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Chemical agents used after brushing

What investigators applied to the implant surface once mechanical debridement was done

A summary of the chemical agents reported alongside NiTi Brush debridement in the published peri-implantitis literature, grouped by agent. It records what was done in each study and what the authors reported, so that a clinician can find the original paper quickly.

This is a literature summary, not a treatment recommendation and not a protocol endorsed by HANS Korea. Verify every figure against the original publication.

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Rev. 1 · 29 September 2026

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What the investigators applied after the NiTi Brush

Clinicians often ask what should follow mechanical decontamination with the NiTi Brush. This page does not answer with a recommendation. It lists, study by study, what the authors of published clinical reports did after brushing — the agent, its concentration, how long it was applied and what they reported afterwards — so that you can weigh the evidence and read the original papers.

A literature summary, not a treatment recommendation

This page is prepared by HANS Korea from the Methods and Results of the papers cited. It is not part of the Instructions for Use. The choice of any chemical or pharmacological adjunct, its concentration and its duration is a clinical decision for the treating dentist, made in accordance with local regulations and the product information of the agent concerned. Where this page and the Instructions for Use differ, the Instructions for Use prevail.

Concentrations, application times and outcome figures are transcribed from the papers — verify them against the original publication, linked with each entry, before clinical use. HANS Korea holds no copyright in the papers, has no relationship with their authors or journals, and has paraphrased them in its own words.

Revision 1 · 29 September 2026. Fifteen clinical reports; the list is a floor, not a census, and is revised when a further paper naming the instrument is verified.

At a glance

Common to every report: a full-thickness access flap, complete removal of granulation tissue, mechanical decontamination with the NiTi Brush (600 rpm for 2–3 minutes in the Barcelona studies; up to 1,200 rpm under continuous saline in the Gothenburg/Bilbao and Frankfurt studies) and saline irrigation before grafting or closure. Where reported, the model was NANO (Gothenburg/Bilbao), ICT Micro and ICT Nano (Marseille) or OMEGA (Makkah).

Approach	After brushing	Reports	Note
A	Saline irrigation only — no chemical agent on the surface	6 · three RCT-based (Gothenburg / Bilbao), two cohorts (Frankfurt), one case report	All combined with a systemic antibiotic and/or a post-operative chlorhexidine mouthwash. Also the control arm of the Bilbao electrolytic RCT in D
B	Hydrogen peroxide 3 % for 2 min, then saline	4 · Monje et al. (Barcelona)	Once followed by tetracycline hydrochloride for 2 min; also the control arm of the two Barcelona electrolytic trials in D
C	Chlorhexidine as the adjunct (0.12 % irrigation or 2-min rinse)	2	Once after H2O2, once after glycine air-polishing
D	Electrolytic decontamination for 2 min, then saline	3 · multicentre RCT vs H2O2; single-centre RCT vs brushing alone; case series adding rhPDGF-BB	Disease resolution 87.5 % vs 64.5 % with H2O2 ($p = 0.08$); vs brushing alone, favourable outcomes in both arms with no significant difference

