



**ORIGINAL ARTICLE** 

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# A bibliometric analysis of the 100 top-cited systematic review and meta-analysis in Orthodontics

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# **ABSTRACT**

**Objective:** This bibliometric study aimed to analyze the citation metrics, journal and author characteristics, and subject domains of the 100 top-cited Systematic Reviews (SR) and Meta-Analysis (MA) in orthodontics. Material and Methods: An electronic database search was conducted for SR and MA in the Web of Science on 16<sup>th</sup> July 2023, without language and time restrictions. Of the 802 hits returned, the 100 top-cited orthodontic articles were shortlisted. They were analyzed for citation metrics, journal characteristics (journal, year of publication, impact factor-IF), author and affiliation characteristics (number, primary and corresponding author's affiliation, and country), study domain, and keywords. Results: These articles were published from 1996 to 2021 in 20 journals, with an impact factor of 1.9 to 10.5, by 351 researchers affiliated with 104 universities. Their citations ranged from 45 to 344, and 34 poised to be classified as classic ( $\geq$  100 citations). The maximum number of articles was published in the American Journal of Orthodontics and Dentofacial Orthopedics (n=38), the European Journal of Orthodontics (n=18), and the Angle Orthodontist (n=8). The authors for individual papers ranged from 1 to 10, with 5 being the most common (n=58). Europe had the highest contribution regarding the number of corresponding authors, institutions, and citations. Bone anchorage and orthodontic tooth movement/Biomechanics were the most frequently researched domains (n=11 each). The most common keyword used was Orthodontics (n=19), followed by Systematic Review (n=16) and Meta-analysis (n=9). Conclusion: In general, the top cited SR and MA were published in high-impact orthodontic journals, were multi-authored, and reflected the collaborative work from different universities.

**Keywords:** Bibliometrics. Citation analysis. Orthodontics. Systematic reviews. Meta-analysis.

## **RESUMO**

Objetivo: Este estudo bibliométrico teve como objetivo analisar as métricas de citação, as características dos periódicos e dos autores, e os domínios temáticos das 100 Revisões Sistemáticas (RS) e Meta-Análises (MA) mais citadas em Ortodontia. Material e Métodos: Uma pesquisa em banco de dados eletrônico foi realizada para RS e MA na Web of Science no dia 16 de julho de 2023, sem restrições de idioma e data de publicação. Dos 802 resultados encontrados, foram selecionados os 100 artigos ortodônticos mais citados. Eles foram analisados quanto a métricas de citação, características do periódico (revista, ano de publicação e fator de impacto [FI]), características dos autores e afiliação (quantidade, afiliação dos autores principal e correspondente, e país), domínio do estudo e palavras-chave. Resultados: Esses artigos foram publicados entre 1996 e 2021 em 20 periódicos com fator de impacto de 1,9 a 10,5, por 351 pesquisadores afiliados a 104 universidades. Suas citações variaram de 45 a 344, com 34 prestes a serem classificados como clássicos (≥ 100 citações). A maior quantidade de artigos foi publicada na American Journal of Orthodontics and Dentofacial Orthopedics (n=38), na European Journal of Orthodontics (n=18), e no The Angle Orthodontist (n=8). A quantidade de autores por artigo variou de 1 a 10, sendo 5 o mais frequente (n=58). A Europa teve a maior contribuição em relação ao número de autores correspondentes, instituições e citações. Ancoragem óssea e movimentação dentária ortodôntica/Biomecânica foram os domínios mais abordados (n=11 cada). A palavra--chave mais utilizada foi Ortodontia (n=19), seguida de Revisão Sistemática (n=16) e Meta-análise (n=9). Conclusão: No geral, as RS e MA mais citadas foram publicadas em revistas ortodônticas de alto impacto, eram de autoria múltipla e refletiam o trabalho colaborativo de diferentes universidades.

**Palavras-chave:** Bibliometria. Análise de citações. Ortodontia. Revisões sistemáticas. Meta-análise.

#### INTRODUCTION

Bibliometric analysis is a scientific computer-assisted review methodology that identifies core research characteristics by covering all the publications related to a given topic or field. It typically measures research outputs like publication counts, citation counts, and measurements derived from these data.1 This information is a supporting tool for decision-making in setting research priorities, tracking the evolution of science and technology, funding allocation, and rewarding scientific excellence.2 One of the standard bibliometric methods is citation analysis, which quantifies the number and relationship of references an article receives over time.3 It also highlights the scientific progress and quality of research done throughout the years and the focus areas of active research. Despite being a time-dependent measure, it reflects the impact and progress of the research over the years, and is a widely used scientific quality indicator.4

With evidence-based clinical decision-making gaining momentum in all fields of Medicine and Dentistry, including Orthodontics, there is an increased focus on publications providing higher evidence. The widespread use of computer-based information systems and online access to publications have also enhanced the impact and utility of this evidence. According to the evidence-based Medicine pyramid, systematic review (SR) and meta-analysis (MA) provide the highest level of evidence, as they

synthesize reliable information with varying levels of evidence from already available literature.<sup>6</sup> SRs are designed to answer specific questions by employing a predetermined, precise methodology to comprehensively search for, select, assess and analyze original research studies. SRs may or may not include formal MAs. MA is the statistical pooling of the results of studies that are part of a systematic review, and presents a significant advantage to SRs, by increasing the overall sample size by combining data from individual studies, thus increasing the statistical power and precision to assess the treatment effects.<sup>7</sup>

Citation analyses in Orthodontics have often focused on the time frame of publication or emerging domains within the field, such as Lingual Orthodontics,<sup>8</sup> Temporary anchorage devices (TAD),<sup>9</sup> etc. However, citation analysis of level-one evidence constituting SRs and MAs has not been attempted. Further, information on the bibliometric characteristics of impactful, high-quality publications will help understand the trends in synthetic research. Hence, the current study was designed to identify and analyze the bibliometric characteristics of the 100 most-cited SRs and MAs in Orthodontics.

# **MATERIAL AND METHODS**

The Clarivate Analytics Web of Science (WoS) database has been widely used, being more accessible to historical literature. Therefore, a database search was performed in the WoS to track the top-cited SRs and MAs in Orthodontics. The search term in the topic field was entered as "(Systematic review OR Meta-analysis) AND Orthodont\*" without any time and language restrictions. The systematic search was conducted on 16<sup>th</sup> July 2023. The results were sorted based on the number of citations, and the first 200 articles were selected and exported to a Microsoft Excel spreadsheet (Microsoft Office 365, Microsoft Corporation, Redmond, Washington, USA), to evaluate their eligibility for inclusion in this study.

The preliminary screening of articles to assess their relevance to the study was performed independently by two authors (PV and US) based on the information from the title, abstract and the complete article, when required. Publications not directly related to orthodontics and those on craniofacial syndromes, cleft lip and palate were excluded. Any discordance related to the inclusion of a particular article was resolved by consensus discussion between all the authors. The hundred top-cited articles in the qualified list were included for data extraction and further analysis.

The information retrieved included the total number of citations, the journal of publication, year of publication, number of authors, details of the primary and corresponding authors (affiliation,

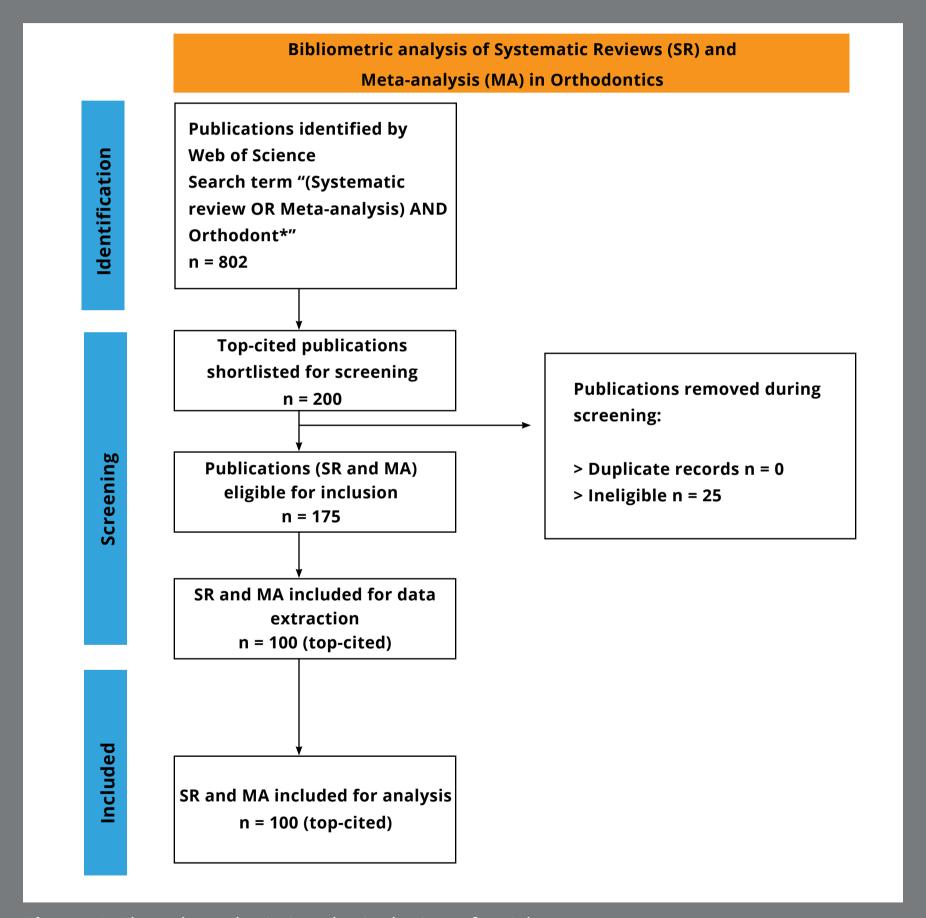
position, and country), funding organization, the journal's impact factor (IF), Digital Object Identifier (DOI), study type and domain, and keywords.<sup>8</sup> Manual data extraction and normalization were performed to unify terms and remove typographical errors. Normalization was carried out for the "Author," "Organization," and "Country of Origin" fields.<sup>10</sup> In cases of multiple and different entries for the same author, their affiliations were verified and confirmed through an internet search. Only universities and higher research centers were noted for the study's affiliation field. Information regarding departments, private practice, and smaller centers was not considered.<sup>8,10</sup> The orthodontic study domains were classified as proposed by Aura-Tormos et al.<sup>11</sup>

Two investigators (MS and BN) independently collected and tabulated the data. After completion, they were compared for concurrence. A periodic team review was conducted to settle all discrepancies, and the consensus data thus obtained was treated as final. The data analysis and pictorial representation of data were developed using Microsoft Office 365 (Microsoft Corporation, Redmond, Washington, USA).

#### **RESULTS**

An initial keyword search yielded 802 articles. The top 200 were exported for scrutiny in descending order of the number of citations. Twenty-five articles not fulfilling the eligibility criteria regarding subject matter were eliminated during

screening, leaving 175 for further consideration. From the final list, the 100 most-cited articles were included for analysis (Table 1). The systematic selection of articles is depicted in the flow chart (Fig 1).



**Figure 1:** Flow chart depicting the inclusion of articles.

# **CITATION METRICS**

The citation counts of the top 100 cited articles ranged from 45 to 344. These articles were published from 1996 to 2021 (Fig 2), with spikes in 2014 (n=15) and 2016 (n=13). Of these, 59 were SR, 6 were MA, and 35 were SR with MA. Thirty-four articles were cited more than 100 times and considered classic articles. The article "Root resorption associated with orthodontic tooth movement: A systematic review", from American Journal of Orthodontics and Dentofacial Orthopedics (AJODO), was the most cited publication.

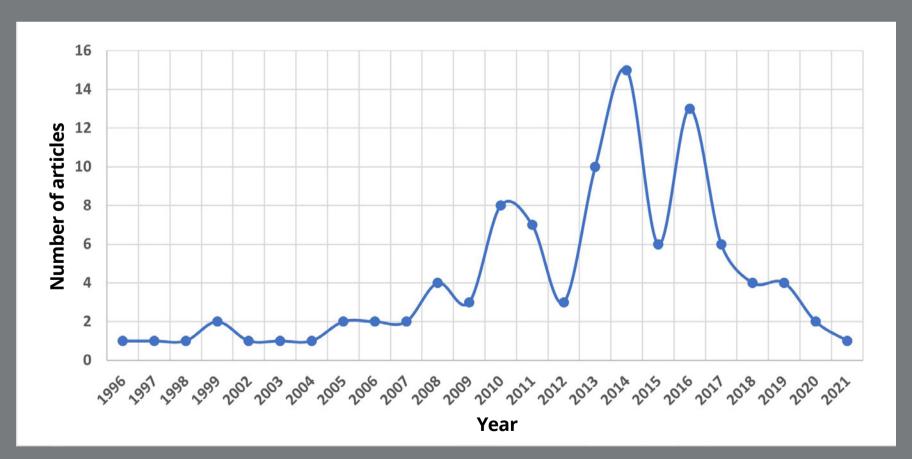


Figure 2: Top 100 cited systematic review and meta-analysis in orthodontics over the years.

**Table 1:** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

Title	Authors	Reference	Year	Times cited, WoS core		
Root resorption associated with orthodontic tooth movement: A systematic review	Weltman, B; Vig, KWL; Fields, HW; Shanker, S; Kaizar, EE	Am J Orthod Den- tofacial Orthop. 2010;137(4):462-12A.	2010	344		
Efficacy of clear aligners in con- trolling orthodontic tooth move- ment: A systematic review	Rossini, G; Parrini, S; Cas- troflorio, T; Deregibus, A; Debernardi, CL	Angle Orthod. 2015;85(5):881-889.	2015	277		
Optimum force magnitude for orthodontic tooth movement: A systematic literature review	Ren, YJ; Maltha, JC; Kui- jpers-Jagtman, AM	Angle Orthod. 2003;73(1):86-92.	2003	257		
Orthodontic measurements on digital study models compared with plaster models: a systematic review	Fleming, PS; Marinho, V; Johal, A	Orthod Craniofac Res. 2011;14(1):1-16.	2011	219		
Mandibular changes produced by functional appliances in Class II malocclusion: A systematic review	Cozza, P; Baccetti, T; Fran- chi, L; De Toffol, L; Mc- Namara, JA	Am J Orthod Den- tofacial Orthop. 2006;129(5):599.e1-e6.	2006	198		
The effectiveness of protraction face mask therapy: A meta-analy- sis	ectiveness of protraction Kim, JH; Viana, MAG; Am J Orthod Densk therapy: A meta-analy-Graber, TM; Omerza, FF; tofacial Orthop.		1999	191		
Failure rates and associated risk factors of orthodontic miniscrew implants: A meta-analysis	Papageorgiou, SN; Zoga- kis, IP; Papadopoulos, MA	IP: Panadonoulos MA		tofacial Orthon 201	2012	190
Digital three-dimensional image fusion processes for planning and evaluating orthodontics and or- thognathic surgery. A systematic review	Plooij, JM; Maal, TJJ; Haers, P; Borstlap, WA; Kui- jpers-Jagtman, AM; Berge, SJ	Int J Oral Maxillofac Surg. 2011;40(4):341- 352.	2011	188		
The effects of orthodontic therapy on periodontal health - A system- atic review of controlled evidence	Bollen, AM; Cunha-Cruz, J; Bakko, DW; Huang, GJ; Hujoel, PP	J Am Dent Assoc. 2008;139(4):413-422.	2008	169		
The impact of malocclusion on the quality of life among children and adolescents: a systematic review of quantitative studies	Dimberg, L; Arnrup, K; Bondemark, L	Eur J Orthod. 2015;37(3):238-247.	2014	167		
Skeletally anchored Forsus fatigue resistant device for correction of Class II malocclusions-A systemat- ic review and meta-analysis	Arvind, TRP; Jain, RK	Orthod Craniofac Res. 2021;24(1):52-61.	2021	159		
Orthodontic therapy and gingival recession: a systematic review	Joss-Vassalli, I; Greben- stein, C; Topouzelis, N; Sculean, A; Katsaros, C	Orthod Craniofac Res. 2010;13(3):127-141.	2010	150		
Association of orthodontic force system and root resorption: A systematic review	Roscoe, MG; Meira, JBC; Cattaneo, PM	Am J Orthod Den- tofacial Orthop. 2015;147(5):610-626.	2015	142		
A systematic review of the rela- tionship between overjet size and traumatic dental injuries	Nguyen, QV; Bezemer, PD; Habets, L; Prahl-An- dersen, B	Eur J Orthod. 1999;21(5):503-515.	1999	142		

