

Soft Tissue Chamber – größeres Weichgewebevolumen und hohe Ästhetik

Die Ästhetik ist eine der wichtigsten Messgrößen für das Ergebnis in der modernen Implantologie. Die Soft Tissue Chamber – eine dreidimensionale Kammer, die zwischen dem horizontalen Versatz des Implantats und der Außenfläche des Abutments entsteht – vergrößert die Kontaktzone und das Volumen des Weichgewebes und führt zu natürlichen ästhetischen Ergebnissen.

Die Soft Tissue Chamber ist seit 1985* ein zentrales Designelement des Astra Tech Implant Systems. Daher sind die Daten und Ergebnisse zur Soft Tissue Chamber in der verfügbaren klinischen Dokumentation zur Beurteilung des periimplantären Weichgewebes enthalten.

Weichgewebestabilität

Die Soft Tissue Chamber ermöglicht eine größere Kontaktzone und ein erhöhtes Weichgewebevolumen, wodurch der marginale Knochen abgedichtet und geschützt wird¹⁻⁶.

Dies führt zu:

- Lang anhaltender Hart- und Weichgewebestabilität⁷⁻¹⁴
- Förderung der Bildung von Bindegewebe und Kollagenfasern^{2, 7, 15-17}
- Aufrechterhaltung des krestalen Knochenniveaus**, das Voraussetzung für eine natürliche Interdentalpapille ist¹⁸

Hohe ästhetische Ergebnisse und Patientenzufriedenheit

Zahlreiche klinische Studien zeigen gute ästhetische Ergebnisse¹⁹⁻³³ bei gleichbleibender oder sogar zunehmender Papillenhöhe und Weichgewebedimensionen. Die Ästhetik wird bewertet unter Verwendung von:

- Pink Esthetic Score^{10-14, 34-48}
- Gingival Zenith Score^{8, 37, 38, 41, 42, 45, 49-55}
- Papilla index^{7, 8, 16, 49-51, 56-67}

Darüber hinaus wird über eine hohe Patientenzufriedenheit berichtet, die anhand des OHIP^{23, 47, 48, 60, 61, 68-96}, der Visual Analogue Scale^{19, 23, 71, 79, 80, 85, 87, 97-103} und anderer Methoden^{25, 56, 64, 99, 104-121} gemessen wurde.

Fazit

Die Soft Tissue Chamber erhält die Weichgewebekontur, was zu hohen ästhetischen Ergebnissen sowie hoher Patientenzufriedenheit führt.

*Soft Tissue Chamber (ehemals Connective Contour) wurde 2021 für die Implantat-Produktlinien DS OmniTaper und DS PrimeTaper eingeführt.

