A Guideline in preparing for the Jordanian Board Exam in Periodontics:

The following is a guideline to aid candidates in preparing for their Jordanian Board Exam. It should be noted that the suggested articles should be considered a starting point to expand from. Candidates are expected to have a sound knowledge in the basic periodontal literature and should not be restricted to the suggested ones.

Candidates are expected to have an adequate knowledge in the following aspects:

Medical problems related to dental management:

- Rosella D, Papi P, Giardino R, Cicalini E, Piccoli L, Pompa G. Medication-related osteonecrosis of the jaw: Clinical and practical guidelines. J Int Soc Prev Community Dent. 2016 Mar-Apr;6(2):97-104. doi: 10.4103/2231-0762.178742. PMID: 27114946; PMCID: PMC4820581.
- Scully's Medical Problems in Dentistry.

Aspects of oral medicine related to Periodontics:

Basic Science:

Anatomy and Histology of the Periodontium:

Gingiva

Alveolar Bone

Periodontal Ligament

Cementum

Formation and structure of bacterial biofilm:

- Jakubovics NS, Goodman SD, Mashburn-Warren L, Stafford GP, Cieplik F. The dental plaque biofilm matrix. Periodontol 2000. 2021;86:32–56. https://doi. org/10.1111/prd.12361

Pathogenesis of Periodontal disease:

Microbiology of periodontal disease:

- Sedghi L, DiMassa V, Harrington A, Lynch SV, Kapila YL. The oral microbiome: Role of key organisms and complex networks in oral health and disease. Periodontol 2000. 2021;87:107–131. https://doi.org/10.1111/ prd.12393
- Belibasakis GN, Belstrøm D, Eick S, Gursoy UK, Johansson A, Könönen E. Periodontal microbiology and microbial etiology of periodontal diseases: Historical concepts and contemporary perspectives. Periodontol 2000. 2023;00:1-17. doi: 10.1111/prd.12473

Host response related to periodontal disease:

Moore, GC, Smith, KT, Christiansen, MM, et al. Effect of interproximal home oral hygiene on clinical parameters and inflammatory biomarkers in patients receiving periodontal maintenance. *J Periodontol*. 2023; 94: 848–857. https://doi.org/10.1002/JPER.22-0631

Clinical Concepts:

Classification of Periodontal diseases and conditions:

- Caton JG, Armitage G, Berglundh T, Chapple IL, Jepsen S, Kornman KS, et al. A new classification scheme for periodontal and peri-implant diseases and conditions - introduction and key changes from the 1999 classification. Journal of Periodontology. 2018;45(Suppl. 20):S1-S8
- Chapple IL, Mealey BL, van Dyke TE, Bartold PM, Dommisch H, Eickholz P, et al. Periodontal health and gingival diseases and conditions on an intact and a reduced periodontium: Consensus report of workgroup 1 of the 2017 world workshop on the classification of periodontal and peri-implant diseases and conditions. Journal of Periodontology. 2018;89(Suppl. 1):S74-S84
- Trombelli L, Farina R, Silva CO, Tatakis DN. Plaque-induced gingivitis: Case definition and diagnostic considerations. Journal of Periodontology. 2018;45(Suppl. 20):S44-S67
- Lang NP, Bartold PM. Periodontal health. Journal of Periodontology. 2018;89(Suppl. 1):S9-S16
- Jepsen S, Caton JG, Albandar JM, Bissada NF, Bouchard P, Cortellini P, Demirel K, de Sanctis M, Ercoli C, Fan J, Geurs NC, Hughes FJ, Jin L, Kantarci A, Lalla E, Madianos PN, Matthews D, McGuire MK, Mills MP, Preshaw PM, Reynolds MA, Sculean A, Susin C, West NX, Yamazaki K. Periodontal manifestations of systemic diseases and developmental and acquired conditions: Consensus report of workgroup 3 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. J Periodontol. 2018 Jun;89 Suppl 1:S237-S248. doi: 10.1002/JPER.17-0733. PMID: 29926943.
- Papapanou PN, Sanz M, Buduneli N, Dietrich T, Feres M, Fine DH, Flemmig TF, Garcia R, Giannobile WV, Graziani F, Greenwell H, Herrera D, Kao RT, Kebschull M, Kinane DF, Kirkwood KL, Kocher T, Kornman KS, Kumar PS, Loos BG, Machtei E, Meng H, Mombelli A, Needleman I, Offenbacher S, Seymour GJ, Teles R, Tonetti MS. Periodontitis: Consensus report of workgroup 2 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. J Periodontol. 2018 Jun;89 Suppl 1:S173-S182. doi: 10.1002/JPER.17-0721. PMID: 29926951.
- Tonetti, M. S., Greenwell, H., & Kornman, K. S. (2018). Staging and grading of periodontitis: Framework and proposal of a new classification and case definition. *Journal of Periodontology*, **89**(Suppl 1), S159– S172. https://doi.org/10.1002/JPER.18-0006

