THE ORTHODONTIC REVOLUTION: INVISALIGN, A MODERN SOLUTION

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Abstract

Invisalign is an innovative and aesthetic solution for correcting orthodontic problems. Using transparent aligners made of a high-quality medical plastic, this system allows patients to correct their teeth in a discreet and comfortable way. Treatment begins with an initial consultation, where the orthodontist assesses the patient's dental condition and develops a personalized plan based on 3D scans. The aligners should be worn between 20 and 22 hours a day, and each set is changed every two weeks, ensuring a progressive alignment of the teeth. Among the advantages of Invisalign are aesthetics, comfort and flexibility, patients can remove the aligners for meals and oral hygiene, thus facilitating the maintenance of good dental hygiene. However, there are also drawbacks, such as the higher cost compared to traditional braces, the need for strict discipline, and limitations for complex orthodontic cases. It is especially recommended for teenagers and adults who have mild to moderate orthodontic problems, wanting an aesthetic and practical solution. In conclusion, Invisalign offers an effective and modern alternative for correcting teeth, combining advanced technology with increased comfort, making it a popular choice among patients looking to improve their smile.

Keywords: transparent aligners; modern orthodontic treatment; dental aesthetics; invisalign; teeth correction

Introduction

Invisalign has become one of the most popular options for teeth straightening, offering a modern and discreet alternative to traditional braces. Designed to gradually align the teeth through a series of transparent aligners, this system represents an innovative solution for those looking for an aesthetic, comfortable and effective method [1-3].

For many people, a smile is a business card, and well-aligned teeth contribute to both self-confidence and oral health. Unlike metal braces, Invisalign allows for dental correction without drawing attention to treatment and without the discomfort associated with metal wires and braces [1,2].

The treatment process begins with an initial consultation with the orthodontist, where a detailed 3D scan of the patient's teeth is performed. Based on this scan, the doctor creates a personalized treatment plan, predicting each alignment stage and the duration it takes to achieve the desired results. Each set of aligners is worn for about two weeks and applies light pressure to the teeth to gradually move them into the correct position. The aligners should be worn for 20 to 22 hours a day, and the changes are quite gradual, making the transition more comfortable for the patient [1,2].

In addition to the discreet aesthetics, Invisalign offers the advantage of flexibility: the aligners can be removed for meals and oral hygiene, which reduces the risk of cavities and gingivitis, common problems when wearing fixed braces. However, discipline is essential, because for optimal results, aligners must be worn constantly. [1-4]

The cost of Invisalign treatment is generally higher than that of conventional braces, and this is an aspect that could discourage some people. Also, for complex orthodontic cases, such as correcting severe occlusions, Invisalign may not always be recommended, and traditional options are

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considered more effective. However, for those with mild or moderate alignment problems, Invisalign may be an ideal solution [2,3].

Through this article, we aim to look at the pros and cons of Invisalign, provide a detailed look at the treatment process, and help readers decide if this is the right solution for their orthodontic needs [2,4].

The material used and the production technique

Invisalign aligners are made from an innovative material called SmartTrack, which is an advanced formulation of thermoplastic polyurethane. This material has been developed specifically to improve the efficiency and comfort of orthodontic treatments. Here is a detailed overview of the chemical composition and characteristics of the material used in the manufacture of aligners [3,4].

SmartTrack is a thermoplastic polyurethane that is part of a class of materials known for their flexibility and strength. This type of polymer is preferred in medical applications due to its biocompatible properties, thus ensuring safe use in the oral cavity [3-5].

SmartTrack material is designed to provide an optimal combination of elasticity, durability and biocompatibility. This advanced formulation of thermoplastic polyurethane allows Invisalign aligners to exert constant and controlled pressure on the teeth, making it easier for them to move in the desired direction. SmartTrack ensures a good grip on the teeth, keeping the aligners in the correct position throughout the treatment [3-6].

The material is transparent, offering an aesthetic, almost invisible solution, ideal for patients. Easy to clean and maintain, SmartTrack helps maintain oral hygiene, and its stability at room temperature guarantees user comfort. This combination of features makes SmartTrack the material of choice for modern Invisalign aligners [3,5].