**Siehe Scientific Review „Marginaler Knochenerhalt mit Astra Tech Implant System“, www.dentsplysirona.com/science

1. Abrahamsson I, Berglund T. Tissue characteristics at microthreaded implants: An experimental study in dogs. *Clin Implant Dent Relat Res* 2006;8(3):107-13. [Abstract](#)
2. Moon IS, Berglund T, Abrahamsson I, Linder E, Lindhe J. The barrier between the keratinized mucosa and the dental implant. An experimental study in the dog. *J Clin Periodontol* 1999;26(10):658-63. [Abstract](#)
3. Abrahamsson I, Berglund T, Wennström J, Lindhe J. The peri-implant hard and soft tissues at different implant systems. A comparative study in the dog. *Clin Oral Implants Res* 1996;7(3):212-19. [Abstract](#)
4. Welander M, Abrahamsson I, Berglund T. The mucosal barrier at implant abutments of different materials. *Clin Oral Implants Res* 2008;19(7):635-41. [Abstract](#)
5. Abrahamsson I, Berglund T, Moon IS, Lindhe J. Peri-implant tissues at submerged and non-submerged titanium implants. *J Clin Periodontol* 1999;26(9):600-7. [Abstract](#)
6. Abrahamsson I, Berglund T, Sekino S, Lindhe J. Tissue reactions to abutment shift: An experimental study in dogs. *Clin Implant Dent Relat Res* 2003;5(2):82-8. [Abstract](#)
7. Cecchinato D, Lops D, Salvi GE, Sanz M. A prospective, randomized, controlled study using OsseoSpeed implants placed in maxillary fresh extraction socket: soft tissues response. *Clin Oral Implants Res* 2015;26(1):20-7. [Abstract](#)
8. De Bruyn H, Raes F, Cooper LF, Reside G, Garriga JS, Tarrida LG, Wiltfang J, Kern M. Three-years clinical outcome of immediate provisionalization of single Osseospeed(®) implants in extraction sockets and healed ridges. *Clin Oral Implants Res* 2013;24(2):217-23. [Abstract](#)
9. Noelken R, Donati M, Fiorellini J, Gellrich NC, Parker W, Wada K, Berglund T. Soft and hard tissue alterations around implants placed in an alveolar ridge with a sloped configuration. *Clin Oral Implants Res* 2014;25(1):3-9. [Abstract](#)
10. Noelken R, Moergel M, Kunkel M, Wagner W. Immediate and flapless implant insertion and provisionalization using autogenous bone grafts in the esthetic zone: 5-year results. *Clin Oral Implants Res* 2018;29(3):320-27. [Abstract](#)
11. Noelken R, Moergel M, Pausch T, Kunkel M, Wagner W. Clinical and esthetic outcome with immediate insertion and provisionalization with or without connective tissue grafting in presence of mucogingival recessions: A retrospective analysis with follow-up between 1 and 8 years. *Clin Implant Dent Relat Res* 2018;20(3):285-93. [Abstract](#)
12. Noelken R, Oberhansl F, Kunkel M, Wagner W. Immediately provisionalized OsseoSpeed® Profile implants inserted into extraction sockets: 3-year results. *Clin Oral Implants Res* 2016;27(6):744-9. [Abstract](#)
13. Noelken R, Pausch T, Al-Nawas B, Wagner W. Long-term results of immediately inserted and provisionalized OsseoSpeed Profile implants in the esthetic zone (P15602). *Clin Oral Impl Res* 2019;30(Supplement S19):408-08.
14. Noelken R, Schiegnitz E, Berglund T, Wagner W. Functional hard and soft tissue regeneration around Profile implants placed in sloped alveolar ridges - 10-year results (P15600). *Clin Oral Impl Res* 2019;30(Supplement S19):19-19.
15. Cooper LF, Tarnow D, Froum S, Moriarty J, De Kok JJ. Comparison of marginal bone changes with internal conus and external hexagon design implant systems: A prospective, randomized study. *Int J Periodontics Restorative Dent* 2016;36(5):631-42. [Abstract](#)
16. Sanz M, Cecchinato D, Ferrus J, Salvi GE, Ramseier C, Lang NP, Lindhe J. Implants placed in fresh extraction sockets in the maxilla: clinical and radiographic outcomes from a 3-year follow-up examination. *Clin Oral Implants Res* 2014;25(3):321-7. [Abstract](#)
17. van Brakel R, Meijer GJ, Verhoeven JW, Jansen J, de Putter C, Cune MS. Soft tissue response to zirconia and titanium implant abutments: an in vivo within-subject comparison. *J Clin Periodontol* 2012;39(10):995-1001. [Abstract](#)
18. Norton MR, Astrom M. The Influence of Implant Surface on Maintenance of Marginal Bone Levels for Three Premium Implant Brands: A Systematic Review and Meta-analysis. *Int J Oral Maxillofac Implants* 2020;35(6):1099-111. [Abstract](#)
19. Chang M, Wennstrom JL. Soft tissue topography and dimensions lateral to single implant-supported restorations. a cross-sectional study. *Clin Oral Implants Res* 2013;24(5):556-62. [Abstract](#)
20. Donati M, La Scala V, Billi M, Di Dino B, Torrisi P, Berglund T. Immediate functional loading of implants in single tooth replacement: a prospective clinical multicenter study. *Clin Oral Implants Res* 2008;19(8):740-48. [Abstract](#)
21. Donati M, La Scala V, Di Raimondo R, Speroni S, Testi M, Berglund T. Marginal bone preservation in single-tooth replacement: a 5-year prospective clinical multicenter study. *Clin Implant Dent Relat Res* 2015;17(3):425-34. [Abstract](#)
22. Ebler S, Ioannidis A, Jung RE, Hammerle CH, Thoma DS. Prospective randomized controlled clinical study comparing two types of two-piece dental implants supporting fixed reconstructions - results at 1 year of loading. *Clin Oral Implants Res* 2016;27(9):1169-77. [Abstract](#)
23. Hosseini M, Gotfredsen K. A feasible, aesthetic quality evaluation of implant-supported single crowns: an analysis of validity and reliability. *Clin Oral Implants Res* 2012;23(4):453-8. [Abstract](#)
24. Khzam N, Mattheos N, Roberts D, Bruce WL, Ivanovski S. Immediate placement and restoration of dental implants in the esthetic region: clinical case series. *J Esthet Restor Dent* 2014;26(5):332-44. [Abstract](#)
25. Kim A, Campbell SD, Viana MA, Knoernschild KL. Abutment material effect on peri-implant soft tissue color and perceived esthetics. *J Prosthodont* 2016;25(8):634-40. [Abstract](#)
26. Kraus RD, Epprecht A, Hammerle CHF, Sailer I, Thoma DS. Cemented vs screw-retained zirconia-based single implant reconstructions: A 3-year prospective randomized controlled clinical trial. *Clin Implant Dent Relat Res* 2019;21(4):578-85. [Abstract](#)
27. Lops D, Chiapasco M, Rossi A, Bressan E, Romeo E. Incidence of inter-proximal papilla between a tooth and an adjacent immediate implant placed into a fresh extraction socket: 1-year prospective study. *Clin Oral Implants Res* 2008;19(11):135-40. [Abstract](#)