**Table 1: (continuation)** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

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Title	Authors	Reference	Year	Times cited, WoS core
Mini-implants in orthodontics: A systematic review of the literature	Reynders, R; Ronchi, L; Bipat, S	Am J Orthod Den- tofacial Orthop. 2009;135(5):564.e1-565.	2009	139
Factors affecting the duration of orthodontic treatment: a system- atic review	Mavreas, D; Athanasiou, AE	Eur J Orthod. 2008;30(4):386-395.	2008	139
Caries-inhibiting effect of preven- tive measures during orthodontic treatment with fixed appliances - A systematic review	Derks, A; Katsaros, C; Frencken, JE; van 't Hof, MA; Kuijpers-Jagtman, AM	Caries Res. 2004;38(5):413-420.	2004	139
Craniofacial structure and obstructive sleep apnea syndrome - A qualitative analysis and meta-analysis of the literature	Miles, PG; Vig, PS; Weyant, RJ; Forrest, TD; Rockette, HE	Am J Orthod Den- tofacial Orthop. 1996;109(2):163-172.	1996	128
Craniofacial and upper airway morphology in pediatric sleep-dis- ordered breathing: Systematic review and meta-analysis	Katyal, V; Pamula, Y; Mar- tin, AJ; Daynes, CN; Kenne- dy, JD; Sampson, WJ	Am J Orthod Dentofacial Orthop. 2013;143(1):20- 30.e3.	2013	127
How long does treatment with fixed orthodontic appliances last? A systematic review	Tsichlaki, A; Chin, SY; Pan- dis, N; Fleming, PS	Am J Orthod Den- tofacial Orthop. 2016;149(3):308-318.	2016	125
Miniscrews in orthodontic treat- ment: Review and analysis of pub- lished clinical trials	Crismani, AG; Bertl, MH; Celar, AG; Bantleon, HP; Burstone, CJ	Am J Orthod Den- tofacial Orthop. 2010;137(1):108-113.	2010	120
Medication effects on the rate of orthodontic tooth movement: A systematic literature review	Bartzela, T; Tuerp, JC; Motschall, E; Maltha, JC	Am J Orthod Dentofacial Orthop. 2009;135(1):16- 26.	2009	119
Retention procedures for stabilis- ing tooth position after treatment with orthodontic braces	Littlewood, SJ; Millett, DT; Doubleday, B; Bearn, DR; Worthington, HV	Cochrane Data- base Syst Rev. 2016;2016(1):CD002283.	2016	117
Stability of treatment for anterior open-bite malocclusion: A meta-analysis	Greenlee, GM; Huang, GJ; Chen, SSH; Chen, JD; Koepsell, T; Hujoel, P	Am J Orthod Den- tofacial Orthop. 2011;139(2):154-169.	2011	114
Accuracy, reliability, and efficiency of intraoral scanners for full-arch impressions: a systematic review of the clinical evidence	Goracci, C; Franchi, L; Vi- chi, A; Ferrari, M	Eur J Orthod. 2016;38(4):422-428.	2015	112
The orthodontic-periodontic interrelationship in integrated treatment challenges: a systematic review	Gkantidis, N; Christou, P; Topouzelis, N	J Oral Rehabil. 2010;37(5):377-390.	2010	112
Critical factors for the success of orthodontic mini-implants: A systematic review	Chen, Y; Kyung, HM; Zhao, WT; Yu, WJ	Am J Orthod Den- tofacial Orthop. 2009;135(3):284-291.	2009	112

**Table 1: (continuation)** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

Title	Authors	Reference	Year	Times cited, WoS core
Diagnostic accuracy and measure- ment sensitivity of digital models for orthodontic purposes: A sys- tematic review	Rossini, G; Parrini, S; Cas- troflorio, T; Deregibus, A; Debernardi, CL	Am J Orthod Den- tofacial Orthop. 2016;149(2):161-170.	2016	109
Interventions for accelerating orthodontic tooth movement A systematic review	Long, H; Pyakurel, U; Wang, Y; Liao, LN; Zhou, Y; Lai, WL	Angle Orthod. 2013;83(1):164-171.	2013	107
TMD in relation to malocclusion and orthodontic treatment - A systematic review	Mohlin, B; Axelsson, S; Paulin, G; Pietila, T; Bon- demark, L; Brattstrom, V; Hansen, K; Holm, AK	Angle Orthod. 2007;77(3):542-548.	2007	107
Validity and reliability of intraoral scanners compared to conventional gypsum models measurements: a systematic review	Aragon, MLC; Pontes, LF; Bichara, LM; Flores-Mir, C; Normando, D	Eur J Orthod. 2016;38(4):429-434.	2016	106
Cephalometric landmarks identification and reproducibility: A meta analysis	Trpkova, B; Major, P; Prasad, N; Nebbe, B	Am J Orthod Den- tofacial Orthop. 1997;112(2):165-170.	1997	104
Assessment of lateral cephalometric diagnosis of adenoid hypertrophy and posterior upper airway obstruction: A systematic review	Major, MP; Flores-Mir, C; Major, PW	Am J Orthod Den- tofacial Orthop. 2006;130(6):700-708.	2006	103
Clinical effectiveness of Invisalign (R) orthodontic treatment: a systematic review	Papadimitriou, A; Mou- soulea, S; Gkantidis, N; Kloukos, D	Prog Orthod. 2018;19(1):37.	2018	101
Cytokines in crevicular fluid and orthodontic tooth movement	Ren, YJ; Vissink, A	Eur J Oral Sci. 2008;116(2):89-97.	2008	99
Self-Ligating Brackets in Ortho- dontics A Systematic Review	Fleming, PS; Johal, A	Angle Orthod. 2010;80(3):575-584.	2010	98
Systematic review of self-ligating brackets	Chen, SSH; Greenlee, GM; Kim, JE; Smith, CL; Huang, GJ	Am J Orthod Den- tofacial Orthop. 2010;137(6):726.e1-727.	2010	96
Treatment effects of fixed func- tional appliances in patients with Class II malocclusion: a systematic review and meta-analysis	Zymperdikas, VF; Koretsi, V; Papageorgiou, SN; Pap- adopoulos, MA	Eur J Orthod. 2016;38(2):113-126.	2015	95
Treatment effects of removable functional appliances in patients with Class II malocclusion: a systematic review and meta-analysis	Koretsi, V; Zymperdikas, VF; Papageorgiou, SN; Papadopoulos, MA	Eur J Orthod. 2015;37(4):418-434.	2014	93
Correction of Class II malocclusion with Class II elastics: A systematic review	Janson, G; Sathler, R; Fernandes, TMF; Branco, NCC; de Freitas, MR	Am J Orthod Den- tofacial Orthop. 2013;143(3):383-392.	2013	89
The treatment effects of invisalign orthodontic aligners - A systematic review	Lagravere, MO; Flores-Mir, C	J Am Dent Assoc. 2005;136(12):1724- 1729.	2005	89

**Table 1: (continuation)** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

Title	Authors	Reference	Year	Times cited, WoS core
Systematic review of the experi- mental use of temporary skeletal anchorage devices in orthodontics	Cornelis, MA; Scheffler, NR; De Clerck, HJ; Tulloch, JFC; Nyssen-Behets, C	Am J Orthod Dentofa- cial Orthop. 2007;131(4 Suppl):S52-S58.	2007	87
A meta-analysis of mandibular in- tercanine width in treatment and postretention	Burke, SP; Silveira, AM; Goldsmith, LJ; Yancey, JM; Van Stewart, A; Scarfe, WC	Angle Orthod. 1998;68(1):53-60.	1998	87
Periodontal health during clear aligners treatment: a systematic review	Rossini, G; Parrini, S; Cas- troflorio, T; Deregibus, A; Debernardi, CL	Eur J Orthod. 2015;37(5):539-543.	2014	82
Efficiency, effectiveness and treat- ment stability of clear aligners: A systematic review and meta-anal- ysis	Zheng, M; Liu, R; Ni, Z; Yu, Z	Orthod Craniofac Res. 2017;20(3):127-133.	2017	81
Rapid Maxillary Expansion for Pediatric Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis	Camacho, M; Chang, ET; Song, SJA; Abdullatif, J; Zaghi, S; Pirelli, P; Certal, V; Guilleminault, C	Laryngoscope. 2017;127(7):1712-1719.	2016	81
Does rapid maxillary expansion have long-term effects on airway dimensions and breathing?	Baratieri, C; Alves, M; de Souza, MMG; Araujo, MTD; Maia, LC	Am J Orthod Den- tofacial Orthop. 2011;140(2):146-156.	2011	80
Does orthodontic treatment before the age of 18 years improve oral health-related quality of life? A systematic review and meta-analysis	Javidi, H; Vettore, M; Ben- son, PE	Am J Orthod Den- tofacial Orthop. 2017;151(4):644-655.	2017	79
Effectiveness of clear aligner ther- apy for orthodontic treatment: A systematic review	Robertson, L; Kaur, H; Fa- gundes, NCF; Romanyk, D; Major, P; Mir, CF	Orthod Craniofac Res. 2020;23(2):133-142.	2020	77
Orthodontics and temporomandibular disorder: A meta-analysis	Kim, MR; Graber, TM; Vi- ana, MA	Am J Orthod Dento- facial Orthop.2002 May;121(5):438-46.	2002	77
Factors associated with patient and parent satisfaction after orthodontic treatment: A systematic review	Pacheco-Pereira, C; Perei- ra, JR; Dick, BD; Perez, A; Flores-Mir, C	Am J Orthod Den- tofacial Orthop. 2015;148(4):652-9	2015	76
Evidence supporting the use of cone-beam computed tomography in orthodontics	van Vlijmen, OJC; Kuijpers, MAR; Berge, SJ; Schols, JGJH; Maal, TJJ; Breuning, H; Kuijpers-Jagtman, AM	J Am Dent Assoc.2012 Mar;143(3):241-52	2012	76
A systematic review of the effica- cy of oral appliance design in the management of obstructive sleep apnoea	Ahrens, A; McGrath, C; Hagg, U	Eur J Orthod,2011 Jun;33(3):318-24.	2011	74
Efficacy of orthopedic treatment with protraction facemask on skeletal Class III malocclusion: a systematic review and meta-analysis	Cordasco, G; Matarese, G; Rustico, L; Fastuca, S; Caprioglio, A; Lindauer, SJ; Nucera, R	Orthod Craniofac Res. 2014 Aug;17(3):133-43	2014	73

**Table 1: (continuation)** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

Title	Authors	Reference	Year	Times cited, WoS core
Influence of orthodontic treat- ment, midline position, buccal corridor and smile arc on smile attractiveness A systematic review	Janson, G; Branco, NC; Fernandes, TMF; Sathler, R; Garib, D; Lauris, JRP	Angle Orthod. 2011 Jan;81(1):153-61	2011	71
A comparison of treatment effec- tiveness between clear aligner and fixed appliance therapies	Ke, YY; Zhu, YF; Zhu, M	BMC Oral Health. 2019 Jan 23;19(1):24	2019	69
Effectiveness of non-conventional methods for accelerated orthodontic tooth movement: A systematic review and meta-analysis	Gkantidis, N; Mistakidis, I; Kouskoura, T; Pandis, N	J Dent. 2014 Oct;42(10):1300-19	2014	69
Compliance with removable orthodontic appliances and adjuncts: A systematic review and meta-analysis	Al-Moghrabi, D; Salazar, FC; Pandis, N; Fleming, PS	Am J Orthod Dento- facial Orthop . 2017 Jul;152(1):17-32.	2017	68
Surgically facilitated orthodontic treatment: A systematic review	Hoogeveen, EJ; Jansma, J; Ren, Y	Am J Orthod Dentofacial Orthop. 2014 Apr;145(4 Suppl):S51-64.	2014	68
Interventions for orthodontically induced white spot lesions: a systematic review and meta-analysis	Hochli, D; Hersberger-Zur- fluh, M; Papageorgiou, SN; Eliades, T	Eur J Orthod. 2017 Apr 1;39(2):122-133	2017	67
Effectiveness of orthodontic miniscrew implants in anchorage reinforcement during en-masse retraction: A systematic review and meta-analysis	Antoszewska-Smith, J; Sa- rul, M; Lyczek, J; Konopka, T; Kawala, B	Am J Orthod Dento- facial Orthop . 2017 Mar;151(3):440-455.	2017	65
Effectiveness of minimally invasive surgical procedures in the acceleration of tooth movement: a systematic review and meta-analysis	Alfawal, AMH; Hajeer, MY; Ajaj, MA; Hamadah, O; Brad, B	Prog Orthod. 2016 Dec;17(1):33	2016	64
Orthodontics for treating tem- poromandibular joint (TMJ) disor- ders	Luther, F; Layton, S; Mc- Donald, F	Cochrane Database Syst Rev. 2010 Jul 7;(7):CD006541	2010	64
Early orthodontic treatment for Class III malocclusion: A systematic review and meta-analysis	Woon, SC; Thiruven- katachari, B	Am J Orthod Dento- facial Orthop . 2017 Jan;151(1):28-52	2017	63
Orthodontics treatments for managing obstructive sleep apnea syndrome in children: A systematic review and meta-analysis	Huynh, NT; Desplats, E; Almeida, FR	Sleep Med Rev . 2016 Feb;25:84-94	2016	63
Effects of rapid maxillary expansion on the midpalatal suture: a systematic review	Liu, SY; Xu, TM; Zou, W	Eur J Orthod . 2015 Dec;37(6):651-5	2015	63

