologic complications	Incidence of biologic complications (i.e., peri-implant mucositis and peri-implantitis at implant and patient levels) Secondary: Implant survival Implant failure rate	Significant effect of PIMT on mucositis (on patient level, not on implant level, p<0.001) *Peri-implantitis* Significant effect of PIMT on peri-implantitis (on implant and patient level, p<0.001) *Implant survival* Implants under PIMT have 0.958 the incident event than those with no PIMT.	Implant therapy must not be limited to the placement and restoration of dental implants but to the implementation of PIMT to potentially prevent biologic complications and hence to heighten the long-term success rate. Although it must be tailored to a patient's risk profiling, the findings suggest reason to claim a minimum recall PIMT interval of 5 to 6 mo. Additionally, it must be stressed that even in the establishment of PIMT, biologic complications might occur. Thus, patient-, clinical-, and implant-related factors must be thoroughly explored.

AMSTAR 2 tabel: kwaliteitstoetsing SRs 'Peri-implant maintenance therapy' (PIMT)			
		prev8	prev9
1	Did the research questions and inclusion criteria for the review include the components of PICO?	+	+
2	Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?	+	+
3	Did the review authors explain their selection of the study designs for inclusion in the review?	+	+
4	Did the review authors use a comprehensive literature search strategy?	+	+
5	Did the review authors perform study selection in duplicate?	+	+
6	Did the review authors perform data extraction in duplicate?	N.A. (no meta-analysis)	-
7	Did the review authors provide a list of excluded studies and justify the exclusions?	-	-
8	Did the review authors describe the included studies in adequate detail?	+	+
9	Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review?	+	+
10	Did the review authors report on the sources of funding for the studies included in the review?	-	-
11	If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results?	N.A. (no meta-analysis)	+
12	If meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?	N.A. (no meta-analysis)	+
13	Did the review authors account for RoB in individual studies when interpreting/ discussing the results of the review?	+ (for NRSI)	+ (for NRSI)
14	Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?	+	+
15	If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?	N.A. (no meta-analysis)	+
16	Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?	+	+
NRSI	non-randomized studies of interventions		