28. Lops D, Parpaola A, Paniz G, Sbricoli L, Magaz VR, Venezze AC, Bressan E, Stellini E. Interproximal papilla stability around CAD/CAM and stock abutments in anterior regions: A 2-year prospective multicenter cohort study. *Int J Periodontics Restorative Dent* 2017;37(5):657-65. [Abstract](#)
29. Pieri F, Siroli L, Forlivesi C, Corinaldesi G. Clinical, esthetic, and radiographic evaluation of small-diameter (3.0-mm) implants supporting single crowns in the anterior region: a 3-year prospective study. *Int J Periodontics Restorative Dent* 2014;34(6):825-32. [Abstract](#)
30. Raes F, Cosyn J, Crommelinck E, Coessens P, De Bruyn H. Immediate and conventional single implant treatment in the anterior maxilla: 1-year results of a case series on hard and soft tissue response and aesthetics. *J Clin Periodontol* 2011;38(4):385-94. [Abstract](#)
31. Raes S, Rocci A, Raes F, Cooper L, De Bruyn H, Cosyn J. A prospective cohort study on the impact of smoking on soft tissue alterations around single implants. *Clin Oral Implants Res* 2015;26(9):1086-90. [Abstract](#)
32. Ricciardi MT, Pizzi P. High-risk esthetically driven restoration: begin with the end in mind. *Compend Contin Educ Dent* 2013;34(3):206-10. [Abstract](#)
33. Thoma DS, Brandenberg F, Fehmer V, Knechtle N, Hammerle CH, Sailer I. The esthetic effect of veneered zirconia abutments for single-tooth implant reconstructions: A randomized controlled clinical trial. *Clin Implant Dent Relat Res* 2016;18(6):1210-17. [Abstract](#)
34. Arora H, Ivanovski S. Correlation between pre-operative buccal bone thickness and soft tissue changes around immediately placed and restored implants in the maxillary anterior region: A 2-year prospective study. *Clin Oral Implants Res* 2017;28(10):1188-94. [Abstract](#)
35. Arora H, Ivanovski S. Clinical and aesthetic outcomes of immediately placed single-tooth implants with immediate vs. delayed restoration in the anterior maxilla: A retrospective cohort study. *Clin Oral Implants Res* 2018;29:346-52. [Abstract](#)
36. Arora H, Khzam N, Roberts D, Bruce WL, Ivanovski S. Immediate implant placement and restoration in the anterior maxilla: Tissue dimensional changes after 2-5 year follow up. *Clin Implant Dent Relat Res* 2017;19(4):694-702. [Abstract](#)
37. Barwacz CA, Stanford CM, Diehl UA, Cooper LF, Feine J, McGuire M, Scheyer ET. Pink esthetic score outcomes around three implant-abutment configurations: 3-year results. *Int J Oral Maxillofac Implants* 2018;33(5):1126-35. [Abstract](#)
38. Barwacz CA, Stanford CM, Diehl UA, Qian F, Cooper LF, Feine J, McGuire M. Electronic assessment of peri-implant mucosal esthetics around three implant-abutment configurations: a randomized clinical trial. *Clin Oral Implants Res* 2016;27(6):707-15. [Abstract](#)
39. Borges T, Lima T, Carvalho A, Dourado C, Carvalho V. The influence of customized abutments and custom metal abutments on the presence of the interproximal papilla at implants inserted in single-unit gaps: a 1-year prospective clinical study. *Clin Oral Implants Res* 2014;25(11):1222-7. [Abstract](#)
40. Borges T, Lima T, Carvalho AC, Carvalho V. Clinical outcome of inter-proximal papilla between a tooth and a single implant treated with CAD/CAM abutments: a cross-sectional study. *J Oral Maxillofac Res* 2012;3(3). [Abstract](#)
41. Cooper LF, Reside G, Stanford C, Barwacz C, Feine J, Abi Nader S, Scheyer ET, McGuire M. A multicenter randomized comparative trial of implants with different abutment interfaces to replace anterior maxillary single teeth. *Int J Oral Maxillofac Implants* 2015;30(3):622-32. [Abstract](#)
42. Cooper LF, Reside G, Stanford C, Barwacz C, Feine J, Nader SA, Scheyer T, McGuire M. Three-year prospective randomized comparative assessment of anterior maxillary single implants with different abutment interfaces. *Int J Oral Maxillofac Implants* 2019;34(1):150-58. [Abstract](#)
43. Jacobs BP, Zadeh HH, De Kok I, Cooper L. A Randomized Controlled Trial Evaluating Grafting the Facial Gap at Immediately Placed Implants. *Int J Periodontics Restorative Dent* 2020;40(3):383-92. [Abstract](#)
44. Marcellis K, Verbruggen M, Naert I, Teughels W, Quirynen M. Model-based guided implant insertion for solitary tooth replacement: a pilot study. *Clin Oral Implants Res* 2012;23(8):999-1003. [Abstract](#)
45. McGuire MK, Scheyer T, Ho DK, Stanford CM, Feine JS, Cooper LF. Esthetic outcomes in relation to implant-abutment interface design following a standardized treatment protocol in a multicenter randomized controlled trial- A cohort of 12 cases at 1-year follow-up. *Int J Periodontics Restorative Dent* 2015;35(2):149-59. [Abstract](#)
46. Noelken R, Neffe BA, Kunkel M, Wagner W. Maintenance of marginal bone support and soft tissue esthetics at immediately provisionalized OsseoSpeed implants placed into extraction sites: 2-year results. *Clin Oral Implants Res* 2014;25(2):214-20. [Abstract](#)
47. Raes F, Cosyn J, De Bruyn H. Clinical, aesthetic, and patient-related outcome of immediately loaded single implants in the anterior maxilla: A prospective study in extraction sockets, healed ridges, and grafted sites. *Clin Implant Dent Relat Res* 2013;15(6):819-35. [Abstract](#)
48. Raes S, Eghbali A, Chappuis V, Raes F, De Bruyn H, Cosyn J. A long-term prospective cohort study on immediately restored single tooth implants inserted in extraction sockets and healed ridges: CBCT analyses, soft tissue alterations, aesthetic ratings, and patient-reported outcomes. *Clin Implant Dent Relat Res* 2018;20(4):522-30. [Abstract](#)
49. Cooper LF, Raes F, Reside GJ, Garriga JS, Tarrida LG, Wiltfang J, Kern M, de Bruyn H. Comparison of radiographic and clinical outcomes following immediate provisionalization of single-tooth dental implants placed in healed alveolar ridges and extraction sockets. *Int J Oral Maxillofac Implants* 2010;25(6):1222-32. [Abstract](#)
50. Cooper LF, Reside G, Raes F, Garriga JS, Tarrida LG, Wiltfang J, Kern M, De Bruyn H. Immediate provisionalization of dental implants in grafted alveolar ridges in the esthetic zone: a 5-year evaluation. *Int J Periodontics Restorative Dent* 2014;34(4):477-86. [Abstract](#)