Periodontal charting and indices: meaning, significance and diagnostic and prognostic value:

- Lang NP, Nyman S, Senn C, Joss A. Bleeding on probing as it relates to probing pressure and gingival health. Journal of Clinical Periodontology. 1991;18(4):257-261

Radiographic assessment:

Natural history of periodontal disease:

- Axelsson P, Nystrom B, Lindhe J. The long-term effect of a plaque control program on tooth mortality, caries and periodontal disease in adults. Journal of Clinical Periodontology. 2004;31(9):749-457
- Ravidà A, Qazi M, Troiano G, Saleh MHA, Greenwell H, Kornman K, Wang HL. Using periodontal staging and grading system as a prognostic factor for future tooth loss: A long-term retrospective study. J Periodontol. 2020 Apr;91(4):454-461. doi: 10.1002/JPER.19-0390. Epub 2019 Sep 25. PMID: 31502244.

Furcation involvement: Assessment, significance and influence on prognosis:

Mobility: Assessment, significance and influence on prognosis:

Risk factors and risk assessment:

- Saleh, M., Dukka, H., Troiano, G., Ravidà, A., Qazi, M., Wang, H. L., & Greenwell, H. (2022). Long term comparison of the prognostic performance of PerioRisk, periodontal risk assessment, periodontal risk calculator, and staging and grading systems. *Journal of Periodontology*, **93**(1), 57– 68. https://doi.org/10.1002/JPER.20-0662
- Darby I. Risk factors for periodontitis & peri-implantitis. Periodontol 2000. 2022;90:9-12. doi: 10.1111/prd.12447

Trauma from occlusion:

Mucogingival defects:

Gingival enlargement: Pathogenesis and management:

Oral hygiene: significance, aids and compliance:

Scaling and root surface debridement and healing following scaling and root surface debridement:

- Tomasi C, Liss A, Welander M, Alian AY, Abrahamsson KH, Wennström JL. A randomized multi-centre study on the effectiveness of non-surgical periodontal therapy in general practice. J Clin Periodontol. 2022 Nov;49(11):1092-1105. doi: 10.1111/jcpe.13703. Epub 2022 Jul 27. PMID: 35833528; PMCID: PMC9796759.
- Trombelli L, Franceschetti G, Farina R. Effect of professional mechanical plaque removal performed on a long-term, routine basis in the secondary prevention of periodontitis: A systematic review. Journal of Clinical Periodontology. 2015;42(Suppl. 16):S221-S236
- M. Sanz, D. Herrera, M. Kebschull, et al. Treatment of stage I–III periodontitis—the EFP S3 level clinical practice guideline. J Clin Periodontol, 47 (2020), pp. 4-60, 10.1111/jcpe.13290.
- Herrera, D., Sanz, M., Kebschull, M., Jepsen, S., Sculean, A., Berglundh, T., Papapanou, P. N., Chapple, I., Tonetti, M. S., & EFP Workshop Participants and Methodological Consultant. (2022). Treatment of stage IV periodontitis: The EFP S3 level clinical practice guideline. *Journal of Clinical Periodontology*, **49**(Suppl 24), 4– 71. https://doi.org/10.1111/jcpe.13639

Maintenance and supportive of periodontal therapy: Significance and frequency:

Chemical plaque control and the use of local and systemic antibiotics:

- Cosgarea R, Jepsen S, Heumann C. et al. Clinical, microbiological and immunological effects of 3- or 7-day systemic antibiotics adjunctive to subgingival instrumentation in patients with aggressive (stage III/IV grade C) periodontitis: a randomized placebo-controlled clinical trial. J Clin Periodontol 2022; DOI: 10.1111/jcpe.13676.

Periodontics and other disciplines:

Periodontal Endodontic lesions:

- Herrera D, Retamal-Valdes B, Alonso B, Feres M. Acute periodontal lesions (periodontal abscesses and necrotizing periodontal diseases) and endo-periodontal lesions. J Periodontol. 2018 Jun;89 Suppl 1:S85-S102. doi: 10.1002/JPER.16-0642. PMID: 29926942.