**Table 1: (continuation)** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

Title	Authors	Reference	Year	Times cited, WoS core
Do orthodontic research out- comes reflect patient values? A systematic review of randomized controlled trials involving children	Tsichlaki, A; OʻBrien, K	Am J Orthod Dento- facial Orthop . 2014 Sep;146(3):279-85.	2014	63
The impact of orthodontic treat- ment on the quality of life a sys- tematic review	Zhou, Y; Wang, Y; Wang, XY; Voliere, G; Hu, RD	BMC Oral Health. 2014 Jun 10;14:66	2014	63
A systematic review of the accura- cy and efficiency of dental move- ments with Invisalign (R)	Galan-Lopez, L; Bar- cia-Gonzalez, J; Plasencia, E	Korean J Orthod. 2019 May; 49(3): 140–149	2019	62
In-vitro orthodontic bond strength testing: A systematic review and meta-analysis	Finnema, KJ; Ozcan, M; Post, WJ; Ren, YJ; Dijkstra, PU	Am J Orthod Dento- facial Orthop . 2010 May;137(5):615-622.e3	2010	62
Available Technologies, Applications and Benefits of Teleorthodontics. A Literature Review and Possible Applications during the COVID-19 Pandemic	Maspero, C; Abate, A; Cavagnetto, D; El Morsi, M; Fama, A; Farronato, M	J Clin Med . 2020 Jun 17;9(6):1891.	2020	60
Insertion torque and success of orthodontic mini-implants: A systematic review	Reynders, RAM; Ronchi, L; Ladu, L; van Etten-Jamalu- din, F; Bipat, S	Am J Orthod Dento- facial Orthop . 2012 Nov;142(5):596-614.e5	2012	60
Effectiveness of orthodontic treat- ment with functional appliances on mandibular growth in the short term	Marsico, E; Gatto, E; Bur- rascano, M; Matarese, G; Cordasco, G	Am J Orthod Dento- facial Orthop . 2011 Jan;139(1):24-36	2011	59
Corticotomies and Orthodontic Tooth Movement: A Systematic Review	Patterson, BM; Dalci, O; Darendeliler, MA; Papado- poulou, AK	J Oral Maxillofac Surg . 2016 Mar;74(3):453-73.	2016	57
Bone age assessment with various machine learning techniques: A systematic literature review and meta-analysis	Dallora, AL; Anderberg, P; Kvist, O; Mendes, E; Ruiz, SD; Berglund, JS	Plos one :2019 Jul 25;14(7):e0220242.	2019	55
Comparison of vacuum-formed and Hawley retainers: A systematic review	Mai, WJ; He, JA; Meng, HY; Jiang, YP; Huang, CX; Li, M; Yuan, K; Kang, N	Am J Orthod Den- tofacial Ortho 2014 Jun;145(6):720-7.	2014	55
Treatment outcome with ortho- dontic aligners and fixed appli- ances: a systematic review with meta-analyses	Papageorgiou, SN; Koletsi, D; Iliadi, A; Peltomaki, T; Eliades, T	Eur J Orthod : 2020 Jun 23;42(3):331-343	2019	54
Effect of remineralizing agents on white spot lesions after orthodontic treatment: A systematic review	Chen, H; Liu, XG; Dai, J; Jiang, ZW; Guo, T; Ding, Y	Am J Orthod Dento- facial Orthop : 2013 Mar;143(3):376-382.e3.	2013	54
Effects of malocclusions and or- thodontics on periodontal health: Evidence from a systematic review	Bollen, AM	J Am Dent Assoc 2008 Apr;139(4):413-22.	2008	54

**Table 1: (continuation)** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

Title	Authors	Reference	Year	Times cited, WoS core
Laypeople's perceptions of fron- tal smile esthetics: A systematic review	Parrini, S; Rossini, G; Castroflorio, T; Fortini, A; Deregibus, A; Deber- nardie, C	Am J Orthod Dento- facial Orthop : 2016 Nov;150(5):740-750	2016	53
Determinants for success rates of temporary anchorage devices in orthodontics: a meta-analysis (n > 50)	Dalessandri, D; Salgar- ello, S; Dalessandri, M; Lazzaroni, E; Piancino, M; Paganelli, C; Maiorana, C; Santoro, F	Eur J Orthod : 2014 Jun;36(3):303-13	2013	52
The effects of fixed and removable orthodontic retainers: a systematic review	Al-Moghrabi, D; Pandis, N; Fleming, PS	Prog Orthod : 2016 Dec;17(1):24	2016	51
Intra-arch dimensional measure- ment validity of laser-scanned digital dental models compared with the original plaster models: a systematic review	Canto, GD; Pacheco-Perei- ra, C; Lagravere, MO; Flores-Mir, C; Major, PW	Orthod Craniofac Res 2015 May;18(2):65-76	2014	51
Three-dimensional cephalometric analysis in orthodontics: a systematic review	Pittayapat, P; Limchaicha- na-Bolstad, N; Willems, G; Jacobs, R	Orthod Craniofac Res 2014 May;17(2):69-91	2014	51
Lingual vs. labial fixed orthodontic appliances: systematic review and meta-analysis of treatment effects	Papageorgiou, SN; Golz, L; Jager, A; Eliades, T; Bourauel, C	Eur J Oral Sci 2016 Apr;124(2):105-18.	2016	50
Efficacy of professional hygiene and prophylaxis on preventing plaque increase in orthodontic patients with multibracket appliances: a systematic review	Migliorati, M; Isaia, L; Cassaro, A; Rivetti, A; Silvestrini-Biavati, F; Gastaldo, L; Piccardo, I; Dalessandri, D; Silvestrini-Biavati, A	Eur J Orthod 2015 Jun;37(3):297-307	2014	50
Management of post-orthodontic white spot lesions: an updated systematic review	Sonesson, M; Bergstrand, F; Gizani, S; Twetman, S	Eur J Orthod. 2017 Apr 1;39(2):116-121.	2017	49
Intraoral distalizer effects with conventional and skeletal anchorage: A meta-analysis	Grec, RHD; Janson, G; Branco, NC; Moura-Grec, PG; Patel, MP; Henriques, JFC	Am J Orthod Dento- facial Orthop 2013 May;143(5):602-15.	2013	49
Bisphenol-A and residual mono- mer leaching from orthodontic ad- hesive resins and polycarbonate brackets: A systematic review	Kloukos, D; Pandis, N; Eliades, T	Am J Orthod Dentofacial Orthop 2013 Apr;143(4 Suppl):S104-12.e1-2.	2013	49
CBCT in orthodontics: a systematic review on justification of CBCT in a paediatric population prior to orthodontic treatment	De Grauwe, A; Ayaz, I; Shujaat, S; Dimitrov, S; Gbadegbegnon, L; Vande Vannet, B; Jacobs, R	Eur J Orthod 2019 Aug 8;41(4):381-389	2018	48
Miniscrews failure rate in ortho- dontics: systematic review and meta-analysis	Alharbi, F; Almuzian, M; Bearn, D	Eur J Orthod 2018 Sep 28;40(5):519-530.	2018	48

**Table 1: (continuation)** Top 100 cited Systematic Review and Meta-analysis in Orthodontics.

Title	Authors	Reference	Year	Times cited, WoS core
Systematic review for orthodontic and orthopedic treatments for anterior open bite in the mixed dentition	Pisani, L; Bonaccorso, L; Fastuca, R; Spena, R; Lom- bardo, L; Caprioglio, A	Prog Orthod 2016 Dec;17(1):28.	2016	48
Anterior cranial-base time-related changes: A systematic review	Afrand, M; Ling, CP; Khos- rotehrani, S; Flores-Mir, C; Lagravere-Vich, MO	Am J Orthod Dento- facial Orthop 2014 Jul;146(1):21-32.e6.	2014	48
Clinical effects of pre-adjusted edgewise orthodontic brackets: a systematic review and meta-analysis	Papageorgiou, SN; Kon- stantinidis, I; Papadopou- lou, K; Jager, A; Bourauel, C	Eur J Orthod 2014 Jun;36(3):350-63	2013	48
Orthodontic treatment for prom- inent upper front teeth (Class II malocclusion) in children	Thiruvenkatachari, B; Har- rison, JE; Worthington, HV; O'Brien, KD	Cochrane Database Syst Rev 2013 Nov 13;(11):CD003452	2014	48
Role of anatomical sites and cor- related risk factors on the sur- vival of orthodontic miniscrew implants: a systematic review and meta-analysis	Mohammed, H; Wafaie, K; Rizk, MZ; Almuzian, M; Sosly, R; Bearn, DR	Prog Orthod 2018 Sep 24;19(1):36.	2018	47
Surgical adjunctive procedures for accelerating orthodontic treatment	Fleming, PS; Fedorowicz, Z; Johal, A; El-Angbawi, A; Pandis, N	Cochrane Database Syst Rev 2015 Jun 30;2015(6):CD010572.	2016	46
The effect of topical fluorides on decalcification in patients with fixed orthodontic appliances: A systematic review	Chadwick, BL; Roy, J; Knox, J; Treasure, ET	Am J Orthod Den- tofacial Orthop. 2005;128(5):601-6.	2005	46
Orthodontic treatment for posteri- or crossbites	Agostino, P; Ugolini, A; Si- gnori, A; Silvestrini-Biavati, A; Harrison, JE; Riley, P	Cochrane Database Syst Rev. 2014 Aug 8;(8):CD000979.	2014	45
Comparison of adverse effects be- tween lingual and labial orthodon- tic treatment A systematic review	Long, H; Zhou, Y; Pyakurel, U; Liao, LN; Jian, F; Xue, JJ; Ye, NS; Yang, X; Wang, Y; Lai, WL	Angle Orthod 2013 Nov;83(6):1066-73.	2013	45

#### **JOURNAL CHARACTERISTICS**

The top-cited articles were published in 20 different scientific journals (Table 2). Among these, were six journals specialized in Orthodontics, which collectively published more than three-fourths of the publications (n=78) of the entire lot. The maximum number of articles (n=38) were published in AJODO (IF=3), with a total citation of 3,811. Of these, 23 were SR, 4 were MA, and the rest were SR with MA. There were notable publications in the AJODO in 2013 (n=5). Meanwhile, the Angle Orthodontist had the highest citation/article ratio (131.13). The least cited article among the top 100 was published in the Journal of Dental Education (IF=2.3). The IF of the journals ranged from 1.9 to 10.5 (3.4  $\pm$  1.4, median = 3).

#### **AUTHOR CHARACTERISTICS**

The top 100 cited articles were co-authored by 351 authors from different countries and universities. Publications with more than five authors were the most common (n=58) (Supplementary table). Sixty-two authors have contributed to two or more articles (Table 3). The number of authors for individual papers ranged from 1 to 10. Kuijpers-Jagtman AM, from Radboud University Nijmegen (The Netherlands), had the highest number of individual citations (n=660), from four research papers.

**Table 2:** The 20 journals in which the top 100 cited articles published.

N°	Journal title	ISSN	Journal impact factor	Number of articles	Systematic reviews(SR)	Me- ta-anal- ysis (MA)	SR with MA	Total cita- tions	Cita- tion/ Article
1	American Journal of Orthodontics and Den- tofacial Orthopedics	0889-5406	3	38	23	4	11	3811	100.29
2	European Journal of Orthodontics	0141-5387	2.6	18	11	1	6	1489	82.72
3	Angle Orthodontist	0003-3219	3.4	8	4	1	3	1049	131.13
4	Orthodontics & Cra- niofacial Research	1601-6335	3.1	8	5	-	3	861	107.63
5	Cochrane Database of Systematic Reviews	1469-493X	8.4	5	2	-	3	320	64.00
6	Progress in Orthodon- tics	2196-1042	4.8	5	2	-	3	311	62.20
7	Journal of The American Dental Association	0002-8177	3.9	3	3	-	-	334	111.33
8	European Journal Of Oral Sciences	0909-8836	1.9	2	1	-	1	149	74.50
9	BMC Oral Health	1472-6831	2.9	2	1	-	1	132	66
10	International Journal of Oral and Maxillofa- cial Surgery	0901-5027	2.4	1	1	-	-	188	188
11	Caries Research	0008-6568	3.9	1	1	-	-	139	139
12	Journal of Oral Reha- bilitation	0305-182X	2.9	1	1	-	-	112	112
13	Laryngoscope	0023-852X	2.6	1	-	-	1	81	81
14	Journal of Dentistry	0300-5712	4.4	1	-	-	1	69	69
15	Sleep Medicine Re- views	1087-0792	10.5	1	-	-	1	63	63
16	Korean Journal of Or- thodontics	2234-7518	1.9	1	1	-	-	62	62
17	Journal of Clinical Med- icine		3.9	1	1	-	-	60	60
18	Journal of Oral and Maxillofacial Surgery	0278-2391	1.9	1	1	-	-	57	57
19	PLOS One	1932-6203	3.7	1	-	-	1	55	55
20	Journal of Dental Edu- cation	0022-0337	2.3	1	1	-	-	54	54

**Table 3:** The top-cited authors with two or more publications.

	•			•			
N°	Author name	Affiliation	Country	Number of articles	Number of articles as first author	Number of articles as corre- sponding author	Total number of citations
1	Kuijpers-Jagtman, AM	Radboud Universi- ty Nijmegen	The Neth- erlands	4	-	-	660
2	Fleming, PS	Queen Mary Uni- versity of London	United Kingdom	6	3	4	607
3	Papageorgiou, SN	University of Bonn	Germany	7	4	2	597
4	Flores-Mir, C	University of Al- berta	Canada	7	2		550
5	Castroflorio, T	University of Turin	Italy	4	-	-	521
6	Debernardi, CL	University of Turin	Italy	4	-	-	521
7	Deregibus, A	University of Turin	Italy	4	-	-	521
8	Parrini, S	University of Turin	Italy	4	-	-	521
9	Rossini, G	University of Turin	Italy	4	3	3	521
10	Ren, Y	University of Gron- ingen	The Neth- erlands	4	2	2	486
11	Pandis, N	University of Bern	Switzerland	6	-	-	408
12	Huang, GJ	University of Washington	United States	3	-	-	379
13	Maltha, JC	Radboud Universi- ty Nijmegen	The Neth- erlands	2	-	-	376
14	Johal, A	Queen Mary Uni- versity of London	United Kingdom	3	-	-	363
15	Major, PW	University of Al- berta	Canada	4	-	-	335
16	Franchi, L	University of Flor- ence	Italy	2	-	-	310
17	Katsaros, C	Radboud Universi- ty Nijmegen	The Neth- erlands	2	-	-	289
18	Papadopoulos, MA	Aristotle University of Thessaloniki	Greece	3	-	3	285
19	Hujoel, P	University of Washington	United States	2	-	-	283
20	Bondemark, L	Malmo University	Sweden	2	-	-	274
21	Graber, TM	University of Illi- nois	United States	2	-	-	268
22	Viana, MA	University of Illi- nois	United States	2	-	-	268
23	Berge, SJ	Radboud Universi- ty Nijmegen	The Neth- erlands	2	-	-	264
24	Maal, TJJ	Radboud Universi- ty Nijmegen	The Neth- erlands	2	-	-	264

**Table 3: (Continuation)** The top-cited authors with two or more publications

N°	Author name	Affiliation	Country	Number of articles	Number of articles as first author	Number of articles as corre- sponding author	Total number of citations
25	Topouzelis, N	Aristotle University of Thessaloniki	Greece	2	-	-	262
26	Bollen, AM	University of Washington	United States	2	2	2	223
27	Eliades, T	University of Zu- rich	Switzerland	4	-	3	220
28	Gkantidis, N	University of Bern	Switzerland	3	2	-	213
29	Bearn, D	University of Dundee	United Kingdom	3	-	-	212
30	Chen, SSH	University of Washington	United States	2	-	-	210
31	Greenlee, GM	University of Washington	United States	2	-	-	210
32	Branco, NC	University of Sao Paulo	Brazil	3	-	-	209
33	Janson, G	University of Sao Paulo	Brazil	3	2	2	209
34	Bipat, S	University of Am- sterdam	The Neth- erlands	2	-	-	199
35	Reynders, R	Private practice	Italy	2	-	2	199
36	Ronchi, L	University of Am- sterdam	The Neth- erlands	2	-	-	199
37	Koretsi, V	University of Re- gensburg	Greece	2	-	-	188
38	Lagravere, MO	University of Al- berta	Canada	3	-	-	188
39	Tsichlaki, A	Queen Mary Uni- versity of London	United Kingdom	2	-	-	188
40	Zymperdikas, VF	Dental Unit,71st Airmobile Brigade	Greece	2	-	-	188
41	Worthington, HV	University of Man- chester	United Kingdom	2	-	-	165
42	Fernandes, TMF	University of Sao Paulo	Brazil	2	-	-	160
43	Sathler, R	University of Sao Paulo	Brazil	2	-	-	160
44	Wang, Y	Sichuan University	China	2	-	-	152
45	Zhou, Y	Sichuan University	China	2	-	-	152
46	Lai, WL	Sichuan University	China	2	-	2	152
47	Liao, LN	Sichuan University	China	2	-	-	152
48	Long, H	Sichuan University	China	2	2	-	152

**Table 3: (Continuation)** The top-cited authors with two or more publications

N°	Author name	Affiliation	Country	Number of articles	Number of articles as first author	Number of articles as corre- sponding author	Total number of citations
49	Pyakurel, U	Sichuan University	China	2	-	-	152
50	Kloukos, D	University of Bern	Switzerland	2	-	-	150
51	Cordasco, G	University of Mes- sina	Italy	2	-	-	132
52	Pacheco-Pereira, C	University of Al- berta	Canada	2	-	-	127
53	Caprioglio, A	University of In- subria	Italy	2	-	-	121
54	Al-Moghrabi, D	Queen Mary Uni- versity of London	United Kingdom	2	2	2	119
55	O'Brien, K	University of Man- chester	United Kingdom	2	-	-	111
56	Thiruvenkatacha- ri, B	University of Man- chester	United Kingdom	2	-	2	111
57	Dalessandri, D	University of Bres- cia	Italy	2	-	-	102
58	Jacobs, R	University of Leu- ven	Belgium	2	-	-	99
59	Bourauel, C	University of Bonn	Germany	2	-	-	98
60	Jager, A	University of Bonn	Germany	2	-	-	98
61	Almuzian, M	University of Leu- ven	Belgium	2	-	-	95
62	Silvestrini-Biavati, A	University of Ge- noa	Italy	2	-	-	95

Individually, Papageorgiou SN and Flores-Mir C, affiliated with the University of Bonn (Germany) and the University of Alberta (Canada), respectively, co-authored a maximum of seven papers. In addition, Papageorgiou SN contributed to a maximum number of four articles as a first author. Similarly, Fleming PS, affiliated with the Queen Mary University of London (United Kingdom), had a maximum of four articles as the corresponding author.