51. Cooper LF, Reside GJ, Raes F, Garriga JS, Tarrida LG, Wiltfang J, Kern M, De Bruyn H. Immediate provisionalization of dental implants placed in healed alveolar ridges and extraction sockets: A 5-year prospective evaluation. *Int J Oral Maxillofac Implants* 2014;29(3):709-17. [Abstract](#)
52. Galindo-Moreno P, Nilsson P, King P, Becktor J, Speroni S, Schramm A, Maiorana C. Clinical and radiographic evaluation of early loaded narrow diameter implants - 1-year follow-up. *Clin Oral Implants Res* 2012;23(5):609-16. [Abstract](#)
53. Galindo-Moreno P, Nilsson P, King P, Worsaae N, Schramm A, Padial-Molina M, Maiorana C. Clinical and radiographic evaluation of early loaded narrow-diameter implants: 5-year follow-up of a multicenter prospective clinical study. *Clin Oral Implants Res* 2017;28(12):1584-91. [Abstract](#)
54. King P, Maiorana C, Luthardt RG, Sondell K, Oland J, Galindo-Moreno P, Nilsson P. Clinical and radiographic evaluation of a small-diameter dental implant used for the restoration of patients with permanent tooth agenesis (hypodontia) in the maxillary lateral incisor and mandibular incisor regions: a 36-month follow-up. *Int J Prosthodont* 2016;29(2):147-53. [Abstract](#)
55. Maiorana C, King P, Quaas S, Sondell K, Worsaae N, Galindo-Moreno P. Clinical and radiographic evaluation of early loaded narrow-diameter implants: 3 years follow-up. *Clin Oral Implants Res* 2015;26(1):77-82. [Abstract](#)
56. Bashutski JD, Wang HL, Rudek I, Moreno I, Koticha T, Oh TJ. Effect of flapless surgery on single-tooth implants in the esthetic zone: a randomized clinical trial. *J Periodontol* 2013;84(12):1747-54. [Abstract](#)
57. Büchi DL, Sailer I, Fehmer V, Hammerle CH, Thoma DS. All-ceramic single-tooth implant reconstructions using modified zirconia abutments: a prospective randomized controlled clinical trial of the effect of pink veneering ceramic on the esthetic outcomes. *Int J Periodontics Restorative Dent* 2014;34(1):29-37. [Abstract](#)
58. Eisner B, Naenni N, Husler J, Hammerle C, Thoma D, Sailer I. Three-year results of a randomized controlled clinical trial using submucosally veneered and unveneered zirconia abutments supporting all-ceramic single-implant crowns. *Int J Periodontics Restorative Dent* 2018;38(5):645-52. [Abstract](#)
59. Hosseini M, Worsaae N, Gotfredsen K. Tissue changes at implant sites in the anterior maxilla with and without connective tissue grafting: A five-year prospective study. *Clin Oral Implants Res* 2020;31(1):18-28. [Abstract](#)
60. Hosseini M, Worsaae N, Schiodt M, Gotfredsen K. A 1-year randomised controlled trial comparing zirconia versus metal-ceramic implant supported single-tooth restorations. *Eur J Oral Implantol* 2011;4(4):347-61. [Abstract](#)
61. Hosseini M, Worsaae N, Schiodt M, Gotfredsen K. A 3-year prospective study of implant-supported, single-tooth restorations of all-ceramic and metal-ceramic materials in patients with tooth agenesis. *Clin Oral Implants Res* 2013;24(10):1078-87. [Abstract](#)
62. Laass A, Sailer I, Husler J, Hammerle CH, Thoma DS. Randomized controlled clinical trial of all-ceramic single-tooth implant reconstructions using modified zirconia abutments: Results at 5 years after loading. *Int J Periodontics Restorative Dent* 2019;39(1):17-27. [Abstract](#)
63. Lops D, Mosca D, Muller A, Rossi A, Rozza R, Romeo E. Management of peri-implant soft tissues between tooth and adjacent immediate implant placed into fresh extraction single socket: a one-year prospective study on two different types of implant-abutment connection design. *Minerva Stomatol* 2011;60(9):403-15. [Abstract](#)
64. Mertens C, Steveling HG. Early and immediate loading of titanium implants with fluoride-modified surfaces: results of 5-year prospective study. *Clin Oral Implants Res* 2011;22(12):1354-60. [Abstract](#)
65. Stanford CM, Wagner W, Rodriguez YBR, Norton M, McClumphy E, Schmidt J. Evaluation of the effectiveness of dental implant therapy in a practice-based network (FOCUS). *Int J Oral Maxillofac Implants* 2010;25(2):367-73. [Abstract](#)
66. Thoma DS, Brandenberg F, Fehmer V, Büchi DL, Hammerle CH, Sailer I. Randomized controlled clinical trial of all-ceramic single tooth implant reconstructions using modified zirconia abutments: Radiographic and prosthetic results at 1 year of loading. *Clin Implant Dent Relat Res* 2016;18(3):462-72. [Abstract](#)