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A · Saline only

Study	Design	After brushing	Systemic / post-operative	Reported outcome
Derks J, Ortiz-Vigón A, Guerrero A, et al. Clin Oral Implants Res 2022. 10.1111/clr.13972	Multicentre RCT · 138 patients / 147 implants · 12 months	None. NANO NiTi Brush at up to 1,200 rpm under continuous saline.	Amoxicillin 750 mg twice daily for 10 days from 3 days pre-op	PPD -3.7 mm and bone gain about 1.0 mm in both arms; BOP -45–50 %; buccal recession less pronounced in the bone-substitute arm
Alibegovic L, Trullenque-Eriksson A, et al., Derks J. Clin Oral Implants Res 2025. 10.1111/clr.14393	Same trial, 3-year follow-up · 120 patients / 127 implants	None.	As above	PPD -3.2–3.5 mm, bone gain 1.1–1.3 mm; disease resolution 39 %; 11 % of implants lost
Regidor E, Ortiz-Vigón A, Romandini M, Dionigi C, Derks J, Sanz M. J Clin Periodontol 2023. 10.1111/jcpe.13796	RCT · 43 patients · 12 months	None on the surface. NANO NiTi Brush up to 1,200 rpm under saline. (Pre-surgical air-polishing with erythritol + 0.3 % chlorhexidine.)	Amoxicillin 750 mg × 2/day, 10 days; post-op 0.12 % CHX + 0.05 % CPC rinse	No implant lost; success 36.8 % (with membrane) vs 45.0 % (without), difference not significant
Galarraga-Vinueza ME, Obreja K, Magini R, Sculean A, Sader R, Schwarz F. J Clin Periodontol 2020. 10.1111/jcpe.13335	Prospective pilot · 20 patients / 28 implants · 6 months	None on the surface. Titanium brush{{FN-TIBRUSH}} (HANS Korea); implantoplasty under sterile saline.	Single pre-op amoxicillin 2 g; 0.12 % CHX mouthwash 5 days	Soft-tissue contraction 7.9 % (1 month) and 18.5 % (6 months), linked to narrow keratinised mucosa
Schwarz F, et al. Clin Oral Implants Res 2023. 10.1111/clr.14057	Retrospective · 36 patients / 40 implants · 12 months	None on the surface. Titanium brush (HANS Korea); implantoplasty under sterile saline.	0.12 % CHX mouthwash 5 days	Median BOP -58–67 %, PD -0.8–2.0 mm; 100 % survival
Babgi W, Felemban B. J Umm Al-Qura Univ Med Sci 2024. 10.54940/ms75920247	Case report · 2 patients	None on the surface. NiTi Brush OMEGA; saline irrigation.	Amoxicillin 500 mg for 1 week; CHX mouthrinse 1 week	Peri-implant health re-established in both early-complication cases

B · Hydrogen peroxide 3 %

Study	Design	After brushing	Systemic / post-operative	Reported outcome
Monje A, Pons R, Vilarrasa J, Nart J, Wang H-L. J Periodontol 2023. 10.1002/JPER.22-0511	RCT · 33 patients / 48 implants · 12 months	Hydrogen peroxide 3 % for 2 min, then saline. NiTi brushes 2–3 min at 600 rpm beforehand.	Not the subject of the report	Disease resolution 77.1 % with and without the membrane; baseline plaque index and keratinised mucosa width were associated with resolution
Monje A, Pons R, Sculean A, Nart J, Wang H-L. Clin Implant Dent Relat Res 2023. 10.1111/cid.13244	Secondary analysis of the RCT above	Hydrogen peroxide 3 % for 2 min, then saline.	As above	Mean bone gain 1.85 mm; defect angle < 57° predicted at least 1 mm gain, < 30° predicted at least 2 mm

Study	Design	After brushing	Systemic / post-operative	Reported outcome
Monje A, Pons R, Peña P. Int J Periodontics Restorative Dent 2024. 10.11607/prd.7151	Single-centre arm of a multicentre RCT · 19 patients / 23 implants · 12 months	Control: hydrogen peroxide 3 %. Test: electrolytic method (D). Both then saline.	Not the subject of the report	No significant difference between adjuncts; resolution about 16 % higher with the electrolytic method (about 91 %), not significant
Monje A, Pons R, Aparicio C, Tarnow D, Rosen PS, Nart J. Clin Implant Dent Relat Res 2026. 10.1111/cid.70144	Quasi-randomised controlled trial · 33 patients / 40 implants · 12 months · full-length vs partial-length implantoplasty	Hydrogen peroxide 3 % for 2 min, then tetracycline hydrochloride for 2 min, then saline irrigation. NiTi brushes 2–3 min at 600 rpm beforehand, in both groups.	Amoxicillin 750 mg × 2/day, 7 days; chlorhexidine 0.5 % applied to the area 3 ×/day for 2 weeks; supportive care every 4 months	Disease resolution 77.5 % overall; all clinical parameters improved in both groups; greater bone gain but more mucosal recession with full-length implantoplasty