#### **AUTHOR AFFILIATION AND COUNTRY**

Among 104 universities associated with these top-cited articles, 33 were affiliated with two or more articles (Table 4). The highest number of individual citations (n=929) was by Radboud University Nijmegen (The Netherlands). The Aristotle University of Thessaloniki (Greece), the University of Bern (Switzerland), and the University of Alberta (Canada) contributed with eight articles each.

Based on the article's corresponding author's origin, these publications came from 19 countries. Figure 3 (World map, Microsoft Office 365, Microsoft Corporation, Redmond, Washington, USA) depicts the distribution of corresponding authors and citation analysis. The maximum number of citations (n=1372) contributed by corresponding authors belonged to Italy, from 14 research articles. However, the United Kingdom published the maximum number of articles (n=15) with a citation of 1179. In addition, 62 corresponding authors with two or more of the top cited articles were from 12 countries from the European continent.

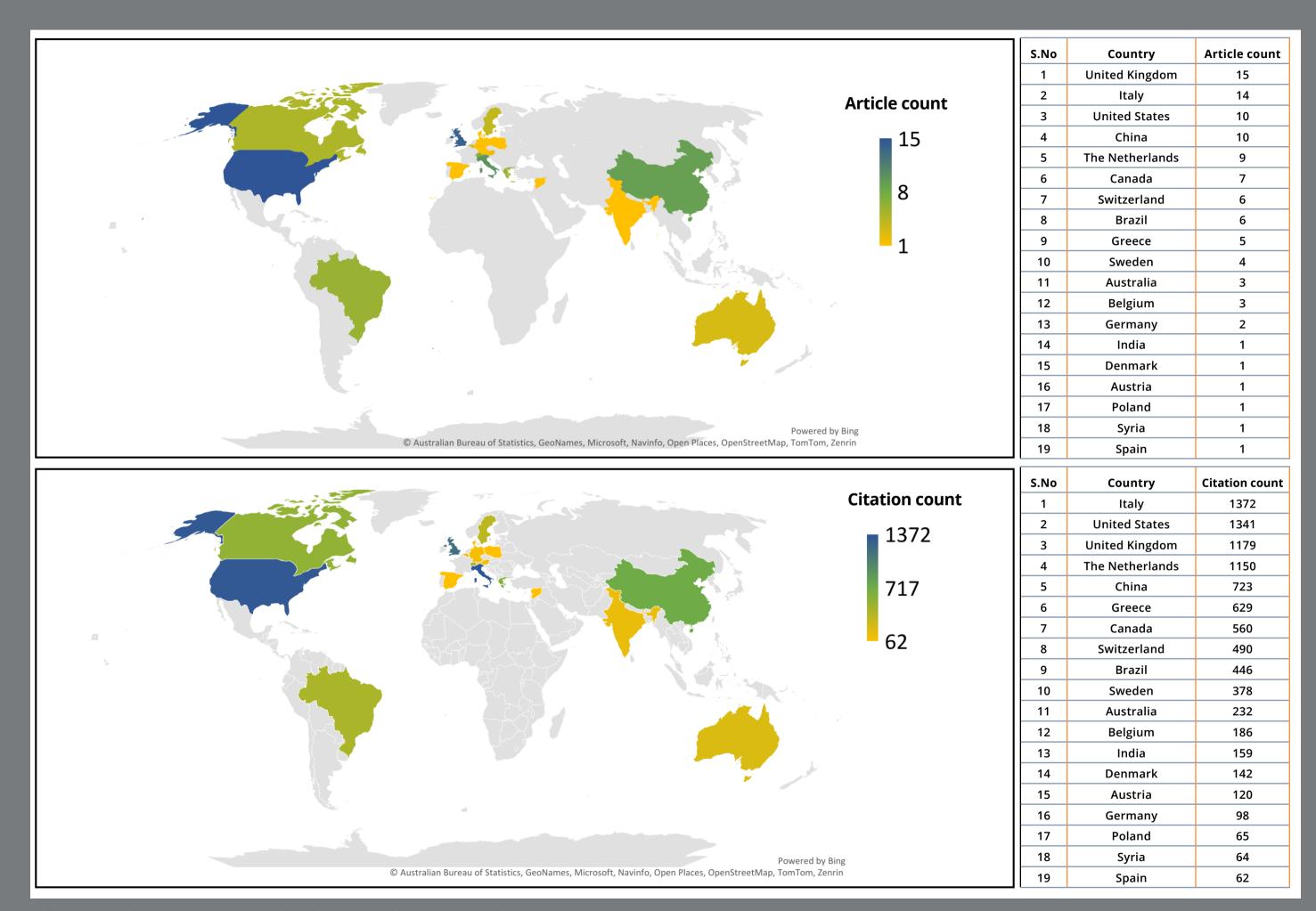


Figure 3: The country-wise distribution of corresponding authors and citations among the top 100 cited articles.

**Table 4:** The top 33 universities with two or more articles.

N°	Affiliation/University	Country	Number of articles	Number of citations		
1	Radboud University Nijmegen	The Netherlands	6	929		
2	Aristotle University of Thessaloniki	Greece	8	905		
3	University of Bern	Switzerland	8	659		
4	University of Alberta	Canada	8	654		
5	University of Turin	Italy	6	623		
6	Queen Mary University of London	6	607			
7	University of Bonn	6	543			
8	University of Washington	United States	4	433		
9	University of São Paulo	Brazil	4	351		
10	University of Amsterdam	The Netherlands	3	341		
11	Malmo University	Sweden	3	323		
12	University of Florence	Italy	2	310		
13	University of Manchester	United Kingdom	4	291		
14	University of Zurich	Switzerland	5	282		
15	University of Rome Tor Vergata	Italy	2	279		
16	Catholic University of Korea	South Korea	2	268		
17	University of Illinois	United States	2	268		
18	University of Dundee	United Kingdom	4	258		
19	University of Sydney	Australia	3	232		
20	University of Groningen	The Netherlands	3	229		
21	National & Kapodistrian University of Athens	Greece	3	215		
22	University of Regensburg	Germany	2	188		
23	Sichuan University	China	2	152		
24	Wenzhou Medical University	China	2	144		
25	University of Messina	Italy	2	132		
26	University of Insubria	Italy	2	121		
27	University of Geneva	Switzerland	2	116		
28	University of Milan	Italy	2	112		
29	Karolinska Institute	Sweden	2	103		
30	University of Brescia	Italy	2	102		
31	University of Leuven	Belgium	2	99		
32	University of Genoa	Italy	2	95		
33	Liverpool University	United Kingdom	2	93		

#### **STUDY DOMAIN**

There was a wide distribution of articles based on research domains in Orthodontics. A total of 21 domains were discussed among the top 100 cited systematic reviews and meta-analyses (Table 5). The most focused domains were orthodontic tooth movement (OTM) / biomechanics (11 articles, 1150 citations) and bone anchorage (11 articles, 969 citations). This was followed by digital Orthodontics, Class II management with functional appliances, and Aligners.

The top five cited articles were mostly related to root resorption (n=344), clear aligners (n=277), OTM (n=257), digital study models (n=219), and functional appliances (n=198). With the recent advances in digital Orthodontics, aligners, and fixed functional appliances, the volume of research with citations has increased significantly. Domains like dental trauma, vertical discrepancy, and bonding and bracket removal presented least number of articles with citations. Citation analysis of journals regarding the domain bone anchorage/mini-implant (n=9) showed that these articles were most commonly published in AJODO from 2007 to 2017 (Supplementary Table).

#### **KEYWORDS**

There were 212 unique keywords provided by 40 research papers in the lot. The most frequent were Orthodontics (n=19), Systematic review (n=16) and Meta-analysis (n=9). Details of keywords used thrice or more are presented in Table 6.

**Table 5:** Distribution of articles, based on research domains.

N°	Domain	Number of articles	Total citation
1	Orthodontic tooth movement/Biomechanics	11	1150
2	Bone anchorage	11	969
3	Digital orthodontics	6	785
4	Class II fixed or removable functional appliances	7	741
5	Aligners	7	729
6	Stability and relapse/retention/fixed and removable retainers	7	573
7	Psychological and psychosocial aspects in patients	7	572
8	Orthodontic-periodontal consideration	5	567
9	Upper airways and sleep apnea	5	495
10	Root resorption	2	486
11	Bracket design, friction, self-ligating	5	337
12	Imaging/Cephalometrics/CBCT	5	327
13	Class III Orthopedics	3	327
14	Transverse discrepancy/Maxillary expansion	4	269
15	TMJ and craniomandibular dysfunction	3	248
16	Demineralization, White Spot lesion	4	216
17	Preventive measure	2	189
18	Others: Adhesive resins	3	164
19	Dental trauma	1	142
20	Bonding and bracket removal	1	62
21	Vertical discrepancy	1	48

**Table 6:** Most commonly used Keywords in the top 100 cited articles.

N°	Keywords	Number of times
1	Orthodontics	19
2	Systematic review	16
3	Meta-analysis	9
4	Clear aligner	6
5	Treatment outcome	6
6	Periodontal	5
7	Child	4
8	Human study	4
9	Invisalign	4
10	Malocclusion	4
11	Orthodontic retainer	4
12	Corticotomy	3
13	Fixed appliance	3
14	Orthodontic appliances	3
15	Orthodontics, Corrective [methods]	3
16	Randomized Controlled Trials as topic	3
17	Review	3

### **DISCUSSION**

Citation metric is a popular quantitative measure of the impact of a research article in a particular domain. Bibliometric studies analyzing various aspects of this metric and its associated factors have been a common practice in many specialties of Dentistry. In Orthodontics, scientific mapping has been conducted in many areas, like Lingual Orthodontics,<sup>8</sup> TAD,<sup>9</sup> Orthognathic Surgery,<sup>12</sup> and Artificial Intelligence.<sup>13</sup> However, bibliometric studies on level one evidence articles are unavailable; to the best of our knowledge, this is the first in this regard.

Overall, the articles covered 21 subject domains. Orthodontic tooth movement/Biomechanics topped the list, with 1150 citations from 11 articles. This finding is not surprising, as this is a fundamental domain for the practice of Orthodontics. Three of the top five domains were related to recent evolutions in Orthodontics: Bone anchorage, Digital orthodontics, and Aligners. As recent advances in any field exhibit a higher knowledge gap, evoke more interest, and instigate more research and publications, it is natural to note increasing citations of seminal publications in the domain. Among individual articles, the systematic review on root resorption by Weltman et al., Dublished by AJODO in 2010, topped the number of citations (n=344). This article reported high-quality evidence of risk factors associated with root resorption associated with fixed orthodontics. It should also be noted that

nearly one-fourth of the articles were published in journals not exclusive to the specialty of Orthodontics, highlighting the need to go beyond specialty journals while searching for relevant content.

The scientific literature on Orthodontics is vast, and articles reaching over 100 citations are considered highly impactful and classic. It has been reported that less than 10% of the research papers fulfill the status of classic articles. In larger research fields, articles with more than 400 citations are considered classics. However, the classic citation varies for each field. In the present study, 34 articles had more than 100 citations and could be categorized as classic. This higher proportion is not surprising, since many of these publications pertain to the newer advances in the field, increasing in research and publications, and the tendency for authors to cite preferentially articles with higher levels of evidence.

Time since publication is an essential factor that impacts the citation metrics of an article.<sup>8</sup> Older articles receive more citations than recently published ones, due to the advantage of time and the snowball effect of subsequent related articles referring to older and primary articles.<sup>8,19</sup> Correlating with other studies,<sup>19,20</sup> more cited articles were published after 2010, highlighting the scientific expansion in Orthodontics focused on clinical trials and evidence-based practice. It is important to note that in the Cochrane Database of Systematic Reviews (IF: 8.4), an

internationally recognized evidence-based Medicine journal, a handful of articles (n=5) were published. This might be due to the scarcity of clinical trials in Orthodontics to conduct well-designed MAs.

The IF of a journal is another factor influencing the citation metrics, and accounts for nearly 59% of the citation discrepancy. In this study, top-cited SR and MA citations ranged between 45 and 344, and were published in high impact orthodontic journals. The IF of the journals included in this study ranged from 1.9 to 10.5, with a median of 3. The relationship between IF and the number of citations is bidirectional and mutually beneficial. High IF indicates high repute, visibility, and readership for the journal among peers. This motivates the researchers to select these journals to publish their high-quality research. By virtue of quality, these publications inherently have a high potential for citations and boost the IF further over time.

Countries with better economic rankings are likely to publish the most impactful papers, which may be related to the availability and allocation of resources necessary to undertake such studies.<sup>23</sup> In agreement, 21 out of 100 articles were funded in this study, most of which belonged to developed nations (Supplementary Table). This study showed that 65 of 100 articles were from the top 10 countries in world economic rankings, based on GDP in 2023.<sup>24</sup> Concordant with similar

studies,<sup>4,10,25</sup> the majority of corresponding authors were from Europe (n=62), with the United Kingdom (n=15) and Italy (n=14) being top contributors.

Another noteworthy observation was the number of authors involved with these publications. These top 100 articles were co-authored by 351 authors affiliated with 104 universities. The number of authors per paper varied from 1 to 10, with more than five authors in 58 publications. Further, 53 of 100 were international collaboration or multi-university research papers. These reiterate that collaboration is vital in elevating the impact of articles, and collaborative papers are expected to be more cited.<sup>26</sup>

Keywords of scientific literature define the research field or topic, and enhance the visibility among peer researchers. Therefore, it serves as a code for locating the required article. Therefore, it serves as a code for locating the required article. It is no surprise that the most often used term was Orthodontics, followed by Systematic Review and Meta-analysis, given that this study focuses on SR and MA of orthodontic literature. Interestingly, considering that the maximum number of articles were based on bone anchorage and biomechanics, very few keywords were related to it. Clear Aligners (n=6) and Invisalign (n=4), related to the Aligner domain, were most commonly used. Most journals

require keywords while submitting the manuscript, but it was unusual that many articles were without keywords. Some of the high-impact journals in the field of Orthodontics, like AJODO and the European Journal of Orthodontics (EJO), did not contain keywords (Supplementary Table). On the other hand, AJODO and EJO recorded the highest citation and maximum number of articles (n=56) among the top 100 cited articles.