67. Tsuda H, Rungcharassaeng K, Kan JY, Roe P, Lozada JL, Zimmerman G. Peri-implant tissue response following connective tissue and bone grafting in conjunction with immediate single-tooth replacement in the esthetic zone: A case series. *Int J Oral Maxillofac Implants* 2011;26(2):427-36. [Abstract](#)
68. Bernard L, Vercruyssen M, Duyck J, Jacobs R, Teughels W, Quirynen M. A randomized controlled clinical trial comparing guided with nonguided implant placement: A 3-year follow-up of implant-centered outcomes. *J Prosthodont* 2019;121(6):904-10. [Abstract](#)
69. Bilhan H, Geckili O, Sulun T, Bilgin T. A quality-of-life comparison between self-aligning and ball attachment systems for 2-implant-retained mandibular overdentures. *J Oral Implantol* 2011;37 Spec No(spl):167-73. [Abstract](#)
70. Cakir O, Kazancioglu HO, Celik G, Deger S, Ak G. Evaluation of the efficacy of mandibular conventional and implant prostheses in a group of Turkish patients: a quality of life study. *J Prosthodont* 2014;23(5):390-6. [Abstract](#)
71. De Kok I, Chang K-H, Li T-S, Cooper LF. Comparison of three-implant-supported fixed dentures and two-implant-retained overdentures in the edentulous mandible: A pilot study of treatment efficacy and patient satisfaction. *Int J Oral Maxillofac Implants* 2011;26(2):415-26. [Abstract](#)
72. Doornewaard R, Bruyn H, Matthyss C, Bronkhorst E, Vandeweghe S, Vervaeke S. The Long-Term Effect of Adapting the Vertical Position of Implants on Peri-Implant Health: A 5-Year Intra-Subject Comparison in the Edentulous Mandible Including Oral Health-Related Quality of Life. *J Clin Med* 2020;9(10). [Abstract](#)
73. Doornewaard R, Gilbert M, Matthyss C, Vervaeke S, Bronkhorst E, de Bruyn H. Improvement of Quality of Life with Implant-Supported Mandibular Overdentures and the Effect of Implant Type and Surgical Procedure on Bone and Soft Tissue Stability: A Three-Year Prospective Split-Mouth Trial. *J Clin Med* 2019;8(6). [Abstract](#)
74. Emami E, Cerutti-Kopplin D, Menassa M, Audy N, Kodama N, Durand R, Rompre P, de Grandmont P. Does immediate loading affect clinical and patient-centered outcomes of mandibular 2-unsplinted-implant overdenture? A 2-year within-case analysis. *J Dent* 2016;50:30-6. [Abstract](#)
75. Erkapers M, Ekstrand K, Baer RA, Toljanic JA, Thor A. Patient satisfaction following dental implant treatment with immediate loading in the edentulous atrophic maxilla. *Int J Oral Maxillofac Implants* 2011;26(2):356-64. [Abstract](#)
76. Ettl T, Weindler J, Gosau M, Müller S, Hautmann M, Zeman F, Koller M, Papavasiliou D, Burgers R, Driemel O, Schneider I, Klingelhoefer C, Meier J, Wahlmann U, Reichert TE. Impact of radiotherapy on implant-based prosthetic rehabilitation in patients with head and neck cancer: A prospective observational study on implant survival and quality of life-preliminary results. *J Craniomaxillofac Surg* 2016;44(9):1453-62. [Abstract](#)
77. Gates WD, 3rd, Cooper LF, Sanders AE, Reside GJ, De Kok IJ. The effect of implant-supported removable partial dentures on oral health quality of life. *Clin Oral Implants Res* 2014;25(2):207-13. [Abstract](#)
78. Geckili O, Bilhan H, Bilgin T. Impact of mandibular two-implant retained overdentures on life quality in a group of elderly Turkish edentulous patients. *Arch Gerontol Geriatr* 2011;53(2):233-6. [Abstract](#)
79. Geckili O, Bilhan H, Mumcu E. Clinical and radiographic evaluation of three-implant-retained mandibular overdentures: a 3-year retrospective study. *Quintessence Int* 2011;42(9):721-8. [Abstract](#)
80. Geckili O, Bilhan H, Mumcu E, Dayan C, Yabul A, Tuncer N. Comparison of patient satisfaction, quality of life, and bite force between elderly edentulous patients wearing mandibular two implant-supported overdentures and conventional complete dentures after 4 years. *Spec Care Dentist* 2012;32(4):136-41. [Abstract](#)
81. Limmer B, Sanders AE, Reside G, Cooper LF. Complications and patient-centered outcomes with an implant-supported monolithic zirconia fixed dental prosthesis: 1 year results. *J Prosthodont* 2014;23(4):267-75. [Abstract](#)
82. Martin-Ares M, Barona-Dorado C, Guisado-Moya B, Martinez-Rodriguez N, Cortes-Breton-Brinkmann J, Martinez-Gonzalez JM. Prosthetic hygiene and functional efficacy in completely edentulous patients: satisfaction and quality of life during a 5-year follow-up. *Clin Oral Implants Res* 2016;27(12):1500-05. [Abstract](#)