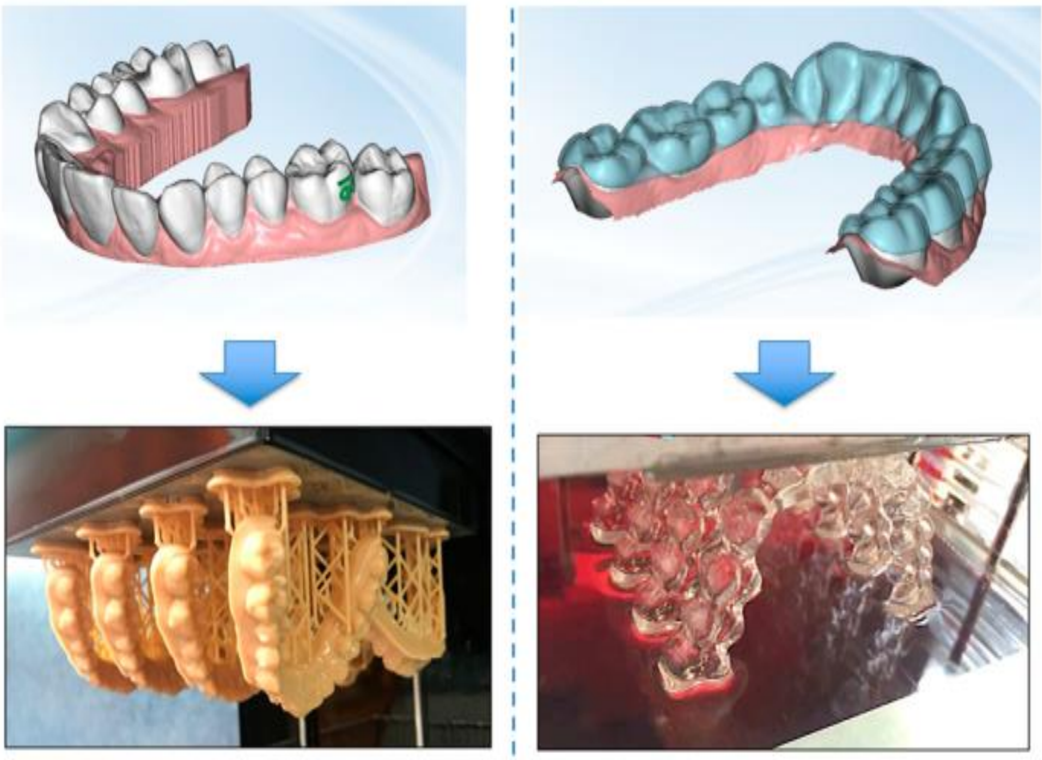

Image 1. Aligners made with Cad/Cam technology [5].

Invisalign aligners are almost invisible thanks to the transparency of the SmartTrack material. This allows patients to benefit from discreet orthodontic treatment, which is essential for many users, especially adolescents and adults [4,6].

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SmartTrack allows for easy oral hygiene. The aligners can be removed for meals and dental hygiene, and cleaning them can be done easily with lukewarm water and soap. This cleaning ability reduces the risk of bacteria buildup and helps maintain dental health throughout treatment [5,7].

The SmartTrack material retains its stability and shape at room temperature, which contributes to patient comfort. This means that the aligners will not deform under normal conditions of use, ensuring a pleasant experience throughout the treatment [5-7].

The technique of making Invisalign aligners involves an advanced process that combines digitalization with precise manufacturing. The first stage is the initial consultation, in which the orthodontist assesses the patient's dental condition and takes images or 3D scans of the teeth. This data is used to create a personalized treatment plan, using specialized software to simulate tooth movements [6-8].

The aligners are then made by 3D printing from SmartTrack material, a thermoplastic polyurethane that provides elasticity and comfort. After manufacturing, the aligners go through rigorous quality control to ensure that they meet the necessary standards. The patient receives the set of aligners, along with instructions for use, and follows a plan to change the aligners every two weeks. This modern technique ensures an effective and aesthetic correction of the teeth, adapted to the individual needs of each patient [6-8].

Treatment Determination

The Invisalign treatment experience begins with an initial consultation with the orthodontist, where a 3D scan of the patient's teeth is performed. This allows for the creation of a personalized plan, detailing each stage of the treatment and how the teeth will align over time. After approval, the patient receives sets of personalized aligners, each set of which is worn for about two weeks [5-7].

