Radiology (Basic Principles)

Year 2 — Bachelor of Dental Surgery

Reference and Resource List — Chapters 1 to 12

Supporting the MCQ, SBA, SAQ and flashcard question bank

BM Education FZE

Disclaimer

Questions in this bank were generated with the assistance of artificial intelligence and reviewed against the references listed. They are provided for educational revision only, are not a substitute for prescribed textbooks, clinical guidelines or supervised clinical training, and no warranty is given as to their accuracy or completeness.

References are presented in Vancouver style. Part 1 lists the core sources that apply across the whole subject; Part 2 lists, for each chapter, the relevant sections of those core texts together with sources specific to that chapter. Numbers in square brackets in Part 2 refer to the core list in Part 1.

PART 1 — CORE REFERENCES (ALL CHAPTERS)

1.1 Principal dental radiology textbooks

1. Whaites E, Drage N. Essentials of Dental Radiography and Radiology. 6th ed. Edinburgh: Elsevier; 2021.

2. Lam EWN, Mallya SM, editors. White and Pharoah's Oral Radiology: Principles and Interpretation. 9th ed. St Louis: Elsevier; 2025.

3. Iannucci JM, Howerton LJ. Dental Radiography: Principles and Techniques. 6th ed. St Louis: Elsevier; 2022.

4. Whaites E, Drage N. Radiography and Radiology for Dental Care Professionals. 4th ed. Edinburgh: Elsevier; 2020.

5. Frommer HH, Stabulas-Savage JJ. Radiology for the Dental Professional. 10th ed. St Louis: Elsevier; 2018.

6. Karjodkar FR. Textbook of Dental and Maxillofacial Radiology. 3rd ed. New Delhi: Jaypee Brothers Medical Publishers; 2019.

7. Ghom AG, Ghom SA. Textbook of Oral Radiology. 2nd ed. New Delhi: Elsevier India; 2018.

8. Langland OE, Langlais RP, Preece JW. Principles of Dental Imaging. 2nd ed. Philadelphia: Lippincott Williams & Wilkins; 2002.

9. Koong B, editor. Atlas of Oral and Maxillofacial Radiology. Chichester: Wiley Blackwell; 2017.

1.2 Radiation physics, radiobiology and imaging science

10. Bushberg JT, Seibert JA, Leidholdt EM Jr, Boone JM. The Essential Physics of Medical Imaging. 4th ed. Philadelphia: Wolters Kluwer; 2021.

11. Bushong SC. Radiologic Science for Technologists: Physics, Biology, and Protection. 12th ed. St Louis: Elsevier; 2021.

12. Hall EJ, Giaccia AJ. Radiobiology for the Radiologist. 8th ed. Philadelphia: Wolters Kluwer; 2018.

13. Dendy PP, Heaton B. Physics for Diagnostic Radiology. 3rd ed. Boca Raton (FL): CRC Press; 2012.

14. Graham DT, Cloke P, Vosper M. Principles and Applications of Radiological Physics. 6th ed. Edinburgh: Churchill Livingstone Elsevier; 2011.

15. Dance DR, Christofides S, Maidment ADA, McLean ID, Ng KH, editors. Diagnostic Radiology Physics: A Handbook for Teachers and Students. Vienna: International Atomic Energy Agency; 2014. Available from: https://www.iaea.org

1.3 Radiation protection standards, regulation and dose data

16. International Commission on Radiological Protection. The 2007 Recommendations of the International Commission on Radiological Protection. ICRP Publication 103. Ann ICRP. 2007;37(2–4):1–332.

17. International Commission on Radiological Protection. Radiological Protection in Medicine. ICRP Publication 105. Ann ICRP. 2007;37(6):1–63.

18. National Council on Radiation Protection and Measurements. Radiation Protection in Dentistry and Oral & Maxillofacial Imaging. NCRP Report No. 177. Bethesda (MD): NCRP; 2019. Available from: https://ncrponline.org

19. United Nations Scientific Committee on the Effects of Atomic Radiation. Sources, Effects and Risks of Ionizing Radiation: UNSCEAR 2020/2021 Report to the General Assembly. New York: United Nations; 2022. Available from: https://www.unscear.org

20. International Atomic Energy Agency. Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards. IAEA Safety Standards Series No. GSR Part 3. Vienna: IAEA; 2014.

21. European Commission. European Guidelines on Radiation Protection in Dental Radiology: The Safe Use of Radiographs in Dental Practice. Radiation Protection No. 136. Luxembourg: Office for Official Publications of the European Communities; 2004.

22. European Commission. Cone Beam CT for Dental and Maxillofacial Radiology: Evidence-Based Guidelines. Radiation Protection No. 172. Luxembourg: European Commission; 2012.