83. Matthyss C, De Vijlder W, Besseler J, Glibert M, De Bruyn H. Cost-effectiveness analysis of two attachment systems for mandibular overdenture. *Clin Oral Implants Res* 2020;E-pub Mar 27 doi:10.1111/CLR.13599. [Abstract](#)
84. Matthyss C, Vervaeke S, Besseler J, De Bruyn H. Five-year study of mandibular overdentures on stud abutments: Clinical outcome, patient satisfaction and prosthetic maintenance-Influence of bone resorption and implant position. *Clin Oral Implants Res* 2019;30(9):940-51. [Abstract](#)
85. Menassa M, de Grandmont P, Audy N, Durand R, Rompre P, Emami E. Patients' expectations, satisfaction, and quality of life with immediate loading protocol. *Clin Oral Implants Res* 2016;27(1):83-9. [Abstract](#)
86. Mertens C, de San Jose Gonzalez J, Freudlsperger C, Bodem J, Krisam J, Hoffmann J, Engel M. Implant-prosthetic rehabilitation of hemimaxillectomy defects with CAD/CAM suprastructures. *J Craniomaxillofac Surg* 2016;44(11):1812-18. [Abstract](#)
87. Mumcu E, Bilhan H, Geckili O. The effect of attachment type and implant number on satisfaction and quality of life of mandibular implant-retained overdenture wearers. *Gerodontology* 2012;29(2):e618-23. [Abstract](#)
88. Ponsi J, Lahti S, Rissanen H, Oikarinen K. Change in subjective oral health after single dental implant treatment. *Int J Oral Maxillofac Implants* 2011;26(3):571-7. [Abstract](#)
89. Raes F, Cooper LF, Tarrida LG, Vandromme H, De Bruyn H. A case-control study assessing oral-health-related quality of life after immediately loaded single implants in healed alveolar ridges or extraction sockets. *Clin Oral Implants Res* 2012;23(5):602-8. [Abstract](#)
90. Raes S, Raes F, Cooper L, Giner Tarrida L, Vervaeke S, Cosyn J, De Bruyn H. Oral health-related quality of life changes after placement of immediately loaded single implants in healed alveolar ridges or extraction sockets: a 5-year prospective follow-up study. *Clin Oral Implants Res* 2017;28(6):662-67. [Abstract](#)
91. Thoma DS, Haas R, Sporniak-Tutak K, Garcia A, Taylor TD, Hammerle CHF. Randomized controlled multicentre study comparing short dental implants (6 mm) versus longer dental implants (11-15 mm) in combination with sinus floor elevation procedures: 5-Year data. *J Clin Periodontol* 2018;45(12):1465-74. [Abstract](#)
92. Thoma DS, Haas R, Tutak M, Garcia A, Schincaglia GP, Hammerle CH. Randomized controlled multicentre study comparing short dental implants (6 mm) versus longer dental implants (11-15 mm) in combination with sinus floor elevation procedures. Part 1: demographics and patient-reported outcomes at 1 year of loading. *J Clin Periodontol* 2015;42(1):72-80. [Abstract](#)
93. Toia M, Wennerberg A, Torrisi F, Farina V, Corra E, Cecchinato D. Patient satisfaction and clinical outcomes in implant-supported overdentures retained by milled bars: Two-year follow-up. *J Oral Rehabil* 2019;46(7):624-33. [Abstract](#)
94. Van Lierde K, Browaeys H, Corthals P, Mussche P, Van Kerckhove E, De Bruyn H. Comparison of speech intelligibility, articulation and oromyofunctional behaviour in subjects with single-tooth implants, fixed implant prosthetics or conventional removable prostheses. *J Oral Rehabil* 2012;39(4):285-93. [Abstract](#)
95. Van Lierde KM, Corthals P, Browaeys H, Mussche P, Van Kerckhove E, De Bruyn H. Impact of anterior single-tooth implants on quality of life, articulation and oromyofunctional behaviour: a pilot study. *J Oral Rehabil* 2011;38(3):170-5. [Abstract](#)
96. Vercruyssen M, van de Wiele G, Teughels W, Naert I, Jacobs R, Quirynen M. Implant- and patient-centred outcomes of guided surgery, a 1-year follow-up: An RCT comparing guided surgery with conventional implant placement. *J Clin Periodontol* 2014;41(12):1154-60. [Abstract](#)
97. Barbier L, Pottel L, De Ceulaer J, Lamoral P, Duyck J, Jacobs R, Abeloos J. Evaluation of quality of life after mandibular reconstruction using a novel fixed implant-supported dental prosthesis concept: A pilot study. *Int J Prosthodont* 2019;32(2):162-73. [Abstract](#)
98. Dierens M, Collaert B, Deschepper E, Browaeys H, Klinge B, De Bruyn H. Patient-centered outcome of immediately loaded implants in the rehabilitation of fully edentulous jaws. *Clin Oral Implants Res* 2009;20(10):1070-77. [Abstract](#)