#### **LIMITATIONS**

Using only Clarivate Analytics Web of Science's (WoS) Science Citation Index (SCI) to identify the top-cited articles is a limitation. WoS gathers information from academic journals, books, book series, reports, and conferences. It provides access to current information and historical data from 1900 onwards for more than 8850 of the world's most renowned academic journals in 150 scientific fields. Other options include the Scopus database, which tracks citations from 1996, which is a downside for considering citation analysis. Similarly, Google Scholar includes books, conference papers, theses, dissertations, unpublished data, and reports, influencing the citation count. However, WoS remains the most significant and widely utilized source database for bibliometric and citation analysis across all academic disciplines.<sup>28-30</sup> The current study may have missed articles published in non-indexed and non-English journals. The number of citations decides the impact and quality of an article; unfortunately, it could be

of error in such bibliometric studies resulting from 'self-citation'<sup>31</sup> and 'journal bias'. The former indicates the authors' tendency to cite their publications, to improve their credentials and journal IF. Journal bias refers to the inclination of the authors to cite papers from the same journal targeted to publish their research.<sup>32,33</sup> Finally, the author's actual affiliations were only considered if multiple institutions were present.

#### CONCLUSION

This descriptive bibliometrics analysis provides scientific evidence mapping of orthodontic literature. The 100 top-cited SR and MA in orthodontics were published from 1996 to 2021, with high-impact orthodontic journals (AJODO, EJO, and Angle Orthodontist) contributing the most. Thirty-four of them had already grossed a hundred citations or more. OTM/biomechanics and Bone anchorage were the trending domains. The articles were often multi-authored and involved collaborative work from different universities. Europe was the most productive in terms of authors and institutions. The findings may be of interest and useful to all prospective authors and synthetic research studies in Orthodontics.

#### **AUTHORS' CONTRIBUTIONS**

Conception or design of the study:

MS, BM

Madhanraj Selvaraj (MS)

Data acquisition, analysis or

Bhaskar Nivethitha (BN)

interpretation:

Piramanayagam Varshitha (PV)

MS, BN, PV, US, BM

Ulaganathan Sangeetha (US)

Writing the article:

Balasubramanian Madhan (BM)

MS, BN, PV, US, BM

*Critical revision of the article:* 

MS, BN, PV, US, BM

Final approval of the article:

MS, BN, PV, US, BM

Overall responsibility:

MS, BN, PV, US, BM

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#### **REFERENCES**

- 1. Cooper ID. Bibliometrics basics. J Med Libr Assoc. 2015 Oct;103(4):217-18.
- 2. Mejia C, Wu M, Zhang Y, Kajikawa Y. Exploring topics in bibliometric research through citation networks and semantic analysis. Front Res Metr Anal. 2021 Sep 24;6:742311.
- 3. Han J, Kang HJ, Kim M, Kwon GH. Mapping the intellectual structure of research on surgery with mixed reality: Bibliometric network analysis (2000-2019). J Biomed Inform. 2020 Sep;109:103516.
- 4. Adobes Martin M, Lipani E, Alvarado Lorenzo A, Aiuto R, Garcovich D. Trending topics in orthodontics research during the last three decades: A longitudinal bibliometric study on the topcited articles. Orthod Craniofac Res. 2020 Nov;23(4):462-470.
- 5. Uman LS. Systematic Reviews and Meta-Analyses. J Can Acad Child Adolesc Psychiatry. 2011 Feb;20(1):57–9.
- 6. Papadopoulos MA. Meta-analyses and orthodontic evidence-based clinical practice in the 21st century. Open Dent J. 2010 Jul;4:92–123.
- 7. Ahn E, Kang H. Introduction to systematic review and metaanalysis. Korean J Anesthesiol. 2018 Apr;71(2):103–12.

- 8. Tarazona-Alvarez B, Lucas-Dominguez R, Paredes-Gallardo V, Alonso-Arroyo A, Vidal-Infer A. A bibliometric analysis of scientific production in the field of lingual orthodontics. Head Face Med. 2019 Sep;15(1):23.
- 9. Ferrillo M, Nucci L, Gallo V, Bruni A, Montrella R, Fortunato L, et al. Temporary anchorage devices in orthodontics: a bibliometric analysis of the 50 most-cited articles from 2012 to 2022. Angle Orthod. 2023 Sep;93(5):591–602.
- Tarazona B, Lucas-Dominguez R, Paredes-Gallardo V, Alonso-Arroyo A, Vidal-Infer A. The 100 most-cited articles in orthodontics: A bibliometric study. Angle Orthod. 2018 Nov;88(6):785–96.
- 11. Aura-Tormos JI, García-Sanz V, Estrela F, Bellot-Arcís C, Paredes-Gallardo V. Current trends in orthodontic journals listed in Journal Citation Reports. A bibliometric study. Am J Orthod Dentofacial Orthop. 2019 Nov;156(5):663-674.e1.
- 12. Grillo R. Orthognathic surgery: a bibliometric analysis of the top 100 cited articles. J Oral Maxillofac Surg. 2021 Nov;79(11):2339–49.
- 13. Wong KF, Lam XY, Jiang Y, Yeung AWK, Lin Y. Artificial intelligence in orthodontics and orthognathic surgery: a bibliometric analysis of the 100 most-cited articles. Head Face Med. 2023 Aug;19(1):38.
- 14. Memon AR, Chen S, To QG, Vandelanotte C. Vigorously cited: a bibliometric analysis of the 100 most cited sedentary behaviour articles. JASSB. 2023;2(1):13.

- 15. Weltman B, Vig KW, Fields HW, Shanker S, Kaizar EE. Root resorption associated with orthodontic tooth movement: a systematic review. Am J Orthod Dentofacial Orthop. 2010 Apr;137(4):462-76.
- 16. Andersen J, Belmont J, Cho CT. Journal impact factor in the era of expanding literature. J Microbiol Immunol Infect. 2006 Dec;39(6):436–43.
- 17. Lam XY, Ren J, Yeung AWK, Lin Y. The 100 most-cited randomised controlled trials in orthodontics: a bibliometric study. Int Dent J. 2024 Jan:S0020-6539(23)00986-3.
- 18. Jannot AS, Agoritsas T, Gayet-Ageron A, Perneger TV. Citation bias favoring statistically significant studies was present in medical research. J Clin Epidemiol. 2013 Mar;66(3):296-301.
- 19. Ahmad P, Dummer PMH, Chaudhry A, Rashid U, Saif S, Asif JA. A bibliometric study of the top 100 most-cited randomized controlled trials, systematic reviews and meta-analyses published in endodontic journals. Int Endod J. 2019 Sep;52(9):1297–316.
- 20. Alkhutari AS, Al-Moraissi EA, Galvão EL, Christidis N, Falci SGM. Top 100 cited systematic reviews and meta-analyses in the major journals of oral and maxillofacial surgery: a bibliometric analysis. Oral Maxillofac Surg. 2022 Sep;26(3):343–56.
- 21. Royle P, Kandala NB, Barnard K, Waugh N. Bibliometrics of systematic reviews: analysis of citation rates and journal impact factors. Syst Rev. 2013;2:74.

- 22. Hardman TC, Krentz AJ, Wierzbicki AS. Ten tips for promoting your research. Cardiovasc Endocrinol Metab. 2020 Feb;9(1):30–5.
- 23. Rodríguez-Navarro A, Brito R. The link between countries' economic and scientific wealth has a complex dependence on technological activity and research policy. Scientometrics. 2022 May;127(5):2871-96.
- 24. Knight J, Parikh S, Ashkan K. Neurosurgical academic impact rankings by h5-Index: a global perspective. World Neurosurg. 2023 May;173:e55-e61.
- 25. Hui J, Han Z, Geng G, Yan W, Shao P. The 100 top-cited articles in orthodontics from 1975 to 2011. Angle Orthod. 2013 May;83(3):491–9.
- 26. Barão VAR, Shyamsunder N, Yuan JCC, Lee DJ, Assunção WG, Sukotjo C. Authorship, collaboration, and funding trends in implantology literature: analysis of five journals from 2005 to 2009. Implant Dent. 2011 Feb;20(1):68–75.
- 27. Chang YW, Huang MH, Lin CW. Evolution of research subjects in library and information science based on keyword, bibliographical coupling, and co-citation analyses. Scientometrics. 2015 Dec;105(3):2071-87.
- 28. Bakkalbasi N, Bauer K, Glover J, Wang L. Three options for citation tracking: Google Scholar, Scopus and Web of Science. Biomed Digit Libr. 2006;3:7.

- 29. Falagas ME, Pitsouni El, Malietzis GA, Pappas G. Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. FASEB J. 2008 Feb;22(2):338–42.
- 30. Pranckutė R. Web of Science (WoS) and Scopus: the titans of bibliographic information in today's academic world. Publications. 2021 Mar;9(1):12.
- 31. Chorus C, Waltman L. A large-scale analysis of impact factor biased journal self-citations. PLoS One. 2016 Aug;11(8):e0161021.
- 32. Ahmad P, Della Bella E, Stoddart MJ. Applications of bone morphogenetic proteins in dentistry: a bibliometric analysis. Biomed Res Int. 2020;2020:5971268.
- 33. Hirshman BR, Jones LA, Tang JA, Proudfoot JA, Carley KM, Carter BS, et al. "Journal Bias" in peer-reviewed literature: an analysis of the surgical high-grade glioma literature. J Neurol Neurosurg Psychiatry. 2016 Nov;87(11):1248–50.