23. Public Health England, Faculty of General Dental Practice (UK). Guidance Notes for Dental Practitioners on the Safe Use of X-ray Equipment. 2nd ed. London: PHE and FGDP(UK); 2020. Available from: https://cgdent.uk

24. The Ionising Radiation (Medical Exposure) Regulations 2017. SI 2017/1322. London: The Stationery Office; 2017. Available from: https://www.legislation.gov.uk/uksi/2017/1322

25. The Ionising Radiations Regulations 2017. SI 2017/1075. London: The Stationery Office; 2017. Available from: https://www.legislation.gov.uk/uksi/2017/1075

26. Atomic Energy Regulatory Board. Safety Code for Medical Diagnostic X-ray Equipment and Installations. AERB/RF-MED/SC-3 (Rev. 2). Mumbai: AERB; 2016. Available from: https://www.aerb.gov.in

1.4 Justification, patient selection and clinical recommendations

27. Horner K, Eaton KA, editors. Selection Criteria for Dental Radiography. 3rd ed. London: Faculty of General Dental Practice (UK); 2018. Available from: https://cgdent.uk

28. Benavides E, Krecioch JR, Allareddy T, et al. American Dental Association and American Academy of Oral and Maxillofacial Radiology patient selection for dental radiography and cone-beam computed tomography: clinical recommendations. J Am Dent Assoc. 2026;157(1):20–35.

29. Benavides E, Krecioch JR, Connolly RT, et al. Optimizing radiation safety in dentistry: clinical recommendations and regulatory considerations. J Am Dent Assoc. 2024;155(4):280–93.

30. Benavides E, Bhula A, Gohel A, et al. Patient shielding during dentomaxillofacial radiography: recommendations from the American Academy of Oral and Maxillofacial Radiology. J Am Dent Assoc. 2023;154(9):826–35.

31. American Dental Association Council on Scientific Affairs, US Food and Drug Administration. Dental Radiographic Examinations: Recommendations for Patient Selection and Limiting Radiation Exposure. Chicago (IL): American Dental Association; 2012.

32. The Royal College of Radiologists. iRefer: Making the Best Use of Clinical Radiology. 8th ed. London: RCR; 2017. Available from: https://www.rcr.ac.uk

1.5 Infection prevention and control in the imaging setting

33. Kohn WG, Collins AS, Cleveland JL, Harte JA, Eklund KJ, Malvitz DM. Guidelines for infection control in dental health-care settings — 2003. MMWR Recomm Rep. 2003;52(RR-17):1–61.

34. Centers for Disease Control and Prevention. Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care. Atlanta (GA): CDC; 2016. Available from: https://www.cdc.gov

35. Department of Health. Health Technical Memorandum 01-05: Decontamination in Primary Care Dental Practices. London: Department of Health; 2013. Available from: https://www.gov.uk

36. World Health Organization. WHO Guidelines on Hand Hygiene in Health Care. Geneva: WHO; 2009. Available from: https://www.who.int

1.6 Applied anatomy, pathology and interpretation support

37. Norton NS. Netter's Head and Neck Anatomy for Dentistry. 3rd ed. Philadelphia: Elsevier; 2017.

38. Berkovitz BKB, Holland GR, Moxham BJ. Oral Anatomy, Histology and Embryology. 5th ed. Edinburgh: Elsevier; 2017.

39. Odell EW. Cawson's Essentials of Oral Pathology and Oral Medicine. 10th ed. Edinburgh: Elsevier; 2024.

40. Wood NK, Goaz PW. Differential Diagnosis of Oral and Maxillofacial Lesions. 5th ed. St Louis: Mosby; 1997.

41. Odell EW, editor. Clinical Problem Solving in Dentistry. 4th ed. Edinburgh: Elsevier; 2020.

1.7 Curriculum and professional standards

42. General Dental Council. Preparing for Practice: Dental Team Learning Outcomes for Registration. London: GDC; 2015. Available from: https://www.gdc-uk.org

43. Field JC, Cowpe JG, Walmsley AD. The graduating European dentist: a new undergraduate curriculum framework. Eur J Dent Educ. 2017;21 Suppl 1:2–10.