C · Chlorhexidine as the adjunct

Study	Design	After brushing	Systemic / post-operative	Reported outcome
Monje A, Pons R, Amerio E, Wang H-L, Nart J. J Periodontol 2022. 10.1002/JPER.21-0103	Retrospective · 43 patients / 135 implants · about 24 months	Hydrogen peroxide 3 % for 2 min, then irrigation with chlorhexidine 0.12 %. (Non-surgical phase: sub-mucosal 0.12 % CHX irrigation.)	Not the subject of the report	Survival 97.8 %; success 66 % (strict) / 79.5 % (flexible); apically positioned flap groups resolved disease most efficiently
Brincat A, Antezack A, Sadowski C, Faure-Brac M, Ohanessian R, Monnet-Corti V. Applied Sciences 2023 (open access). 10.3390/app13127224	Case series · 57 patients / 91 implants · 12–42 months	Chlorhexidine 0.12 % rinses for 2 min, then profuse sterile saline (after NiTi ICT Micro/Nano brushes and glycine air-polishing).	Amoxicillin 2 g/day 7 days; prednisolone 3 days; CHX 0.2 % 7 days then 0.12 % 7 days, 0.2 % gel 10 days	Absence of progressive bone loss at 96.7 % of implants; 3 implants removed

D · Electrolytic decontamination

Study	Design	After brushing	Systemic / post-operative	Reported outcome
Regidor E, Ortiz-Vigón A, Berglundh-Gottlieb J, Bougas K, Derks J. Clin Oral Implants Res 2026. 10.1111/clr.70152	Single-centre RCT · 40 patients / 44 implants · 12 months	Test: electrolytic cleaning after brushing, then saline. Control: brushing alone, then saline — no chemical agent. NANO NiTi Brush at up to 1,200 rpm under continuous saline in both arms; xenogeneic bone substitute and collagen membrane in both arms.	Amoxicillin 500 mg × 3/day, 7 days; post-op 0.12 % CHX + 0.05 % CPC rinse	No implant lost; composite success 40.0 % (test) vs 27.3 % (control), p = 0.41; PPD -3.8 vs -4.5 mm, bone gain 2.1 vs 1.9 mm; no significant difference in any outcome

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Study	Design	After brushing	Systemic / post-operative	Reported outcome
Monje A, Navarro-Mesa S, Soldini C, Zappalá G, Peña P, Navarro JM, Pons R. Clin Implant Dent Relat Res 2025 (open access). 10.1111/cid.70075	Multicentre RCT · 58 patients · 12 months	Test: electrolytic method for 2 min, then saline. Control: hydrogen peroxide 3 % for 2 min, then saline. NiTi brushes 600 rpm, 2–3 min in both arms.	Not the subject of the report	All indices and bone level improved in both arms; disease resolution 87.5 % (electrolytic) vs 64.5 % (H_2O_2), p = 0.08; no major complications
Monje A, Pons R, Barootchi S, Saleh MHA, Rosen PS, Sculean A. Int J Oral Implantol 2025;18(1):47–57. PubMed 40047362	Prospective case series · 10 patients / 13 advanced defects · 12 months	Electrolytic method for 2 min, then saline, then rhPDGF-BB applied to the surface before grafting. NiTi brushes 2–3 min at 600 rpm beforehand.	Not the subject of the report	Survival 100 %; mean pocket depth -4.5 mm; defects narrower and shallower; resolution 61.5 %

Background reading

· The effect of NiTi brush, polishing brush and chemical agent on the dental implant surface morphology and cytocompatibility Clinical Implant Dentistry and Related Research · 2025 · in vitro Giulia Brunello, Kathrin Becker, Nicole Rauch, Frank Schwarz, Jürgen Becker Titanium discs treated with NiTi brushes, diamond polishing brushes or a phenol/sulfuric-acid gel. The gel did not alter surface morphology whereas both brushes did; cell viability after 7 days was highest on NiTi-brushed discs stored in saline; operative time was shorter for NiTi than for the polishing brush. Read the original ->

· Inclusion. A paper is listed only when its Methods identify the mechanical instrument as the NiTi Brush of HANS Korea and describe what was applied to the surface afterwards. Studies using other titanium brushes are not included, even where the protocol is similar.

· Wording. Every line is written by HANS Korea from the paper's Methods and Results. Nothing is quoted or reproduced; figures and tables of the papers are not copied.

· Verification. Concentrations, times and outcome figures are transcribed as the authors reported them and must be checked against the original before clinical use.

· Scope. Non-surgical protocols, grafting materials, membranes and maintenance schedules are outside the scope except where they bear directly on the surface adjunct.

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