Title  Root rescrition associated with orthodontic booth movement: A systematic review	Authors  Weltman, B; Vig, KWL; Fields, HW; Shanker, S; Kalzar, EE	Reference  Am J Orthod Dentofacial Orthop. 2010;137(4):462-12A.		No of authors Affiliations 5 Ohio State University	No of affliations	Year Journal AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS		, WoS Core First author 4 Belinda Weltman	Affiliation of first author Private practice	Country(1st author) Canada	Corresponding author Katherine WL Vig	Affiliation Country Ohio State University United States	Author Keywords Type of study  Systematic review  Onthodontics: Clear aliener therapy: Invisible	Domain Language  Root recorption English	Funding Drgs Delta Dental Foundation	0889-5405
Efficacy of clear aligners in controlling orthodontic tooth movement: A systematic review  Optimum force magnitude for orthodontic tooth movement: A systematic iterature review	Rossini, G; Panini, S; Castroflorio, T; Deregibus, A; Debernardi, Cl.  Ren, YJ; Maltha, JC; Kuilpers-Jagiman, AM	Angle Orthod. 2015;85(5):881-889.  Angle Orthod. 2003;73(1):86-92.	doi:10.2319/061614-436.1 doi:10.1043/0003- 3219/2003/073-0086.0FMF07>2.0.CO/2	5 University of Turin 3 Radboud University Nijmegen	1	ORTHOPEDICS 2015 ANGLE ORTHODONTIST 2003 ANGLE ORTHODONTIST		7 Gabriele Rossini 7 Yijin Ren	University of Turin  Radbould University Nijmegen	toly	Gabriele Rossini  Anne Marie Kulipers-Jagtman	University of Turin Italy  Radboud University Nijmegen	onthodontics; invisalign (8) onthodontics; optimum force; force magnitude; velocity; tooth movement; stress; strain; meta-analysis; Systematic review	Aligners English  Orthodornic tooth snowment/Biomechanics  English	NE NE	0003-3219
Orthodontic measurements on digital study models compared with plaster models: a systematic review	Pining, P., Marino, V., Aria, A	Orthod Craniofac Res. 2011;16(1):1-16.	doi:10.1111/j.1601-6343.2010.01503.x	3 Queen Mary University London	1	2011 ORTHODONTICS & CRANIDFACIAL RESEARCH 2005 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL		9 Padhraig S Fleming	Queen Mary University of London	The Netherland United Kingdom	Pachraig S Fleming	The Netherland  Queen Mary University of London United Kingdom	systematic review dental models, digital model; plaster model; reproducibility; validity	Digital orthodontics English	ME	1601-6335
Mandibular changes produced by functional appliances in Class B malocclusion: A systematic revier.  The effectiveness of protraction face mask therapy: A meta-analysis	Sew Cozza, P; Baccetti, T; Franchi, L; De Toffol, L; McNamara, JA  Kim, JH; Viana, MAG; Graber, TM; Omerza, FF; BeGole, EA	Am J Orthod Dentofacial Orthop. 2006;129(5):599:e1-e6. Am J Orthod Dentofacial Orthop. 1999;115(6):675-685.		University of Rome Tor Vergetz, University of Florence; University of Michigan     University of Illinois; Catholic University of Korea	2	ORTHOPEDICS  AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL		B Paola Cozza  Jeong Hwan Kim	University of Rome Tor Vergata  Catholic University of Korea	Italy South Korea	Lorenzo Franchi Ellen A Begole	University of Florence Italy United States	Systematic review Meta-analysis	Class if twee or netrovalese functional English  appliances  Class III Orthopedics English	NE NE	GEE9-5405
Failure rates and associated risk betters of orthodordic miniscrew implants: A meta-analysis  Digital three-dimensional image fusion processes for planning and evaluating orthodordics and orthogostable suggery. A systematic review		Am J Orthod Deviotacial Orthop. 2012;542(5):577-595.e7 Int J Oral Maxillofac Surg. 2011;40(4):341-352.	dei:10.1016/j.njodo.2012.05.016	Aristotie University of Thessaloniki, University of Boom, Hebrew University of Jerusalem     Radboud University Nijmegen	1	1999 ORTHOFOLIS S 2012 MARRICAN DOUBNE OF ORTHODONTICS AND DENTOFACIAL ORTHOFOLISS 2011 INTERNATIONAL JOURNAL OF GRAL AND MAKELDFACIAL SURGERY 2011		Spyriden N. Papageorgiou  Jeanneke M. Picolj	University of Bonn  Radboud University Nijmegen	Germany	Moschos A Papadopoulos	Arkstotle University of Thessaloniki Greece	SR and MA computer-assisted three-dimensional imaging; image flusion; orthodoetics; musillofacial surgery, surface-onfr- Systematic review	Bone anchorage English  Digital orthodontics English	NE  Ostch Technology Foundation (STW) [10315]; Dutch Association of Oral and Maxillofacial Surgery; Radboud University Nijmages Medical Centre, Nijmages, Tae Netherlands	0901-5027
orthograthic surgery. A systematic review  The effects of orthodontic therapy on periodontal health - A systematic review of controlled		IRT J OVIS MISSINDRIC SURE, 2011;40(4):41-452.  J Am Dent Assoc. 2008;139(4):413-422.	doi:10.1016/j.jpmz.no10.10.018 doi:10.14219/jada.archive.2008.0184	Kaptous University Apriliagen     University of Washington		2011 WILEWATEDWAR DOURSMAL OF CHEAR AND MANGELOF ACIAL SURGESTY  2008 JOURNAL OF THE AMERICAN DENTAL ASSOCIATION		Joanneke M. Picciq     Anne Marie Bollen	University of Washington	The Netherland	Stefaan J. Berge Anne Marie Bollen	Radboud University Nijmegen The Netherland University of Washington United States	tissue; facial skeleton; dentition; review	Digital orticosinos English  Orthodontic-periodontal consideration English	Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands	0901-5027
evidence  The impact of malocclusion on the quality of life among children and adolescents: a systematic review of quantitative studies		Sur J Orthod. 2015;37(3):238-247.	doi:10.14219/jap.kgu046	3 Onebro University; Malmo University	2	2014 EUROPEAN JOURNAL OF DICTION ON THE AMERICAN DINING ASSOCIATION  2014		7 Lillemor Dimberg	Onebro University	Sweden	Lillemor Dimberg	Onebro University Sweden	eidence-based dentistry; orthodontics; outcome assessment; periodontal diseases; literature review  Systematic review  Systematic review	Psychological and psychosocial aspects in English	Ombro County Council (CLL-194591)	0141-5387
Skeletally anchored forsus fatigue resistant device for correction of Class II malocclusions-A systematic review and meta-analysis		Orthod Craniofac Res. 2021;24(1):52-61.	doi:10.1111/ccr.12414	2 Saveetha University	1	2021 ORTHODONTICS & CRANIOFACIAL RESEARCH	3,1 1		Saveetha University	india	Prasanna Arvind T.R	Sauretha University India	Angle's Class II malocclusion; fixed functional appliances; SR and MA.	Class If fixed or removable functional appliances English	NI	1601-6335
Orthodoetic the rapy and ginglusi recession: a systematic review	Joss-Vassalli, i; Grebenstein, C; Topouzelis, N; Sculean, A; Katsanos, C		doi:10.1111/j.1601-6343.2010.01491.x	S University of Bern; Radboud University Nijmegen; Aristotle University of Thes saloniki	3	2010 OKTHODONTICS & CRANIDFACIAL RESEARCH  2015 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL	3,1 1	io isabella Joss-Vassalli	University of Bern	Switzerland	kabella Joss-Vassalli	University of Benn Switzerland	gingival disease; gingleal recession; incisor inclination; orthodontics; periodontium; tooth movement	Orthodontic-periodontal consideration English	NE	1601-6335
Association of orthodomic force system and root resciption: A systematic review  A systematic review of the relationship between overjet size and forumatic dental logurles  Michinglands in orthodomic: A systematic review of the literature	Roscoe, MG; Meira, JBC; Cattaneo, PM Nguyen, QV; Bezemer, PD; Habets, I; Frahl-Andersen, B	Am J Orthod Dentofacial Orthop. 2015;147(5) 610-626. Eur J Orthod. 1999;21(5):503-515.	doi:10.1016/j.ejodo.2014.12.026 doi:10.1093/ejo/21.5.503	University of Sao Paulo, Aerhun University     University of Amsterdam, Vrije Universiteit Amsterdam	2	1999 EUROPEAN JOURNAL OF ORTHODONTICS	2,6 1	2 Marina Guimaraes Roscoe 2 Q.V.Nguyen	University of Sao Paulo University of Amsterdam	Brazil The Netherland	Paolo M. Cattaneo Q.V.Nguyen	Authors University Denmark University of Amsterdam The Netherland	Systematic neview Systematic review	Root recognion English Dental trauma English	CAPES [BEX 2079-13-5]; CNPq [BEX 2079-13-5] NE	0889-5406 0141-5387
Mini-implants in orthodontics: A systematic review of the literature  Factors affecting the duration of orthodontic treatment: a systematic review	Reynders, R; Ronchi, L; Bipat, S Mavress, D; Athanasiou, AE	Am J Orthod Dentofacial Onhop. 2009;135(5):564.e1-565 Eur J Orthod. 2008;30(4):386-395.	doi:10.1016/j.iijodo.2008.09.026 doi:10.1093/iijo/cjr.018	Ushversity of Amstendam     Aristode University of Theusaloniki	1	2009 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS  2008 EUROPEAN JOURNAL OF ORTHODONTICS		9 Reint Reynders 9 Dimitrios Mayreas	Private practice Private practice	Eally Greece	Reint Reynders  Athanasios E. Athanasiou	Private practice Italy  Aristotle University of Thessaloniki Greece	Systematic review Systematic review	Sone anchorage English Orthodomic tooth English	No No	0889-5405 0141-5387
Carles-inhibiting effect of preventive measures during orthodoxisic treatment with fixed appliance A systematic review	COS * Derks, A; Katsaros, C; Frencken, IC; van 't Hof, MA; Kuijpers-Jagtman,	n, AM Caries Res. 2004;38(5):413-420.	dei:10.1159/000079621	S Radboud University Nijmegen	1	2004 CARIES RESEARCH	3,9 1	9 Aniek Derks	Radboud University Nijmegen	The Netherland	Aniek Derks	Radboud University Nijmegen The Netherland	demineralisation; fixed appliances; orthodontics; preventive measures; systematic review Systematic review	Preventive measure English	NI	0008-6568
Craniofacial structure and obstructive slieep agrees syndrome - A qualitative analysis and meta- analysis of the literature	Miles, PG; Vig, PS; Weyant, RI; Forrest, TD; Rockette, HE	Am J Orthod Dentofacial Orthop. 1996;309(2):163-172.	doi:10.1016/s0889-5406(95)70177-4	5 Pennsylvania Commonwealth System of Higher Education (PCSHE); University of Patabangh	2	1995 ORTHOPEDICS	3 1:	3 Peter G Miles	Private practice	Australia	Peter S. Vig	University of Pittsburgh United States	Meta-analysis	Upper ainways and sleep apnea English	NIDCR NET HMS [DE 05881, DE 09881] Funding Source: Medline	0889-5406
Crasiofacid and upper airway mosphology in pediatric sleep-disordered breathing: Systematic review and meta-analysis  How long does treatment with flued orthodontic appliances last? Asystematic review	Eatyal, V; Pamula, Y; Martin, AI; Daynes, CN; Kennedy, JD; Sampson, V Tsichlaki, A; Chin, SY; Pandis, N; Fleming, PS	WJ Am J Orthod Dentofacial Onhop. 2013;143(1):20-30.e3.  Am J Orthod Dentofacial Onhop. 2016;149(3):308-318.		University of Adelaids, University of Sydney     Queen Mary University London; University of Sens	2	2013 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS  2016 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL		7 Vandana Katyal 5 Aliki Tsichlaki	University of Adelaide  Queen Many University London	Australia United Kingdom	Vandana Katyal Padhraig S Fleming	University of Adelaide Australia  Queen Mary University of London United Kingdom	SR and MA Systematic review	Upper ainways and sleep apnea English Onthodontic tooth English	Australian Society of Orthodonthits Foundation for Research and Education NI	0889-5405 0889-5405
Miniscrews in cerhodontic treatment: Review and analysis of published clinical trials  Medication effects on the rate of cethodontic tooth movement: A systematic iterature review	Crismani, AG; Bertl, MH; Celar, AG; Bantleon, HP; Burstone, CI	Am J Orthod Dentofacial Onthop. 2016;137(1):108-113.  Am J Orthod Dentofacial Onthop. 2009;135(1):16-26.		Medical University of Vienna; University of Connecticut     Radboad University Nijmeger; University of Basel; University of Freiburg	2	2010 ORTHOPEDICS AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL 2009		O Adriano G Crismani  Theodosis Bartzela	Medical University of Vienna	Austria	Adriano G Crismani Jasp C Maltha	Medical University of Vienna Austria Radboud University Nijmegen	Systematic review Systematic review	enzwerent/Biomechanics English Bone anchorage English Orthodoesic tooth English	NE	GEE9-5405 GEE9-5405
APPLICATION OF THE REAL PROPERTY OF THE PROPER	sacres, r, sarp, s., northrae, s, names, s.	With Landson Demonstrate Contract 2009, 229(2) 20-20.	del.10.2019/j.queb.2002.02.019	IN AMAZUMA MINISTER OF PROPRIENCE, MERIODES AND MARKET, MINISTER OF PROPRIENCE	-	ORTHOPEDICS		, mescota sarata	Assessed Linversity repringers	The Netherland	page mana	The Netherland		movement/Biomechanics English	The Luke's Hospital, Bradford, UK; Glasgow Dental Hospital, Glasgow, UK; University of Cork, Cork, Indand; School of Dentistry. The University of Manchester, UK; National Institute for Health Research (NBIRI), UK;	d; K;
Retention procedures for stabilising tooth position after treatment with orthodontic braces	Littlewood, SI; Millett, DT; Doubleday, R; Beam, DR; Worthington, Hi	Cochrane Database Syst Rev. 2016;2016(1):CD002283.	dei:10.1002/14651858.CD002283.pub4	5 Cork University Hospital; University of Dunder, University of Manchester	3	2016 COCHRANE DATABASE OF SYSTEMATIC REVIEWS	8,4 1:	7 Simon J Littlewood	St Luke's Hospital, Bradford	United Kingdom	Simon J Littlewood	St Luke's Hospital, Bradford United Kingdom	Orthodontic Retainers; Orthodontics, Corrective [methods]; Randomized Controlled Trials as Topic; Tooth SR and MA Migration (prevention & control]; Humans	Stability and relapse/retention/fixed and removable retainers	NHR; Global Allance, British Ausociation for the Study of Community Dentistry, UK; British Ausociation of Oral Surgeons, UK; British Orthodontic Society, UK; British Society of Paediatric Dentistry, UK; British Society of Periodonology, UK; Canadian Dental Hygieratra Association, Canada; Mayo Chaic, US4;	1469-493X
Stability of treatment for anterior open-bite malocclusion: A meta-analysis	Greeniee, GM; Huang, GI; Chen, SSH; Chen, JD; Kospsell, T; Hujoel, P	P m i Orthod Dentofacial Orthop. 2011;139(2):154-169.		6 University of Washington		AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL	3 1	4 Geoffrey M Greenlee			Geoffrey M Greenles	University of Washington United States	SR and MA	Stability and relapse/vetention/fixed and English	National Center for Dental Hygiene Research Practice, USA; New York University College of Dentishy, USA; Royal College of Surgeons of Edinburgh, UK	
Stubility of the atment for anterior open-bits mulecularion: A meta-analysis  Accuracy, reliability, and efficiency of intraoral scanners for full-arch impressions: a systematic review of the clinical evidence		P m i Orthod Dentofacial Orthop. 2011;139(2):154-169.  Eur i Orthod. 2016;38(4):422-428.	doi:10.1016/j.ajodo.2010.10.019 doi:10.1093/ajo/qu/077	University of Weshington     Usalversity of Florence	2	2011 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS 2015 EUROPEAN JOURNAL OF ORTHODONTICS		4 Geoffrey M Greenlee  2 Cecilia Goracci	University of Washington University os Siena	United States	Geoffrey M Greenlee Cecilia Goracci	University of Washington United States  University of Sens Raly	SR and MA Systematic review	removable retainers English  Digital orthodontics English	NE NE	0141-5387
The orthodostic-periodostic interrelationship in integrated treatment challenges: a systematic review	Gkantidis, N; Christou, P; Topouzells, N	J Oral Rehabil. 2010;37(5):377-350.	de:10.1111/j.1365-2842.2010.02058.x	Aristode University of Theusaloniki; National & Kapodistrian University of Athens	2	2010 JOURNAL OF ORAL REHABILITATION  AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL	2,9 1:	2 Nikolass Gkantidis	University of Athens	Greece	Nikolaos Topossells	Aristotle University of Thessaloniki Greece	orthodontics; periodontics; interdisciplinary treatment; sesthetics; function; relapse	Orthodontic-periodontal consideration English	No.	0905-182X