99. Emami E, Alesawy A, de Grandmont P, Cerutti-Kopplin D, Kodama N, Menassa M, Rompre P, Durand R. A within-subject clinical trial on the conversion of mandibular two-implant to three-implant overdenture: Patient-centered outcomes and willingness to pay. *Clin Oral Implants Res* 2019;30(3):218-28. [Abstract](#)

100. Gotfredsen K. A 5-year prospective study of single-tooth replacements supported by the Astra Tech implant: a pilot study. *Clin Implant Dent Relat Res* 2004;6(1):1-8. [Abstract](#)

101. Gotfredsen K. A 10-year prospective study of single tooth implants placed in the anterior maxilla. *Clin Implant Dent Relat Res* 2009;14(1):80-7. [Abstract](#)

102. Hallman M, Mordenfeld A, Strandkvist T. A retrospective 5-year follow-up study of two different titanium implant surfaces used after interpositional bone grafting for reconstruction of the atrophic edentulous maxilla. *Clin Implant Dent Relat Res* 2005;7(3):121-6. [Abstract](#)

103. Toia M, Galli S, Cecchinato D, Wennerberg A, Jimbo R. Clinical Evidence of OsseoSpeed EV Implants: A Retrospective Study and Characterization of the Newly Introduced System. *Int J Periodontics Restorative Dent* 2019;39(6):863-74. [Abstract](#)

104. Boven GC, Slot JWA, Raghoobar GM, Vissink A, Meijer HJA. Maxillary implant-supported overdentures opposed by (partial) natural dentitions: a 5-year prospective case series study. *J Oral Rehabil* 2017;44(12):988-95. [Abstract](#)

105. Bressan E, Tomasi C, Stellini E, Sivoiella S, Favero G, Berglundh T. Implant-supported mandibular overdentures: a cross-sectional study. *Clin Oral Implants Res* 2012;23(7):814-9. [Abstract](#)

106. Gulje F, Raghoobar GM, Ter Meulen JW, Vissink A, Meijer HJ. Mandibular overdentures supported by 6-mm dental implants: a 1-year prospective cohort study. *Clin Implant Dent Relat Res* 2012;14 Suppl 1(Supplement 1):e59-66. [Abstract](#)

107. Gulje FL, Raghoobar GM, Vissink A, Meijer HJ. Single crowns in the resorbed posterior maxilla supported by either 6-mm implants or by 11-mm implants combined with sinus floor elevation surgery: A 1-year randomised controlled trial. *Eur J Oral Implantol* 2014;7(3):247-55. [Abstract](#)