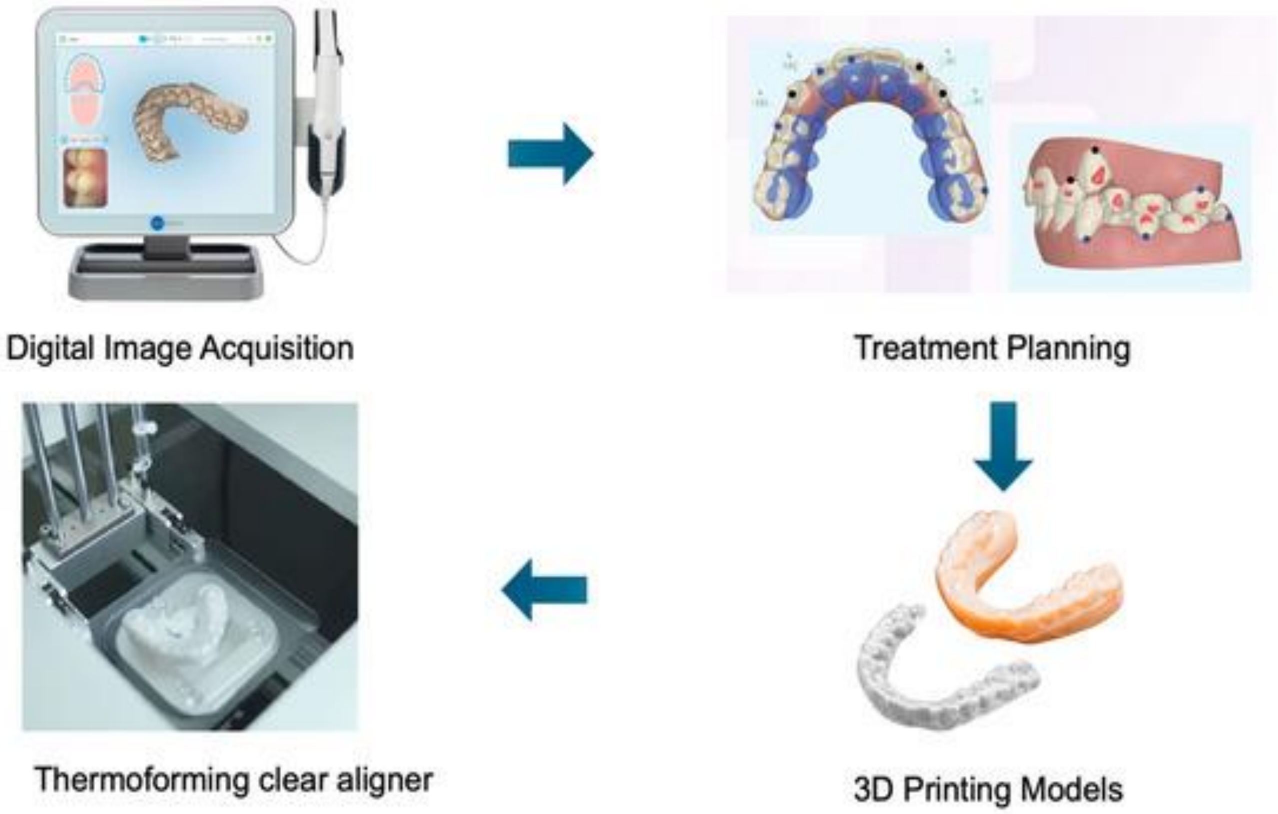

Image 2. Stages of treatment [5].

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Aligners should be worn between 20 and 22 hours a day, being removed only for meals and dental hygiene. This flexibility is one of the main advantages of Invisalign, allowing patients to eat and clean their teeth without hindrance. In general, patients notice minimal discomfort at the beginning of each new set of aligners, when the teeth begin to adjust to the pressure applied. However, this discomfort usually disappears after a few days [7-9].

Regular change of aligners ensures the gradual progress of the treatment, and patients are called for periodic check-ups to check the evolution. During the treatment, constant discipline is required in wearing the aligners, and strict adherence to the orthodontist's recommendations is essential to achieve the desired results. Usually, the final results are obtained in a period of 12-18 months, depending on the complexity of the case [8,10].

Overall, the treatment is perceived as comfortable, and the transition from one set of alignments to another is relatively easy. This modern and discreet experience attracts many patients who want to correct their teeth without the inconveniences of classic braces [8-10].

The Benefits of Invisalign

It offers several advantages over traditional braces. First of all, aligners are transparent, making them almost invisible and thus a preferred aesthetic option for those who want a discreet dental correction. The comfortable plastic material reduces the discomfort associated with wires and braces, and the aligners are customized for each alignment step, applying gradual pressure to move the teeth without major pain [9,10].

Invisalign aligners are customized for each patient, thus ensuring a comfortable fit. Unlike traditional braces, which can cause irritation to the gums and cheeks due to braces and wires, Invisalign minimizes discomfort. Also, because aligners are removed for meals and dental hygiene, there are no dietary restrictions, allowing patients to eat what they want without fear of damage to their braces [9-11].

Another important benefit is flexibility: the aligners can be removed for meals and oral hygiene, allowing for easy cleaning and reducing the risk of cavities and gum problems. Invisalign also requires fewer visits to the orthodontist, and the duration of treatment may be shorter for certain cases, making this system both convenient and effective for moderate corrections [10-12].

Image 3. Aligners are transparent, aesthetically pleasing and flexible [9].

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For many patients, Invisalign can result in a shorter treatment time compared to traditional methods. Although the exact duration of treatment varies depending on the complexity of the case, many patients see significant results in as little as 12-18 months. This reduced time is often appreciated by those who want to achieve a corrected smile as quickly as possible [11-13].