Periodontics and orthodontics:

- Kao RT, Curtis DA, Kim DM, Lin GH, Wang CW, Cobb CM, Hsu YT, Kan J, Velasquez D, Avila-Ortiz G, Yu SH, Mandelaris GA, Rosen PS, Evans M, Gunsolley J, Goss K, Ambruster J, Wang HL. American Academy of Periodontology best evidence consensus statement on modifying periodontal phenotype in preparation for orthodontic and restorative treatment. J Periodontol. 2020 Mar;91(3):289-298. doi: 10.1002/JPER.19-0577. Epub 2020 Jan 13. PMID: 31943219.

Periodontics and prosthodontics:

Periodontics and Systemic conditions:

- Kwoen MJ, Park JH, Kim KS, Lee JR, Kim JW, Lee H, Lee HJ. Association between periodontal disease, tooth extraction, and medication-related osteonecrosis of the jaw in women receiving bisphosphonates: A national cohort-based study. J Periodontol. 2023 Jan;94(1):98-107. doi: 10.1002/JPER.21-0611. Epub 2022 Aug 12. PMID: 35856336.

Advanced Periodontal Procedures:

Periodontal surgery: When, Why and outcomes.

Treatment of furcation areas:

Regenerative Treatment of intrabony defects and furcation defects: biomaterials, factors affecting predictability of treatment, effect of treatment on long term prognosis

- Simonelli A, Severi M, Trombelli L, Farina R. Minimal invasiveness in the surgical treatment of intraosseous defects: A systematic review. Periodontol 2000. 2023 Feb;91(1):20-44. doi: 10.1111/prd.12467. Epub 2023 Jan 22. PMID: 36683013.

- Clinical concepts for regenerative therapy in intrabony defects. Cortellini ,& Tonetti. Periodontology 2000, Vol. 68, 2015, 282–307
- Focus on intrabony defects: guided tissue regeneration, Cortellini ,& Tonetti Periodontology 2000, Vol. 22, 2000, 104–132.

Treatment of mucogingival defects:

- Chambrone L, Barootchi S, Avila-Ortiz G. Efficacy of biologics in root coverage and gingival augmentation therapy: An American Academy of Periodontology best evidence systematic review and network meta-analysis. J Periodontol. 2022 Dec;93(12):1771-1802. doi: 10.1002/JPER.22-0075. Epub 2022 Oct 24. PMID: 36279123.
- McGuire MK, Janakievski J, Scheyer ET, Velásquez D, Gunsolley JC, Heard RH, Morelli T. Efficacy of a harvest graft substitute for recession coverage and soft tissue volume augmentation: A randomized controlled trial. J Periodontol. 2022 Mar;93(3):333-342. doi: 10.1002/JPER.21-0131. Epub 2021 Aug 16. PMID: 34287902.
- Avila-Ortiz G, Ambruster J, Barootchi S, Chambrone L, Chen CY, Dixon DR, Geisinger ML, Giannobile WV, Goss K, Gunsolley JC, Heard RH, Kim DM, Mandelaris GA, Monje A, Nevins ML, Palaiologou-Gallis A, Rosen PS, Scheyer ET, Suarez-Lopez Del Amo F, Tavelli L, Velasquez D, Wang HL, Mealey BL. American Academy of Periodontology best evidence consensus statement on the use of biologics in clinical practice. J Periodontol. 2022 Dec;93(12):1763-1770. doi: 10.1002/JPER.22-0361. Epub 2022 Oct 24. PMID: 36279407.
- Tavelli L, Majzoub J, Kauffmann F, Rodriguez MV, Mancini L, Chan HL, Kripfgans OD, Giannobile WV, Wang HL, Barootchi S. Coronally advanced flap versus tunnel technique for the treatment of peri-implant soft tissue dehiscences with the connective tissue graft: A randomized, controlled clinical trial. J Clin Periodontol. 2023 Jul;50(7):980-995. doi: 10.1111/jcpe.13806. Epub 2023 Apr 4. PMID: 36935199.
- Stefanini M, Marzadori M, Aroca S, Felice P, Sangiorgi M, Zucchelli G. Decision making in root-coverage procedures for the esthetic outcome. Periodontol 2000. 2018 Jun;77(1):54-64. doi: 10.1111/prd.12205. Epub 2018 Mar 4. PMID: 29504173.
- Zucchelli G, Mounssif I. Periodontal plastic surgery. Periodontol 2000 2015;68:333–68.
- Zucchelli G, Tavelli L, Barootchi S, Stefanini M, Rasperini G, Valles C, Nart J, Wang HL. The influence of tooth location on the outcomes of multiple adjacent gingival recessions treated with coronally advanced flap: A multicenter re-analysis study. J Periodontol. 2019 Nov;90(11):1244-1251. doi: 10.1002/JPER.18-0732. Epub 2019 Jul 1. PMID: 31177536.
- Chambrone L, Tatakis DN. Periodontal soft tissue root coverage procedures: a systematic review from the AAP Regeneration Workshop. J Periodontol. 2015 Feb;86(2 Suppl):S8-51. doi: 10.1902/jop.2015.130674. PMID: 25644302.
- Pietruska, M.; Skurska, A.; Podlewski, Ł.; Milewski, R.; Pietruski, J. Clinical evaluation of Miller class I and II recessions treatment with the use of modified coronally advanced tunnel technique with either collagen matrix or subepithelial connective tissue graft: A randomized clinical study. *J. Clin. Periodontol.* **2019**, *46*, 86–95. [**Google Scholar**] [**CrossRef**] [**PubMed**][**Green Version**]
- Song YW, Kim S, Waller T, Cha JK, Cho SW, Jung UW, Thoma DS. Soft tissue substitutes to increase gingival thickness: Histologic and volumetric analyses in dogs. J Clin Periodontol. 2019 Jan;46(1):96-104. doi: 10.1111/jcpe.13034. Epub 2018 Nov 29. PMID: 30372547.