Critical factors for the success of orthodontic mini-implants: A systematic review  Diagnostic accuracy and measurement sensitivity of digital models for orthodontic purposes: A systematic review	Chen, Y; Kyung, HM; Zhao, WT; Yu, WI  Rossini, G; Panini, S; Castroflorio, T; Dengibus, A; Debernardi, Cl.	Am J Orthod Dentofacial Onthop. 2009;135(3):284-291.  Am J Orthod Dentofacial Onthop. 2016;149(2):161-170.	dei:10.1016/j.ajodo.2007.08.017 dei:10.1016/j.ajodo.2015.05.029	4 distance acception accessed actives top, systegation reasons converting, matrix created distance at Technology 5 University of Turin	1	2009 ORTHOPEDICS  AMERICAN JOURNAL OF ORTHODONTICS AND DENTDRACIAL ORTHOPEDICS	3 1	2 Yan Chen 19 Gabriele Rossini	Inner Mongolia Medical University University of Turin	China	Yan Chen Gabriele Rossini	inner Mongolia Medical University China University of Sarin Italy	Systematic review Systematic review	Bone anchorage English Digital orthodontics English	NE NE	0889-5405 0889-5405
Dignostic accuracy and measurement sensitivity of digital models for orthodoxis; purposes: A yelsemalist cereium yelsemalist cereium advantations for accelerating orthodoxist tooth movement A systematic review TIMD is relation to malecclusion and orthodoxist treatment - A systematic review	Long, H; Pysikurel, U; Wang, Y; Liao, LN; Zhou, Y; Lai, WL Mohilin, B; Aushson, S; Paulin, G; Pietila, T; Bondemark, L; Brattstroen, Hansen, K; Holen, AK	Angle Orthod. 2013;83(1):164-171.	doi:10.2319/031512-224.1 doi:10.2319/003- 3219/2007)0773542:TRTMA[2.0.CO;2	6 Sichwan University  a University of Gethenburg: Linkoping University, Malmo University, Umea University of Gethenburg: Linkoping University, Malmo University, Umea University	1 4	2013 ANGLE ORTHODONTIST 2007 ANGLE ORTHODONTIST	3,4 11	7 No Long 17 Bengt Mobilin	Sichuan University University of Gothenburg	China	Westi Lai Bengi Mohiin	Schuan University China University of Gothenburg Sweden	Accelerate; Corticotomy; Orthodontic booth movement; SR and MA  systematic review  sheatcalsuicn; temporermandibular joint disorders;  considerate disbular disorders; certhodontics  Systematic review  systematic review	Orthodordic tooth represent/Biomechanics  TMI and craniomandibular dysfunction English	National Natural Science Foundation of China (83070858)	0003-3219
Validity and reliability of intraoral scanners compared to conventional gypsum models	Aragon, MLC; Pontes, LF; Bichara, LM; Flores-Mir, C; Normando, D	Eur / Orthod. 2016;38(4):429-434.	doi:10.1093/ejo/q\e033	5 Federal University of Para; University of Alberta	2	2016 EUROPEAN JOURNAL OF ORTHODONTICS		6 Monica LC Aragon	Federal University of Para	Brazil	Normando David	Federal University of Para Brazil	Systematic review	Digital orthodontics English	NI	0141-5387
measurements: a systematic evalues Cephalometric landmarks identification and reproducibility: A meta analysis Assessment of lateral cephalometric diagnosis of adenoid hypertrophy and posterior upper airway	Trpkova, B; Major, P; Prmad, N; Nebbe, B  Major, MP; Flores-Mir, C; Major, PW	Am J Orthod Dentofacial Orthop. 1997;112(2):165-170.  Am J Orthod Dentofacial Orthop. 2006;130(6):700-708.	doi:10.1016/v0889-5406(97)70242-7 doi:10.1016/j.ijodo.2005.05.050	4 University of Alberta 3 University of Alberta Boston University	1 2	1997 AMERICAN JOUENAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEXICS AMERICAN JOUENAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEXICS	3 11	14 Biljana Trpkova  13 Michael P Major	University of Alberta University of Alberta	Canada	Biljana Trpkova Michael P Major	University of Alberta Canada University of Alberta Canada	Meta-analysis Systematic review	braging/Cephalometrics/CBCT English  Upper sineays and steps apnea English	NI NI	G889-5406 G889-5406
detriction: A systematic eraine  Clinical effectiveness of invinsign (R) orthodoxicic treatment: a systematic review	Papadimitriou, A; Mouscules, S; Gkantidis, N; Kloukos, D	Prog Orthod. 2018;19(1):37.	del:10.1185/s40510-018-0235-r	Shent University; University of Bern	1	2018 PROGRESS IN ORTHODONTICS	4,8 1	Michael P Major     Alkaterini Papadimitriou	Hellenic Airforce General Hospital, Athen	s Greece	Dimitrios Kloukos	University of Blenn Switzerland	Orthodontics; Invisalign; Aligner; Clinical efficiency Systematic review	Algners English	N	2196-1042
Cytokines in crevicular fluid and orthodoelic tooth movement	Ren, YZ, Vissink, A Reming, PS, Johns, A	Eur J Oral Sci. 2008;116(2):89-97.  Angle Onhod. 2010;80(3):575-584.	dei:10.1111),1400-0722-2007-00511.x	2 University of Groninges 2 Green Mary University London	1	2008 EUROPEAN JOURNAL OF GRAL SCIENCES		Yijin Ren  Pathraig S Fleming	University of Graningen University of London	The Netherland	Yijin Ren	University of Graningen The Netherland University of Institut	gingivel crevicular fluid (GCF); orthodordics; systematic review; interfeukin-1 bets; prostaglandin E-2 Self-ligating; Oxthodortic; Fixed appliance; Systematic; SR and MA	Orthodordic tooth reovernent/Biomechanics  Brackets design, friction, self-lighting  English	NI	0909-8836
Self-Ligating Brackets in Orthodordisc A Systematic Review  Systematic review of self-ligating brackets	Chen, SSH; Greenlee, GM; Kim, JC; Smith, CL; Huang, GJ	Am J Orthod Dentofacial Onhop. 2010;137(6):726.e1-727	dei:10.1016/j.ajodo.2009.11.009	5 University of Washington	1	2010 ANGLE ORTHODONTIST 2010 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEXES	3 9	Stephanie Shih-Hsuan Che	University of Washington	United Kingdom United States	Padhraig S Florning Greg J Huang	University of London United Kingdom University of Weshington United States	Meta-analysis SR and MA	Brackets design, friction, self-lighting English	NI	0889-5405
Treatment effects of fixed functional appliances in patients with Class II malocolusion: a systematic review and meta-analysis  Treatment effects of removable functional appliances in patients with Class II malocolusion: a	2/mperdikas, VF; Koretsi, V; Papageorgiou, SV; Papadopoulos, MA  Ecostei V; Demostrikas VF; Papageorgiou SV; Papadopoulos, MA		doi:10.1093/ejo/qu934	4 University of Regensburg University of Bosov/Aristotle University of Thesselocities 4 University of Representative University of Bosov Aristotle University of Thesselocities	3	2015 EUROPEAN JOURNAL OF ORTHODONTICS		5 Vasileios F. Zymperdikas	Dental Unit,71st Airmobile Brigade	Greece	Mosches A Papadoposias	Arbsotle University of Thessaloniki Greece  Arbsotle University of Thessaloniki Greece	SR and MA	Class If fixed or removable functional appliances  Class If fixed or removable functional appliances  English	NI .	0141-5387
The amount of Merch of Amountain Amountain displanates in patients with Class it malescharion: a systematic review and meto-analysis Connections of the a Productication with Class it districts. A systematic review The broomed of Merch of Iroka dign certification (algories — A systematic review	Koretsi, V; Zymperdikas, VF; Papageorgiou, SN; Papadopoulos, MA Janson, G; Selhiler, R; Fernandes, TMF; Branco, NCC; de Freitas, MR	Am J Orthod Dentofacial Onhop. 2013;343(3):283-392.	dei:10.1093/vjo/qu071 dei:10.1014/j.vjodo.2012.10.015	4 University of Regensburg, University of Bennykistade University of Thesselocitis 5 University of Seo Paulo	1	2014 EUROPEAN JOURNAL OF ORTHODONTICS  2013 ORTHOPEDICS  ORTHOPEDICS		Vasiliki Koretsi Guilherme Janson	University of Regensiburg University of Seo Paulo	Grece	Moschos A Papadoposios Guilherme Janson	University of Seo Paulo Brazil	SR and MA Systematic review	appliances  Class & Based or removable functional appliances  English  English	NI	0141-5387 0889-5406
The treatment effects of invitalign orthodontic aligners - A systematic review  Systematic review of the experimental use of temporary skeletal archorage devices in orthodontic	Lagravere, MC; Flores-Mir, C  MScs Cornelia, MA; Scheffler, NR; De Clerck, HJ; Tulloch, JFC; Nyssen-Behat	J Am Dent Assoc. 2005;136(12):1724-1729. ats, C. Am J Orthod Dentofacial Onthop. 2007;131(4 Suppl):552-	doi:10.14219/jada.archive.2005.0117 doi:10.1016/j.ajodo.2006.05.033	2 Ushversity of Alberta 5 Ushversity of Louvain; Ushversity of North Carolina	1 2	2005 IQUENAL OF THE MATERICAN DENTAL ASSOCIATION  AMERICAN JOURNAL OF ORTHODONITICS AND DENTOFACIAL ORTHOPEDICS		Manuel O Lagravere  Marie A. Cornelis	University of Alberta Universite Catholique Louvain	Canada Belgium	Manuel O Lagravere Marie A. Cornella	University of Alberta Canada  Universite Catholique Louvain Belgium	Invisalign; treatment outcomes; orthodontics Systematic review  Systematic review	Aligners English Eone anchorage English	NI NI	0002-8177
A meta-analysis of mandibular intercanine width in treatment and postretention	Burke, SP; Silveira, AM; Goldsmith, LI; Yancey, IM; Yan Stewart, A; Sca WC	SSE. (arfe, Angle Onthod. 1998;68(1):53-60.	dei:10.1043/0003- 3219(1998)068-0053-AMADMI-2.3.CQ;2	6 University of Louisville	1	1998 ANGLE ORTHODONTIST	3,4		University of Louisville	United States	Anibal M Silveria	University of Louisville United States	meta-analysis; intercenine; posttreatment; postretention. Meta-analysis	Stability and relapse/retention/fixed and removable retainers	NI .	0003-3219
Periodostal health during clear aligners treatment: a systematic review  Officiency, effectiveness and treatment stability of clear aligners: A systematic review and meta- analysis	Rossini, G; Panini, S; Castroflorio, T; Dengilbus, A; Debernandi, Cl.		doi:10.1093/ejo/sju083	5 University of Turin	1	2014 EUROPEAN JOURNAL OF ORTHODONTICS	2,6 8	2 Gabriele Rossini	University of Turin	taly	Gabriele Rossini	University of Turin Baly	Systematic review Clear aligner; comparative effectiveness research;	Orthodoxisi-periodoxial consideration English Stability and relaps/vetersion/fixed and	N	0141-5387
analysis  Rapid Masillary Expansion for Pediatric Obstructive Sleep Agrees: A Systematic Review and Meta- Analysis		Orthod Cranisfac Res. 2017;20(3):127-133.  ertal, Laryngoscope. 2017;127(7):1712-1719.	doi:10.1111/ocr.12177 doi:10.1002/hry.26352	4 Wenchou Medical University  B United States Department of Defense; Stanford University; Septenza University	5	2017 ORTHODORTICS & CRANIOFACIAL RESEARCH  2016 LARYINGOSCOPE		Minding Zhong  Macario Carracho	Westhou Medical University  Tripler Army Med Ctr., Div Otolonyegol Sie	Olina MP United Flater	Z Yu Macario Camacho	Wenzhou Medical University China Tripler Army Med Ctr, Div Ololaryngol Sleep Surg & Sleep United States	orthodontic appliances; systematic review; treatment SR and MA outcome  Obstructive sleep agnes; sleep medicine; sleep agnes;  SR and MA	removable retainers  Transverse discrepancy/Maxillary  English	NI Lu	1601-6335 0023-852X
Analysis  Does rapid restillary expansion have long-term effects on always dimensions and breathing?		Am J Orthod Dentotacial Onhop. 2011;540(2):146-156.	dei:10.1016/j.ejedo.2011.02.019	Borne; University of Rome Tor Vergate; University of Porto     Federal University of Rio de Janeiro	1	2011 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHODOSTICS AND DENTOFACIAL	1 1	_	Surg & Sleep Med Federal University of Rio de Janeiro	Brazil	Carolina Baratleri	Med  Federal University of Rio de Janeiro Brazil	systematic review; meta-analysis sin and non- Systematic review	expansion ingus Transverse discrepancy/Maxillary expansion English	NI	0889-5406
Does orthodostic treatment before the age of LB years improve and health-related quality of life! systematic review and meta-analysis		Am J Orthod Dentotacial Onhop. 2017;251(4) 644-655.	del:10.1016/j.ejodo.2016.12.011	3 University of Sheffield	1	2017 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS	3 7	) Hanish Javidi	University of Sheffield	United Kingdom	Philip E Benson	University of Sheffield United Kingdom	SR and MA	Psychological and psychosocial aspects in patients	National Institute for Health Research Academic Clinical Fellowship	0889-5405
Effectiveness of clear aligner therapy for orthodostic treatment: A systematic review Orthodostics and temporomandibuter disorder: A meta-analysis	Robertson, I.; Keur, H.; Fagundes, NCF; Romanyk, D.; Major, P; Mir, CF Kim, MF; Graber, TM; Viana, MA	F Orthod Craniofac Res. 2020;23(2):133-142.  Am J Orthod Dentofacial Onthop 2002 Mag;121(5):438-46	dei:10.1111/ecr.12353	G. Ushversity of Alberta     Ushversity of Binoist; Cetholic University of Kones	1 2	2020 ORTHODONTICS B. CRAWIOFACIAL RESEARCH 2002 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL	3,1 7	7 Lindsay Robertson 7 Myung-Rip Kim	University of Alberta University	Canada United States	Carlos Flores Mir Thomas M Graber	University of Alberta Canada University United States	clear aligner; predictability; systematic review; treatment outcome  Meta-analysis	Aligners English TMJ and craniserandibular dynfunction English	NI NI	1601-6335 0889-5405
Factors associated with patient and parent satisfaction after orthodontic treatment: A systematic review.	Facheco-Pereira, C; Pereira, IR; Dick, BD; Perez, A; Flores-Mir, C	Am J Orthod Dentofacial Onhop 2015 Oct:148(4):652-9.	del: 10.1016/5 ajedo.2015.04.039	5 University of Alberta	1	2015 ORTHOPEDICS  2015 ORTHOPEDICS  ORTHOPEDICS		S Camila Pacheco-Pereira	of Binos University of Alberta	Canada	Camila Pacheco-Pereira	University of Alberta Canada	Systematic review	Psychological and psychosocial aspects in patients	Alberta Innovates (201500372) Funding Source researchfish	0889-5406
Evidence supporting the use of core-beam computed tomography in orthodoetics  A systematic review of the efficacy of oral appliance design in the management of obstructive size apacea.	sen Viljmen, OIC; Kuijpen, MAR; Bege, Si; Schols, JGJiti; Maal, TII; Breaning, H; Xuijpens-Jagiman, AM Anens, A; McGrath, C; Hagg, U	J Am Dent Assoc 2012 Mar;143(3):241-52  Eur J Orthod,2011 Jun;23(3):318-24.	doi: 10.14219/jada.archive.J012.0148 doi: 10.1093/ejo/jgg779. Epub 2011 Jan 13	7 Radboad University Nijmegen 3 University of Hong Kong	1	2012 IOURNAL OF THE AMERICAN DENTAL ASSOCIATION  2011 EUROPEAN JOURNAL OF ORTHODONTICS		G Olivier J.C. van Viljmen  Anika Ahrens	Radboud University Nijmegen	The Netherland	Kulipers Jagtman	Radboud University Nijmegen The Netherland	Berlies, con-beam computed tempgraphy; three- dimensional imaging; orthodontics; maxillofacial Systematic review Systematic review	broaging/Cephalometrics/CDCT English  Upper olinesys and steep apena English	NI General Research Fund, Hong Kong (1933) 77285GMI	0002-8177
aprices  Efficacy of certhspedic treatment with protextion facemask on skeletal Class III malocclusion; a systematic review and meta-analysis.			doi: 10.1093/ejo/pg079. Epub 2011 Jan 13 doi: 10.1111/ocr.12040.	Chiversity of Hong Kong     University of Messina, University of Insubria, Veginia Commonwealth University	3	2011 EUROPEAN JOURNAL OF ORTHODONTICS  2014 ORTHODONTICS & CRANKOFACIAL RESEARCH		Giancario Condasco	University of Hong Kong University of Messina	Raly	Colman McGrath  Biccardo Nucena	University of Heng Kong China  University of Messina Hely	Systematic review  Numan study; malocclusion; meta-analysis; protraction  Excensus; review article  SR and MA.	Upper airways and steep aprea English  Class II Onthopedics English	Gineral Research Fund, Hong Kong (1900 7728000M)	1601-6335
systematic review and metio abaliptis influence of orthodorski treatment, midline position, buccal corridor and smile arc on smile attractiveness A systematic review	St, Nuclera, R  Janson, G; Branco, NC; Fernandes, TMF; Sathler, R; Garib, D; Lauris, JF		del: 10.2319/040710-195.1	6 University of Sep Paulo	1	2011 ANGLE ORTHODONTIST		Guilherme Janson	University of Silo Paulo	traci	Guilherme Janson	University of Seo Paulo Brazil	Orthodoniics; Esthetics Systematic review	Psychological and psychosocial aspects in English	NI .	0003-3219
A comparison of treatment effectiveness between clear aligner and fixed appliance therapies	Ke, YY; Zhu, W; Zhu, M	BMC Oral Health. 2019 Jan 23;19(1):24	del: 10.1186/s12903-018-0695-z	3 Shanghal Jiao Tong University:Deljang Chinese Medical University	2	2019 BMC ORAL HEALTH	2,9 6	Yunyan Ke	Shaoxing Hospital of Traditional Chinese Medicine	China	Zhu Min	Shanghal Jiso Tong University China	Bracket; Clear aligner; Orthodovilics; Treatment outcome; SR and MA Meta-analysis; Systematic review	Aligners English	NI	1472-6831