Invisalign generally requires fewer orthodontist visits compared to traditional braces. Patients come for consultations every 6-8 weeks, instead of every month. This can reduce the time spent at the doctor's office and increase convenience for patients [11,14].

Invisalign uses digital smile simulation technology, allowing patients to visualize the expected results before starting treatment. This transparency gives patients a better understanding of the process and the end results, increasing their confidence in their choice [12-14].

The Importance of Invisalign

It has several disadvantages that can influence the treatment decision. First, the cost is usually higher compared to traditional braces, which can be an obstacle for some patients. Also, the treatment requires strict discipline, the aligners must be worn between 20 and 22 hours a day; Neglect can prolong the duration of treatment or affect the results [12-14].

Invisalign is not always recommended for more complex orthodontic cases, such as correcting severe occlusions or serious dental problems. In these situations, traditional braces can provide more efficient and faster results. Patients with such problems may have to opt for more conventional methods, which could limit their treatment options [12-14].

For complex cases, such as severe occlusions or more difficult alignments, Invisalign may not be enough, with orthodontists recommending conventional braces. In addition, it sometimes takes a period of adjustment, and some patients experience discomfort when changing each set of aligners [12,13].

Invisalign aligners are easy to remove, but this can become a disadvantage. Patients can lose or damage the aligners if they are not careful. Replacing lost or damaged aligners can add additional costs and delay the progress of treatment. It is essential for patients to be aware of their responsibility to keep aligners safe.[13,15]

Patients must be consistent in the care of the aligners. They should be cleaned regularly to prevent bacteria buildup and maintain a pleasing aesthetic appearance. If aligners are not properly maintained, patients may develop oral hygiene problems such as cavities or gingivitis [13-15].

Some people may have difficulty adjusting to wearing aligners, especially at first. This can include difficulty speaking or pronouncing words correctly. Usually, these problems resolve over time as the patient gets used to the aligners, but it can be frustrating for some [14-16].

Invisalign: who is it recommended for

Invisalign is primarily aimed at adolescents and adults who have mild to moderate orthodontic problems, such as light crowding of teeth, moderate spacing, uneven alignment, or minor occlusion corrections. It is ideal for those who want a discreet and flexible solution with no visible braces and wires [15,16].

For more complex orthodontic cases, Invisalign may not be the most suitable option, and the orthodontist may recommend traditional methods. This solution is perfect for those willing to stick to the constant wearing of aligners to achieve the desired results [15-17].

Invisalign requires a commitment from the patient. It is essential that they follow the orthodontist's instructions, wearing the aligners according to the established schedule. People who are willing to follow these rules and actively engage in the treatment process will benefit the most from the benefits offered by Invisalign [15-17].

For those who want to avoid the discomfort and irritation associated with traditional braces, Invisalign offers a more comfortable solution. Aligners are made of a

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soft material that does not cause gum irritation, unlike metal braces [16-18].

Image 4. Results obtained in 16 months in a 12-year-old patient [15].

Invisalign is ideal for patients who have mild and moderate orthodontic problems, such as crowded teeth, spacing, and mild occlusion [17,18].

It is a great choice for people with an active lifestyle, such as athletes, who want to avoid the injury risks associated with fixed braces. Aligners can be removed before training or competitions, providing increased comfort and reducing the risk of injury [17-19].

Maintaining results

In order to maintain the results obtained with Invisalign, it is essential that the patient strictly follows the orthodontist's recommendations. After completing the active treatment, it is necessary to wear retainers, devices that help keep the teeth in the corrected position. These retainers can be fixed, permanently applied to the back of the teeth, or mobile, similar to aligners, worn as directed [17,19].

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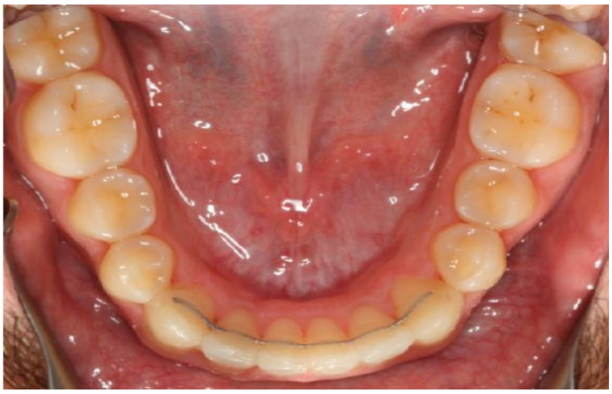

Imagine 5. Retainer metalic[18]

In the first months after treatment, it is indicated to wear the retainer for a longer period of time, usually at night, to prevent recurrence. Rigorous dental hygiene is also crucial, as newly aligned teeth are more prone to problems if not properly cared for [18-20].