108. Gulje FL, Raghoobar GM, Vissink A, Meijer HJ. Single restorations in the resorbed posterior mandible supported by 6-mm implants: a 1-year prospective case series study. *Clin Implant Dent Relat Res* 2015;17 Suppl 2:e465-71. [Abstract](#)

109. Gulje FL, Raghoobar GM, Vissink A, Meijer HJA. Single crown restorations supported by 6-mm implants in the resorbed posterior mandible: A five-year prospective case series. *Clin Implant Dent Relat Res* 2019;21(5):1017-22. [Abstract](#)

110. Gulje FL, Raghoobar GM, Vissink A, Meijer HJA. Single crowns in the resorbed posterior maxilla supported by either 11-mm implants combined with sinus floor elevation or 6-mm implants: A 5-year randomised controlled trial. *Int J Oral Implantol (Berl)* 2019;12(3):315-26. [Abstract](#)

111. Kriz P, Seydlova M, Dostalova T, Valenta Z, Chleborad K, Zvarova J, Feberova J, Hippmann R. Oral health-related quality of life and dental implants - preliminary study. *Cent Eur J Med* 2012;7(2):209-15. [Abstract](#)

112. Kriz P, Seydlova M, Dostalova T, Zdenek V, Chleborad K, Zvarova J, Feberova J, Hippmann R. Dental implants and improvement of oral health-related quality of life. *Community Dent Oral Epidemiol* 2012;40(Suppl 1):65-70. [Abstract](#)

113. Mertens C, Steveling HG, Seeberger R, Hoffmann J, Freier K. Reconstruction of severely atrophied alveolar ridges with calvarial onlay bone grafts and dental implants. *Clin Implant Dent Relat Res* 2013;15(5):673-83. [Abstract](#)

114. Packer M, Nikitin V, Coward T, Davis DM, Fiske J. The potential benefits of dental implants on the oral health quality of life of people with Parkinson's disease. *Gerodontology* 2009;26(1):11-8. [Abstract](#)

115. Palmer RM, Howe LC, Palmer PJ, Wilson R. A prospective clinical trial of single Astra Tech 4.0 or 5.0 diameter implants used to support two-unit cantilever bridges: results after 3 years. *Clin Oral Implants Res* 2012;23(1):35-40. [Abstract](#)

116. Parpaola A, Toia M, Norton M, Cecchinato D, Bressan E, Lops D. CAD/CAM Implant Abutments: Peri-implant Hard and Soft Tissue Response with Up to 4 Years of Follow-up - A Retrospective Cohort Study Evaluation. *Int J Periodontics Restorative Dent* 2020;40(2):193-201. [Abstract](#)

117. Pieri F, Aldini NN, Fini M, Marchetti C, Corinaldesi G. Preliminary 2-year report on treatment outcomes for 6-mm-long implants in posterior atrophic mandibles. *Int J Prosthodont* 2012;25(3):279-89. [Abstract](#)

118. Rismanchian M, Fazel A, Rakhshan V, Eblaghian G. One-year clinical and radiographic assessment of fluoride-enhanced implants on immediate non-functional loading in posterior maxilla and mandible: a pilot prospective clinical series study. *Clin Oral Implants Res* 2011;22(12):1440-5. [Abstract](#)

119. Schepke U, Meijer HJ, Kerdijk W, Cune MS. Digital versus analog complete-arch impressions for single-unit premolar implant crowns: Operating time and patient preference. *J Prosthet Dent* 2015;114(3):403-6 e1. [Abstract](#)

120. Slot W, Raghoobar GM, Cune MS, Vissink A, Meijer HJ. Maxillary overdentures supported by four or six implants in the anterior region: 5-year results from a randomized controlled trial. *J Clin Periodontol* 2016;43(12):1180-87. [Abstract](#)

121. Slot W, Raghoobar GM, Vissink A, Meijer HJ. Maxillary overdentures supported by four or six implants in the anterior region; 1-year results from a randomized controlled trial. *J Clin Periodontol* 2013;40(3):303-10. [Abstract](#)

Dentsply Sirona

Deutschland

DENTSPLY IH GmbH
Steinzeugstraße 50, 68229 Mannheim, Deutschland
implants@dentsplysirona.com

☎ DE: 06251 16-1610

Lieferadresse Pakete und Päckchen
Dentsply Sirona Deutschland GmbH
Fabrikstraße 39, 64625 Bensheim, Deutschland

Lieferadresse Briefe und Unterlagen
Dentsply Sirona Deutschland GmbH
Fabrikstraße 31, 64625 Bensheim, Deutschland

Österreich

Dentsply Sirona Austria GmbH
Wienerbergstrasse 11 / Turm A / 27. Stock, 1100 Wien, Österreich
bestellung.austria@dentsplysirona.com

☎ AT: 01 600 4930-301

Schweiz

Dentsply Sirona (Schweiz) AG
Täferweg 1, 5405 Baden-Dättwil, Schweiz
implants-ch-info@dentsplysirona.com

☎ CH: 0800 845-844

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