systematic review and meta-analysis		J Deet. 2014 Oct;42(10):1300-19	dei: 10.1016/j.jdent.2014.07.013.	4 University of Eleric, Aristode University of Thesisaloniki	2	2014 JOURNAL OF DENTISTRY	4,4 6	Nikolass Gkardidis	University of Bens	Switzerland	Nikolaos Gkantidis	University of Benn Switzerland	Onthodontics; Accelerated tooth movement; Conticotomy; Low-level laser therapy; Systematic review; SR and MA Meta-analysis	Onthodentic tooth English English	NI	0300-5712
Compliance with removable orthodontic appliances and adjuncts: A systematic review and meta- analysis		Am J Orthod Dentofacial Onhop . 2017 Jul;152(1):17-32. Am J Orthod Dentofacial Onhop	dei: 10.1016/j.ajedo.2017.03.019. dei: 10.1016/j.ajedo.2017.11.019.	4 Queen Mary University London; Princess Nourah bint Abdulrahman University; University of Bern 3 University of Groningen	3	2017 AMERICAN JOURNAL OF ORTHODOMTICS AND DENTOFACIAL ORTHOPEDICS 2014 AMERICAN JOURNAL OF ORTHODOMTICS AND DENTOFACIAL	3 6		Queen Mary University of London	United Kingdom	Dalya Al-Moghrabi	Queen Mary University of London United Kingdom	SR and MA	Stability and relapse/veention/fixed and removable retainers  Onthodocalic teeth	NI	0889-5405
Surgically facilitated orbitolosistic restances: A systematic review interventions for orthodosistically induced white appl testines: a systematic review and meta-analysis (Theotonesses of orbindosistic review are implants in mechanique na inducement during en-masse introduces, dystematic review and meta-analysis.	Hoogeveen, EJ; Janszra, J; Ren, Y  Pysis Hochii, D; Hersberger-Zurffuh, M; Papageorgiou, SN; Eliades, T	, 2014 Apr;145(4 Suppl):551-64. Eur J Orthod: 2017 Apr 1;19(2):122-133	dei: 10.1016/j.ajedo 2013.11.019. dei: 10.1093/ejo/cjw065.	4 University of Geneva; University of Zurich; University of Bons	3	2017 SUBDIFICAL COURSES OF DETHODORYTICS	2,6 6	Eelke J. Hoogeveen Damian Hochii	University of Groningen University of Zurich	The Netherland Switzerland	Tijn Ren Theodore Eliades	University of Zurich Switzerland University of Zurich Switzerland	Systematic notion SR and MA	engreent/Storrechanics English  Demineralization, White Spot lesion English	NF Forschungsgemeinschaft Dental (FGO) e.V.	0889-5406 0141-5387
Effectivenes of orthindostic ministeron implants in anchange rehindocement during en-mease retraction: A systematic review and meta-analysis  Structiveness of minimally invanive sungical procedures in the acceleration of seeth movement: a systematic review and meta-analysis	Antonzewska-Smith, J; Sanul, M; Lyczek, J; Konopka, T; Kawala, B  Affaval, AMH; Hajeer, MY, Ajaj, MA; Hamadah, O; Brad, B	Am J Orthod Dentofacial Onhop ; 2017 Mar;151(3):440-455. Prog Orthod	dei: 10.1016/j.ajedo 2016.08.029. dei: 10.1186/j.40510-016-0146-9.	5 Wiroclaw Medical University 5 University of Damascus	1	2017 AMERICAN JOURNAL OF ORTHODOMISS AND DENTOFACIAL ORTHOPEDICS 2016 PROGRESS IN ORTHODOMISS		Joanna Antoszewska-Smith     Alas M. H. Alfawal	Wroclaw Medical University University of Damascus	Foland	Jan Lyczek Mohammad Y Hajeer	Winclaw Medical University Poland University of Damascus Syria	SR and MA Onthodontics; Accelerated tooth movement; Minimally SR and MA	Bone anchorage English Onthodoreic tooth English	NI NI	0889-5406 2196-1042
Orthodontics for treating temporomandibular joint (TMI) disorders	Luther, F; Layton, S; McDonald, F	.2016 Dec;37(1):33 Cochrane Database Syst Rev .2010 Jul 7;(7):C0004541	dei: 10.1002/14651858.CD006541.pub2.	3 King's College of London; University of Leeds	2	2010 COCHEANE DATABASE OF SYSTEMATIC REVIEWS	8,4 6	friedy Luther	King's College London	United Kingdom	Franer McDonald	King's College London United Kingdom	Systematic review	3MI and cranismandibular dysfunction English	University of Leeds, UK; United Lincolnshire Hospitals NHS Trust, UK; King's College London, UK	1469-493X
Early orthodontic treatment for Class III malocclusion: A systematic review and meta-analysis		An J Orthod Denotation Onthop 2017 Ins.(151(1):28-52 Siero Med Rev	dei: 10.1016/j.ajodo 2016.07.017.	2 University of Manchester	1	2017 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS		See Choong Woon	University of Manchester	United Kingdom	Badri Thinuvenkatachari	University of Manchester United Kingdom	SR and MA Sleep-disordered breathing: Obstructive sleep apnea	Class III Orthopedics English	NI .	0889-5406
Orthodoriks treatments for managing obstructive sleep apnea syndrome in children: A systematic neview and meta-analysis		. 2016 Feb;25:84-94	dei: 10.1016/j.smrv.2015.02.002.	3 University of Montreal; University of British Columbia	2	2016 SLEEP MEDICINE REVIEWS		1 Nelly T. Huynh	University of Montreal	Canada	Nelly T. Huyeh	University of Montreal Canada	syndrome; Children; Young adolescents; Orthopedic mandibular advancement; Rapid maxillary expansion; Systematic review; Meta-analysis	Upper sirvays and steep apnea English  Transverse discrepancyManilary	Canadian Institutes of Health Research (PLC-122659)	1087-0792
Effects of rapid maxillary expansion on the midpolatal suture: a systematic review  Do orthodostic research outcomes reflect patient values? A systematic review of randomized controlled trials involving children	Liu, SY; Xu, TM; Zou, W Tsichlabl, A; O'Tirisen, K	Eur J Crithold ,2015 Dec;37(6):651-5 Am J Crithold Dentotacial Onthop ,2014 Sec;145(3):279-85	del: 10.1093/ejo/gu100 del: 10.1016/j.ejodo.2014.05.022.	3 Peking University 2 University of Manchester	1	2015 EUROPEAN JOURNAL OF ORTHODONTICS  AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS	2,6 6 3 6	Shifae Liu Alia Tekhiski	Peking University University of Manchester	China United Kingdom	TianMin Xu Aliki Tsichlaki	Poking University China University of Manchester United Kingdom	Systematic review Systematic review	expansion English Psychological and psychosocial aspects in English	National Natural Science Foundation of China (NSFCB1371192)  NHR UK; National Institute for Health Research (ACF-2011-06-017) Funding Source: researchflah	0141-5387 0889-5406
The impact of orthodorotic treatment on the quality of life a systematic review  A systematic review of the accuracy and efficiency of dental movements with invisalign (\$)	Zhou, Y; Wang, Y; Wang, XY; Vollere, G; Hu, RD Galan-Loper, L; Bercia-Gonzales, J; Plasencia, E	. 2014 Sep; 146(1)(279-85. BMC Oral Health , 2014 Jun 10:1466 Korean J Orthod, 2019 May, 49(3): 140-549	dei: 10.1186/1472-6831-14-66. dei: 10.4041/kjod.2019.49.3.140	5 Wenzhou Medical University 3 Valencia Catholic University Saint Vincent Martyr	1	2014 BAC ORAL HEALTH 2019 KOREAN JOUENAL OF ORTHODONIECS		Yu Zhou Lidia Galan-Lopez	Wenzhou Medical University Valencia Catholic University Saint Vincee	China d Stude	Rong Dang Hu Lidia Galan-Lopez	Wenzhou Medical University China  Valencia Catholic University Saint Spain	Malocclusion; Orthodoetic treatment; Quality of life; Oral health-related quality of life Clear alignen; trainalign (R); trainible orthodoetics; Systematic review	pythenics   Psychological and psychososial aspects in   English   patients   Alienary   English	NI NI	1472-4831 2234-7518
A systematic review of the accuracy and efficiency of dental movements with invisalign (II)  In-vitro orthodontic bond strength testing: A systematic review and meta-analysis	Galan-Loper, I.; Barcia-Gonzalez, J.; Plasencia, E Einnema, KJ; Ozcan, M; Post, WJ; Ren, YJ; Dijkstra, PU	Korean J Orthod. 2019 May; 49(3): 140–149  Am J Orthod Dentofacial Orthop . 2010 May;137(5):615–622.e3	dei: 10.4041/kjod.2019.49.3.140 dei: 10.1016/j.ajedo.2009.12.021	3 Walencia Catholic University Saint Vincent Martyr 5 University of Groningen, Janversity of Zurich	2	2010 KOREAN JOURNAL OF ORTHODONTICS  AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS		2 Lidia Galan-Lopez 2 Katrina J. Finnerna	Valencia Catholic University Saint Vincer Martyr University of Groningen	The Netherland	Lidia Galan-Lepez Katrina J. Finnerna	Vilencia Catholic University Saint Vincent Martyr University of Gossingen The Netherland	Treatment outcomes SR and MA	Aligners English  Bonding and bracket removal English	KI .	2234-7518 0889-5405
Ausliable Technologies, Applications and Benefits of Telecribodontics. A Literature Review and Possible Applications during the COVID-19 Pandemic		o, M J Clin Med . 2020 Jun 17;9(6):1891.	del: 10.3396/jcm9061891	6 University of Millan	1	2020 JOURNAL OF CLINICAL MEDICINE		Circle Maspero	University of Milan	tuly	Cincia Maspero	University of Milan Baly	COVID-19; dentistry, teleassistance; remote sensing technology; orthodontics; teledentistry; Systematic review telearthodontics	Others:Selecthodomics English	NI	NA.
Insertion torque and success of cethodontic mini-implants: A systematic review  Officetiveness of orthodontic treatment with functional appliances on mandibular growth in the short-term	Baynders, RAM; Bonchi, L; Ladu, L; van Etten-Jamaludin, F; Bipat, S Manico, E; Gatto, E; Bumscano, M; Matarese, G; Condasco, G	Am J Orthod Dentofacial Orthop 2012 Nov;147(5):596-61445 Am J Orthod Dentofacial Orthop 2011 Ian;139(1):24-26	dei: 10.1016/j.ajedo.2012.06.013. dei: 10.1016/j.ajedo.2010.04.028	S University of Amsterdam S University of Messina	1	2012 ORTHOFEICES 2011 ORTHOFEICES 2011 ORTHOFEICES 2011 ORTHOFEICES 2011 ORTHOFEICES		Direct A. Meursings Reynder Direct Marsico		toly	Reint A. Meursinge Reynders Elvira Marsico	Private practice Italy Private practice Italy	Systematic review SR and MA	Bone anthorage English  Class I fixed or removable functional  appliance  English	NI	GRE9-5405 GRE9-5405
Corticotonies and Orthodontic Tooth Movement: A Systematic Review  Bone age assessment with various machine learning techniques: A systematic Iterature review an	Patterson, BM; Dalci, O; Darendeliler, MA; Papadopoulou, AK  Ballora, AL; Anderberg, P; Kvint, O; Menden, E; Ruiz, SO; Berglund, JS	I Oral Maxillofac Sung 2016 Mar;74[3]:453-73.	doi: 10.1016/j.jorns.2015.10.011. doi: 10.1371/journal.pone.0220242.	University of Sydney; Aristotle University of Thessaloniki     Blekinge Institute Technology; Karolisska University Hospital	2	2016 IOURNAL OF ORAL AND MAXILLOFACIAL SURGERY 2019 PLOS ONE	1,9 5 3,7 5	7 Braydon M. Patterson 5 Ana Luiza Dallora	Private practice University of Sydney Blekinge Institute of Technology	Australia Sweden	Alexandra K Papadopoulou Ana Luiza Dallora	Private practice University of Sydney Australia Blakings institute of Technology Sweden	Systematic review SR and MA	Orthodordic tooth enovement/Biomechanics  Others: Machine Learning  English	NI NI	0278-2391 1932-6203
mets-analysis  Comparison of vacuum-formed and Hawley retainers: A systematic review	Mai, Wi; He, JA; Meng, HY; Jiang, YP; Huang, CK; Li, M; Yuan, K; Kang,		del: 10.1016/j.ajedo 2014.01.019	8 Guangol Medical University	1	2014 ORTHOPEDES  AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDES		5 Weegla Mai	Guangei Medical University	China	No Kang	Guangai Medical University China	Systematic review	Stability and reliapse/retention/fixed and removable retainers	N	0889-5406
Treatment outcome with orthodontic aligners and fixed appliances: a systematic review with meta analyses	Papageon group, and increase, or, make, of Personness, 1, annually, 1	Eur J Orthod : 2020 Jun 23;42(3):331-343	del: 10.1093/ejo/cje094	5 University of Zurich; National & Kapodistrian University of Athens; Tampere University; University of Eastern Finland	4	2019 EUROPEAN JOURNAL OF ORTHODONTICS		Spyridon N. Papageorgiou		Switzerland	Theodore Eliades	University of Zurich Switzerland	SR and MA	Aligners English	NI .	0141-5387
Office of remineralizing agents on white agot lesions after orthodordic treatment: A systematic review  Office of mulocclusions and orthodordic on periodorali health: Didence from a systematic review	Chen, H; Liu, XG; Dai, J; Rang, ZW; Guo, T; Ding, Y	Am J Orthod Dentofacial Onthop : 2013 Mar;143(3):376- 182 a3. I Am Dent Assoc 2008 Apr;139(4):413-22.	DOI: 10.1016/j.ajodo.2012.10.013 DOI: 10.14219/jada.archiva.2008.0184	6 fourth Military Medical University; People's Hospital of Gansu Province 1 University of Weshington	2	2013 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS  2008 JOURNAL OF DENTAL EDUCATION		Hong Chen  Anne Marie Bollen	Fourth Military Medical University University of Washington	China United States	Yin Ding	Fourth Military Medical University China University of Washington United States	Systematic review systematic review systematic review systematic review systematic review	Demineralization, White Spot lesion English Orthodortic-periodontal consideration English	NE NE	0889-5406
Effects of milocclusions and arthodoricis on periodorial health: Evidence from a systematic review Laypeople's perceptions of frontal smile esthetics: A systematic review Determinants for success rates of temporary anchorage devices in orthodorists: a meta-analysis (	dew Bollen, AM  Perini, S, Rossini, G, Castroflorio, T, Fortini, A; Deregibus, A; Osbernardis, C  Deles sandri, D, Salgarello, S; Dales sandri, M; Lazzanori, E; Plancino, M	Am J Orthod Dentofacial Onhop : 2016 Nov;150(5):740-71	50 DO: 10.1016/j.ajodo.2016.06.022	5 University of Turin; University of Cagliani	2	2016 AMERICAN JOURNAL OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS	3 5	Simone Parrini	University of Turis	taly	Simone Parrini	University of Turin. Italy	health; evidence-based  Systematic review	Psychological and psychosocial aspects in patients	NI	0889-5406
veseminants for success rates of temporary anchorage devices in orthodontics: a meta-analysis ( > 50)	Paganelli, C; Malorana, C; Santoro, F	M; Eur J Orthod : 2014 Jun;36(3):303-13 Prog Orthod : 2016 Dec;17(1):24	DO: 10.1093/sje/pi349 DO: 10.1186/s40510-016-0117-x	Ushiversity of Einescia; University of Enleste; University of Milan; University of Turin     Use Mary University London; University of Elen	4 2	2013 EUROPEAN JOURNAL OF ORTHODONTICS  2016 PROGRESS IN ORTHODONTICS	+ +	Domenico Dalessandri Dalya Al-Moghrabi	University of Streecia  Queen Mary University of London	Italy United Kinadom	Domenico Dalessandri Dalya Al-Moghrabi	University of Brescia Italy  Queen Mary University of London United Kingdom	Meta-analysis  Orthodontic retainer; Periodonial, Sunnival rate; Fallure SR and MA	Stability and relapsylvetention/fixed and English	NI NI	0141-5387 2196-1042
The effects of fixed and removable orthodontic retainers: a systematic review	Al-Moghrabi, D; Pandis, N; Fleming, PS				2	2014 ORTHODONTICS & CRANIOFACIAL RESEARCH			Federal University of Santa Catarina	Brazil	Graziela De Luca Canto	Federal University of Santa Catarina  Brazil	digital roode; lisser scanning; plaster model; systematic  Systematic review  Systematic review	removable retainers Angus n  Digital orthodontics English	NI	
intra-arch dimensional measurement validity of laser-scanned digital dental models compared with		PW Orthod Craniofac Res 2015 May,18(2) 65-76	DOI: 10.1111/ser.12068	6 Federal University of Santa Catarina; University of Alberta						Belgium	Pisha Pittayapat	University of Leuven Belgium	core-beam computed tomography; three-dimensional imaging; spiral computed tomography; orthodontics; Systematic review	Imaging/Cephalometrics/CBCT English		1601-6335
intro-such dimensional measurement validity of laser-scanned digital dental models compared with the original plaster models, a systematic review.  Three-dimensional copholometric analysis in orthodontics: a systematic review.	Casto, GD; Pacheco-Pereira, C; Lagravera, MO; Rores-Mir, C; Major, P Pitzayapat, P; Limchaichana-Golstad, N; Willema, G; Jacobs, R	Orthod Craniofac Res 2014 May, 17(2) 69-91	DO: 10.1111/ser.12034	4 Chulalongkorn University University of Tromso; University of Leuven	1	2014 ORTHODONTICS & CRANIOFACIAL RESEARCH	3,1 5		University of Leuven			t	caphalometry		Interfaculty Council for Development Co-operation (IRD)	1601-6335
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**Supplementary Table:** Descriptive data of top 100 cited systematic review and meta-analysis in orthodontics.