Regular monitoring at the orthodontist ensures the necessary adjustments and confirms that the teeth remain in the desired position in the long term. Thus, a rigorous maintenance plan helps to maintain optimal Invisalign treatment results [18-20].

Biomaterials are of particular importance in orthodontics due to their essential role in treating malocclusions and improving patients' comfort and aesthetics. These materials are used to make various orthodontic devices, such as brackets, springs, ligatures and clear aligners, contributing to the correct alignment of teeth and the correction of dental and maxillary malformations [21-31, 44-49].

Biomaterials ensure the functionality of orthodontic devices, and essential oils can relieve unpleasant symptoms and prevent complications, together contributing to more effective treatment and an improved patient experience [21-31, 50-53].

In orthodontics, biomaterials must meet specific requirements related to biocompatibility, corrosion resistance and the ability to withstand long-term mechanical forces. Biocompatibility is crucial to avoid adverse or inflammatory effects of oral tissues. Also, the materials used must be resistant to the action of chemical factors in the oral cavity, such as saliva and food, to prevent corrosion and maintain mechanical properties throughout the treatment [32-43, 54-56].

Conclusion

Invisalign is especially recommended for teenagers and adults who have mild to moderate orthodontic problems, want an aesthetic and comfortable solution and are willing to follow the rules of wearing aligners. Consulting with a specialized orthodontist is essential to assess whether Invisalign is the right option for each patient's individual needs. This personalized approach ensures that each patient can benefit from a corrected smile, in a way that fits their lifestyle.

While it offers many benefits, it is essential for patients to be aware of the drawbacks associated with this system. High costs, the need for strict discipline, initial discomfort and limitations in complex cases are important aspects to consider. Consulting with an experienced orthodontist is crucial to determine if Invisalign is the right solution for each individual patient.

Orthodontic consultation is essential to assess whether Invisalign is the right method for their specific needs. Thus, Invisalign remains a recommended solution for those looking for an aesthetic and flexible dental alignment, while having a serious commitment to respecting the wearing of aligners.

The experience with Invisalign is perceived as positive by most patients, due to the comfort, aesthetics and flexibility offered by this innovative dental alignment system.