Crown lengthening procedures:

Healing following extraction and site preservation:

- Suárez-López Del Amo F, Monje A. Efficacy of biologics for alveolar ridge preservation/reconstruction and implant site development: An American Academy of Periodontology best evidence systematic review. J Periodontol. 2022 Dec;93(12):1827-1847. doi: 10.1002/JPER.22-0069. Epub 2022 Oct 24. PMID: 35841608.

- Alveolar socket healing: what can we learn? Araújo MG, Silva CO, Misawa M, Sukekava F.Periodontol 2000. 2015 Jun;68(1):122-34.

Dental Implants:

Implant surface configuration:

Osseointegration:

- Pellegrini G, Francetti L, Barbaro B, Del Fabbro M. Novel surfaces and osseointegration in implant dentistry. J Investig Clin Dent. 2018 Nov;9(4):e12349. doi: 10.1111/jicd.12349. Epub 2018 Jul 4. PMID: 29971928.

Transmucosal attachment:

- Imber, J.-C., Roccuzzo, A., Stähli, A., Bosshardt, D. D., Muñoz, F., Ramseier, C. A., Lang, N. P., & Sculean, A. (2023). Spontaneous regeneration of keratinized tissue at implants and teeth. *Journal of Clinical Periodontology*, 50(8), 1064–1074. https://doi.org/10.1111/jcpe.13820
- Thoma DS, Gil A, Hämmerle CHF, Jung RE. Management and prevention of soft tissue complications in implant dentistry. Periodontol 2000. 2022 Feb;88(1):116-129. doi: 10.1111/prd.12415. PMID: 35103320; PMCID: PMC9306802.

Guided bone regeneration around implants: Biomaterials, indications, predictability.

Ridge augmentation

- Urban IA, Montero E, Amerio E, Palombo D, Monje A. Techniques on vertical ridge augmentation: Indications and effectiveness. Periodontol 2000. 2023 Jan 31. doi: 10.1111/prd.12471. Epub ahead of print. PMID: 36721380.
- Moy PK, Aghaloo T. Risk factors in bone augmentation procedures. Periodontol 2000. 2019 Oct;81(1):76-90. doi: 10.1111/prd.12285. PMID: 31407434.

- The Fate of Lateral Ridge Augmentation: A Systematic Review and Meta-Analysis. AlNayef et al. 2018, Quintessence Publishing, volume 33, Number 3, 2018
- An Updated Decision Tree for Vertical Bone Augmentation, Misch et al. 2021 Int J Periodontics Restorative Dent 2021;41:11–21.
- Guided bone regeneration: materials and biological mechanisms revisited Elgali et al. Eur J Oral Sci 2017; 125: 315–337
- Horizontal bone augmentation by means of guided bone regeneration BENIC & HAMMERLE Periodontology 2000, Vol. 66, 2014, 13–40.
- Vertical ridge augmentation in the esthetic zone ROCCHIETTA et al. Periodontology 2000, Vol. 77, 2018, 241–255.
- Effectiveness of vertical ridge augmentation interventions: A systematic review and meta-analysis Urban et al. J Clin Periodontol. 2019;46(Suppl. 21):319–339.

Timing of implant placement:

- Implant placement post extraction in esthetic single tooth sites: when immediate, when early, when late? Buser et al. Periodontol 2000 : 2017 Feb;73(1):84-102.