References

DOI : 10.62610/RJOR.2024.4.16.86

1. Rossini G, Parrini S, Castroflorio T, Deregibus A, Debernardi CL. Efficacy of clear aligners in controlling orthodontic tooth movement: a systematic review. Angle Orthod. 2015 Sep;85(5):881-9. doi: 10.2319/061614-436.1.
2. Jindal, P.; Juneja, M.; Siena, F.L.; Bajaj, D.; Breedon, P. Mechanical and geometric properties of thermoformed and 3D printed clear dental aligners. Am. J. Orthod. Dentofac. Orthop. **2019**, 156, 694–701
3. Ke Y, Zhu Y, Zhu M. A comparison of treatment effectiveness between clear aligner and fixed appliance therapies. BMC Oral Health. 2019 Jan 23;19(1):24. doi: 10.1186/s12903-018-0695-z.
4. Zhang, N.; Bai, Y.; Xuejia Ding, X.; Zhang, Y. Preparation and characterization of thermoplastic materials for invisible orthodontics. Dent. Mater. J. **2011**, 30, 954–959.
5. Cenzato, N.; Di Iasio, G.; Martìn Carreras-Presas, C.; Caprioglio, A.; Del Fabbro, M. Materials for Clear Aligners—A Comprehensive Exploration of Characteristics and Innovations: A Scoping Review. Appl. Sci. **2024**, 14, 6533. https://doi.org/10.3390/app14156533
6. Timm, L.H.; Farrag, G.; Baxmann, M.; Schwendicke, F. Factors Influencing Patient Compliance during Clear Aligner Therapy: A Retrospective Cohort Study. J. Clin. Med. **2021**, 10, 3103. https://doi.org/10.3390/jcm10143103
7. Bichu YM, Alwafi A, Liu X, Andrews J, Ludwig B, Bichu AY, Zou B. Advances in orthodontic clear aligner materials. Bioact Mater. 2022 Oct 20;22:384-403. doi: 10.1016/j.bioactmat.2022.10.006.
8. Martínez-Lozano, D.; Castellanos-Andrés, D.; López-Jiménez, A.-J. Staging of Orthodontic Tooth Movement in Clear Aligner Treatment: Macro-Staging and Micro-Staging—A Narrative Review. Appl. Sci. **2024**, 14, 6690. https://doi.org/10.3390/app14156690
9. Tamer İ, Öztaş E, Marşan G. Orthodontic Treatment with Clear Aligners and The Scientific Reality Behind Their Marketing: A Literature Review. Turk J Orthod. 2019 Dec 1;32(4):241-246. doi: 10.5152/TurkJOrthod.2019.18083.
10. Cocoș DI, Bucur SM, Coman TM, Păcurar M. Observational study on the frequency of anchorage auxiliaries in fixed orthodontics, Romanian Journal of Oral Rehabilitation vol. 13, nr. 3,(iulie-septembrie) anul 2021.
11. Cocoș DI, Earar K, Bucur SM, Păcurar M, Mariș M, Cocoș ID, Galea C. FREQUENCY OF THIRD MOLAR PATHOLOGY: INNOVATIVE CAUSES, SYMPTOMS AND TREATMENT OPTIONS. Romanian Journal of Oral Rehabilitation Vol. 15, No.4 October-December 2023
12. Cocoș DI, Dumitriu Buzia O, Tatu AL, Dinu M, Nwabudike LC, Stefan CS, Earar K, Galea C. Challenges in Optimizing Nanoplatforms Used for Local and Systemic Delivery in the Oral Cavity. Pharmaceutics. 2024; 16(5):626. https://doi.org/10.3390/pharmaceutics16050626
13. Johan Hartshorne, Mark Brian Wertheimer, Emerging insights and new developments in clear aligner therapy: A review of the literature, AJO-DO Clinical Companion, Volume 2, Issue 4, 2022, Pages 311-324, https://doi.org/10.1016/j.xaor.2022.04.009.
14. Mendes Ribeiro SM, Aragón MLSC, Espinosa DDSG, Shibasaki WMM, Normando D. Orthodontic aligners: between passion and science. Dental Press J Orthod. 2024 Jan 5;28(6):e23spe6. doi: 10.1590/2177-6709.28.6.e23spe6.
15. AlMogbel A. Clear Aligner Therapy: Up to date review article. J Orthod Sci. 2023 Sep 4;12:37. doi: 10.4103/jos.jos_30_23.
16. Rosvall MD, Fields HW, Ziuchkovski J, Rosenstiel SF, Johnston WM. Attractiveness, acceptability, and value of orthodontic appliances. Am J Orthod Dentofacial Orthop. 2009 Mar;135(3):276.e1-12; discussion 276-7. doi: 10.1016/j.ajodo.2008.09.020.
17. Wouters C, Lamberts TA, Kuijpers-Jagtman AM, Renkema AM. Development of a clinical practice guideline for orthodontic retention. Orthod Craniofac Res. 2019 May;22(2):69-80. doi: 10.1111/ocr.12302.
18. Lyros I, Tsolakis IA, Maroulakos MP, Fora E, Lykogeorgos T, Dalampira M, Tsolakis AI. Orthodontic Retainers-A Critical Review. Children (Basel). 2023 Jan 28;10(2):230. doi: 10.3390/children10020230.
19. Tamer İ, Öztaş E, Marşan G. Orthodontic Treatment with Clear Aligners and The Scientific Reality Behind Their Marketing: A Literature Review. Turk J Orthod. 2019 Dec 1;32(4):241-246. doi: 10.5152/TurkJOrthod.2019.18083.
20. Livas C, Pazhman FS, Ilbeyli Z, Pandis N. Perceived esthetics and value of clear aligner therapy systems: A survey among dental school instructors and undergraduate students. Dental Press J Orthod. 2023 Jul 24;28(3):e232225. doi: 10.1590/2177-6709.28.3.e232225.oar.

DOI : 10.62610/RJOR.2024.4.16.86

21. Cocoş DI, Păcurar M, Nistor AC, Moaleş D, Cocoş ID, Earar K. The role of cbct in assessing the severity of wisdom teeth inclusion compared to conventional radiological techniques. Romanian Journal of Oral Rehabilitation Vol. 16, No.2 April-June 2024. DOI : 10.6261/RJOR.2024.2.16.51
22. Solomon O, Earar K, Cocoş DI, Forna DA, Brechler C, Micu AA, Nițoi LC, Grigorescu CC. The role of dental guards in managing dental parafunction: a detailed analysis. Romanian Journal of Oral Rehabilitation Vol. 16, No.3 July-September 2024. DOI : 10.6261/RJOR.2024.3.16.60
23. Pacurar M, Cocoş DI, Lazăr M, Lazăr C, Caraiane A. Cone beam computed tomography, importance of examination for the storage of therapeutical failures in implantology. Medicine and materials. Volume 3, Issue 1, 2023: 3-12 | ISSN: 2784 – 1499 & e-ISSN: 2784 – 1537. DOI: 10.36868/MEDMATER.2023.03.01.003
24. Bejan A, Baciu D, Cocoş DI, Dimofte AR. Concepts on the resistance of acrylic teeth, pmma. medicine and materials Volume 3, Issue 1, 2023: 43-47 | ISSN: 2784 – 1499 & e-ISSN: 2784 – 1537 DOI: 10.36868/MEDMATER.2023.03.01.043
25. Feier R, Pacurar M, Cocos DI. materials used in fracture rehabilitation "e fort I, II and III". MEDICINE AND MATERIALS Volume 4, Issue 1, 2024: 33-42 | ISSN: 2784 – 1499 & e-ISSN: 2784 – 1537 DOI: 10.36868/MEDMATER.2024.04.01.033
26. Salcianu IA, Bratu AM, Bratu IC, Parvu S. Biomaterials used in heart valve substitution. MEDICINE AND MATERIALS Volume 4, Issue 1, 2024: 43-50 | ISSN: 2784 – 1499 & e-ISSN: 2784 – 1537 DOI: 10.36868/MEDMATER.2024.04.01.043.
27. Ramona F, Patru Radu S, Roxana D, Rahela C, Iulian Catalin B. Innovative concepts of the use of the surgical guide in oral rehabilitation . MEDICINE AND MATERIALS. 2024. 53-60. DOI: 10.36868/MEDMATER.2024.04.02.053
28. Forna N.C., Dascalu C. , Forna D ., Antohe M.E. , Incidence and prevalence of dental - periodontal conditions and edentation in Moldavia, Medical-Surgical Journal-Revista Medico-Chirurgicala , 2013,117 (1) , pp.205-211
29. Vitalariu, A.M., Markomanolaki, CC ,Chonta, I , Luca, O Tatarciuc, MS Dascalu, C.G ., Study on teeth morphology variations among greek patients, Romanian journal of oral rehabilitation, 2017,9 (1) , pp.68-74
30. Agop-Forna D., Salceanu, M ., Topoliceanu, C ., Cretu, C ., Vasincu, D ., Forna, N ., Dental lasers in restorative dentistry: a review, Romanian journal of oral rehabilitation, 2021, 13 (2) , pp.7-17
31. Forna, N.C. and Sader, R., Oral rehabilitaion on small substance loss cases,2009,Romanian journal of oral rehabilitation, 1 (4) , pp.15-20
32. 32 Budala, DG , Baciu, ER , Virvescu, DI , Armencia, A ,Scutariu, MM , ; Surlari, Z ; Balcos, C., Quality of Life of Complete Denture Wearers-A Comparative Study between Conventional Dentures and Acrylic Dentures with Vitamin B12 Incorporated, Medicina-Lithuania, 2021, 57 (8)
33. 33.Ifteni, G ., Aungurencei, O ., Apostu, A ., Tanculescu, O ., Cotea, C ., Virvescu, D ., Surlari, Z ., Comparative analysis of Tmj tomographic images in patients with dysfunctional syndrome of TMJ, Romanian journal of oral rehabilitation, 2018, 10 (2) , pp.76-85
34. Cristea, I ., Agop-Forna, D., Martu, M.A. ,Dascalu, C .,Topoliceanu, C. , Török, R., Török, B. , Bardis, D., Bardi, P.M. ,Forna, N , Oral and Periodontal Risk Factors of Prosthetic Success for 3-Unit Natural Tooth-Supported Bridges versus Implant-Supported Fixed Dental Prostheses,Diagnostic, 2023 13 (5)
35. Antohe, M.E. , Stamatin, O., Paval, D., Tibeica, A., Cretu, C ., Forna, N.C., Clinical-technological interactions of treatment in partially extended edentulousness,2022, Romanian journal of oral rehabilitation 14 (1) , pp.195-204
36. Bahrin, L.G. , Lungu, N.C., Forna, N.C. ,Sandu, I., Birsa, M.L. ,Zwitterionic 3-(1,3-Dithiol-2-ylium)phenolates, Revista de chimie, 2013, 64 (11) , pp.1343-1346
37. Petcu, A .,Savin,C.,Balan, A., Mihalas, E., Gavrila, L.M. , Balcos, C., Antohe, M.E., Biomaterials Involved in Frontal Area Restorations in Pediatric Dentistry, Dec 2018, Revista de Chimie, 69 (12) , pp.3473-3476
38. Bolat, M; Antohe, M and Forna, NC, Clinical aspects of therapeutical solutions involved in oral rehabilitation of partially edentulous patients, 2013, Romanian journal of oral rehabilitation 5 (4) , pp.75-81