Implants in esthetic areas:

- Zucchelli G, Tavelli L, Stefanini M, Barootchi S, Mazzotti C, Gori G, Wang HL. Classification of facial peri-implant soft tissue dehiscence/deficiencies at single implant sites in the esthetic zone. J Periodontol. 2019 Oct;90(10):1116-1124. doi: 10.1002/JPER.18-0616. Epub 2019 Jun 3. PMID: 31087334.
- Alrmali A, Stuhr S, Saleh MHA, Latimer J, Kan J, Tarnow DP, Wang HL. A decision-making tree for evaluating an esthetically compromised single dental implant. J Esthet Restor Dent. 2023 Jul 14. doi: 10.1111/jerd.13100. Epub ahead of print. PMID: 37449656.
- G. Zucchelli, P. Sharma, I. Mounssif. Esthetics in periodontics and implantology. Periodontology, 77 (2018), pp. 7-18

Implant success and survival and risk factors:

- Tomasi C, Derks J. Etiology, occurrence, and consequences of implant loss. Periodontol 2000. 2022 Feb;88(1):13-35. doi: 10.1111/prd.12408. PMID: 35103324; PMCID: PMC9306999.
- Ramanauskaite A, Becker J, Sader R, Schwarz F. Anatomic factors as contributing risk factors in implant therapy. Periodontol 2000. 2019 Oct;81(1):64-75. doi: 10.1111/prd.12284. PMID: 31407439.
- Darby I. Risk factors for periodontitis & peri-implantitis. Periodontol 2000. 2022;90:9-12. doi: 10.1111/prd.12447
- Avila-Ortiz, G, Vegh, D, Mukaddam, K, Galindo-Moreno, P, Pjetursson, B, Payer, M. Treatment alternatives for the rehabilitation of the posterior edentulous maxilla. *Periodontol 2000*. 2023; 00: 1-22. doi:10.1111/prd.12507
- Roca-Millan E, Estrugo-Devesa A, Merlos A, Jané-Salas E, Vinuesa T, López-López J. Systemic Antibiotic Prophylaxis to Reduce Early Implant Failure: A Systematic Review and Meta-Analysis. Antibiotics (Basel). 2021 Jun 10;10(6):698. doi: 10.3390/antibiotics10060698. PMID: 34200841; PMCID: PMC8230529.

Periimplant mucositis and periimplantitis: risk factors, diagnosis and management:

- Ramanauskaite A, Becker K, Schwarz F. Clinical characteristics of peri-implant mucositis and peri-implantitis. Clin Oral Implants Res. 2018 Jun;29(6):551-556. doi: 10.1111/clr.13152. Epub 2018 Apr 16. PMID: 29659049.

- Renvert, S.; Persson, G.R.; Pirih, F.Q.; Camargo, P.M. Peri-implant health, peri-implant mucositis, and peri-implantitis: Case definitions and diagnostic considerations. *J. Clin. Periodontol.* **2018**, *45* (Suppl. 20), S278–S285.
- Ramanauskaite, A.; Daugela, P.; Faria de Almeida, R.; Saulacic, N. Surgical Non-Regenerative Treatments for Peri-Implantitis: A Systematic Review. *J. Oral Maxillofac. Res.* **2016**, *7*, e14.
- Suarez-Lopez Del Amo, F.; Yu, S.H.; Wang, H.L. Non-Surgical Therapy for Peri-Implant Diseases: A Systematic Review. *J. Oral Maxillofac. Res.* **2016**, *7*, e13.

- Nart, J.; Pons, R.; Valles, C.; Esmatges, A.; Sanz-Martin, I.; Monje, A. Non-surgical therapeutic outcomes of peri-implantitis: 12-month results. *Clin. Oral Investig.* **2020**, *24*, 675–682.
- Roccuzzo, A.; Stahli, A.; Monje, A.; Sculean, A.; Salvi, G.E. Peri-Implantitis: A Clinical Update on Prevalence and Surgical Treatment Outcomes. *J. Clin. Med.* **2021**, *10*, 1107.
- Monje, A.; Mesquita, P.F. Clinical considerations in the surgical management of peri-implantitis lesions in the esthetic zone. *J. Esthet. Restor. Dent.* **2022**. *Online ahead of print*. [**Google Scholar**] [**CrossRef**]

Guided Implant Surgery:

- Romandini, M, Ruales-Carrera, E, Sadilina, S, Hämmerle, CHF, Sanz, M. Minimal invasiveness at dental implant placement: A systematic review with meta-analyses on flapless fully guided surgery. *Periodontol 2000*. 2023; 91: 89-112. doi: 10.1111/prd.12440