DOI : 10.62610/RJOR.2024.4.16.86

39. Iordache C, Antohe M-E, Chirieac R, Ancuța E, Țănculescu O, Ancuța C. Volumetric Cone Beam Computed Tomography for the Assessment of Oral Manifestations in Systemic Sclerosis: Data from an EUSTAR Cohort. Journal of Clinical Medicine. 2019;
40. 40.Antohe,M.E. Madarati, M .Forna, N.C. , Clinical-technological interactions of treatment in partially extended edentulousness, Romanian journal of oral rehabilitation, 2022, 14 (1) , pp.195-204
41. Diaconu-Popa, D. , Vitalariu, A., Martu, I., Luchian, I. , Luca, O ., Tatarciuc, M Full dentures realization -conventional vs digital technologies,Romanian journal of oral rehabilitation, 2021,13 (4) , pp.160-173
42. Ciocan-Pendefunda, A.A., Martu, M.A. , Antohe, M.E. , Luchian, I., Martu, I. , Sioustis, I. ,Ifteni, G ., Indirect composite veneers as a social therapeutic solution. a case report,Romanian Journal of Oral Rehabilitation, Volume 10, Issue4,2018, Page 91-96
43. Braescu, R., Tatarciuc, M., Luca, O ., Giusca, SE, Caruntu, ID , A short history of the histological processing techniques for tooth and supporting hard tissues,Medical-surgical journal-revista medico-chirurgicala, 2020, 124 (1) , pp.134-140
44. Botnariu G., Forna N., Popa A.,Popescu R ., Onofriescu A. ,Cioloca D., Lacatusu C. , Mihai B. ,Correlation of Glycemic Control Parameters in Non-Diabetic Persons with Cardiovascular Risk Scores - Results from a Cross-Sectional Study,Revista De Chimie , 2017, 68 (1) , pp.108-110
45. Agop-Forna, D ., Cretu, C., Topoliceanu, C ., Salceanu, M., Vasincu, D ., Forna, N ., Clinical applications of diode lasers in oral surgery, Romanian Journal Of Oral Rehabilitation, 2021 13 (1) , pp.265-270
46. Cocos, DI , Earar, K , Bucur, SM , Pacurar, M , Maris, M , Cocos, ID , Galea, C., Frequency of third molar pathology: innovative causes, symptoms and treatment options, Romanian journal of oral rehabilitation, 2023, 15 (4) , pp.526-533
47. Dascalu, CG ,Antohe, ME , Zegan, G ., Burlea, SL , Carausu, EM , Ciubara, A , Purcarea, VL , Blended Learning - The Efficiency of Video Resources and YouTube in the Modern Dental Education, Revista de cercetare si interventie sociala, 2022, 72 , pp.288-310
48. Budala, DG , Baciu, ER , Surlari, Z ., Balcos, C ., Virvescu, D.I ., Interim crowns of PMMA and bis-acryl resin and their colour change in various conditions-a comparative study,Romanian journal of oral rehabilitation, 2021, 13 (2) , pp.231-236
49. Iordache, C ., Fatu, A.M ., Pomârleanu, C., Scurtu, D., Ancuta, C ., Temporomandibular joint in juvenile idiopathic artritis: an imaging study and ergonomic considerations, Romanian journal of oral rehabilitation, 2017, 9 (1) , pp.60-67
50. Luca, L.,Ciubara, A.B., Antohe, M.E., Peterson, I., Ciubara, A., Social media addiction in adolescents and young adults - psychoeducational aspects, Archiv Euromedica, 2022, 12.
51. Bosinceanu DN, Beldiman A, Baciu RE, Bolat M, Bosinceanu DG, Forna NC. Complete Dentures Fractures - Causes and Incidence. Romanian Journal of Oral Rehab.2017;9(1):54-59
52. Luchian I, Budală DG, Baciu ER, Ursu RG, Diaconu-Popa D, Butnaru O, Tatarciuc M. The Involvement of Photobiology in Contemporary Dentistry-A Narrative Review. Int J Mol Sci. 2023 Feb 16;24(4):3985
53. Apostu, AM , Ciocan-Pendefunda, AA , Antohe, M, Bodnar, P ., Tarevici, L , Budu, V , Proca, VS , Tanculescu, O ., TMDs approach by students and young doctors, Romanian journal of oral rehabilitation, 202315 (2) , pp.35-43
54. Cioata, R., Balan, A., Antohe, M.E., Savin, C., Ignat, G., Basno, A., Researches Regarding New Biomaterials Involved in Sports Mouthguard,Materiale Plastice, 2016, 53 (1) , pp.147-149
55. Golovcencu, L., Romanec, C., Martu, M.A. ,Anistoroaiei, D., Pacurar, M., Particularities of Orthodontic Treatment in Patients with Dental Anomalies that Need Orthodontic - Restorative Therapeutic Approach, Revista de chimie, 2019, 70 (8) , pp.3046-3049
56. Surlari, Z , Virvescu, DI , Baciu, ER , Vasluianu, RI , Budala, DG ., The Link between Periodontal Disease and Oral Cancer-A Certainty or a Never-Ending Dilemma?, APPLIED SCIENCES-BASEL, 2021, 11 (24)
57. Scutariu, MM, Budala, DG , Davidescu, A , Romanec, C , Ciupilan, C , Drugus, D , The performance of the romanian health system in the european context, Romanian Journal of oral Rehabilitation, 2022, 14 (4) , pp.96-104

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