44. Dental Council of India. Bachelor of Dental Surgery (BDS) Course Regulations, 2007 (as amended). New Delhi: DCI.

1.8 Key journals for currency

Dentomaxillofacial Radiology · Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology · Journal of the American Dental Association · British Dental Journal · British Journal of Radiology · Journal of Dentistry · Clinical Oral Investigations · Radiation Protection Dosimetry · Imaging Science in Dentistry · Caries Research · International Endodontic Journal · Journal of Dental Research

PART 2 — CHAPTER-SPECIFIC REFERENCES

Chapter 1 — Introduction to Dental Radiology

1.1 Scope and role in dentistry: diagnostic role in caries, endodontics, periodontics, trauma and pathology; limitations of the two-dimensional image; indications versus routine radiographs · 1.2 Core terminology: radiolucent and radiopaque, contrast, density, definition, magnification, distortion, artefact, projection geometry

> **Core texts:** [1] Introductory chapters on the radiographic image and its uses · [2] Ch. 15 (Prescribing Diagnostic Imaging) and Ch. 16 (Principles of Radiographic Interpretation) · [3] Introductory chapters on radiation basics and terminology · [4] Introductory chapters · [27] · [28] · [42]

Additional

- Horner K. Review article: radiation protection in dental radiology. Br J Radiol. 1994;67(803):1041–9.
- Yeung AWK. The "as low as reasonably achievable" (ALARA) principle: a brief historical overview and a bibliometric analysis of the most cited publications. Radioprotection. 2019;54(2):103–9.
- Espelid I, Mejàre I, Weerheijm K. EAPD guidelines for use of radiographs in children. Eur J Paediatr Dent. 2003;4(1):40–8.
- Rushton VE, Horner K. The use of panoramic radiology in dental practice. J Dent. 1996;24(3):185–201.

- Brown J, Jacobs R, Levring Jäghagen E, et al. Basic training requirements for the use of dental CBCT by dentists: a position paper prepared by the European Academy of DentoMaxilloFacial Radiology. Dentomaxillofac Radiol. 2014;43(1):20130291.

Chapter 2 — Atomic Structure, Radiation and the Production of X-rays

2.1 Atomic structure · 2.2 Electromagnetic radiation basics · 2.3 Production of X-rays · 2.4 X-ray beam properties · 2.5 Factors affecting the X-ray beam

> **Core texts:** [1] Chapters on the nature of ionising radiation and X-ray production · [2] Ch. 1 (Physics) · [3] Chapters on radiation physics and the dental X-ray beam · [10] Chapters on radiation physics and X-ray production · [11] · [14] · [15]

Additional

- Seibert JA. X-ray imaging physics for nuclear medicine technologists. Part 1: basic principles of X-ray production. J Nucl Med Technol. 2004;32(3):139–47.
- Behling R. Modern Diagnostic X-Ray Sources: Technology, Manufacturing, Reliability. Boca Raton (FL): CRC Press; 2015.
- Hendee WR, Ritenour ER. Medical Imaging Physics. 4th ed. New York: Wiley-Liss; 2002.
- Attix FH. Introduction to Radiological Physics and Radiation Dosimetry. New York: Wiley; 1986.
- Berger MJ, Hubbell JH, Seltzer SM, et al. XCOM: Photon Cross Sections Database. NIST Standard Reference Database 8. Gaithersburg (MD): National Institute of Standards and Technology. Available from: https://www.nist.gov

Chapter 3 — X-ray Machine, Unit Components and Control Panel

3.1 Dental X-ray unit parts: tube head, extension arm, control panel · 3.2 Position-indicating device: cone shapes and rectangular collimation · 3.3 Transformers and rectification · 3.4 Selection of exposure parameters

> **Core texts:** [1] Chapters on X-ray equipment and exposure factors · [2] Ch. 1 (Physics) and Ch. 3 (Safety and Protection) · [3] Chapters on the dental X-ray machine and exposure factor selection · [5] · [8] · [18] · [23]

Additional

- Behling R. Modern Diagnostic X-Ray Sources: Technology, Manufacturing, Reliability. Boca Raton (FL): CRC Press; 2015.
- Horner K, Hirschmann PN. Dose reduction in dental radiography. J Dent. 1990;18(4):171–84.
- Gray JE, Bailey ED, Ludlow JB. Dental staff doses with handheld dental intraoral X-ray units. Health Phys. 2012;102(2):137–42.
- Makdissi J, Pawar RR, Johnson B, Chong BS. The effects of device position on the operator's radiation dose when using a handheld portable X-ray device. Dentomaxillofac Radiol. 2016;45(3):20150245.
- Seibert JA. X-ray imaging physics for nuclear medicine technologists. Part 1: basic principles of X-ray production. J Nucl Med Technol. 2004;32(3):139–47.

Chapter 4 — Attenuation and Image Formation

4.1 Attenuation mechanisms · 4.2 Key interactions at BDS level · 4.3 Factors affecting attenuation · 4.4 The concept of image formation

> **Core texts:** [1] Chapters on the interaction of X-rays with matter and image formation · [2] Ch. 1 (Physics) · [3] Chapters on radiation interactions · [10] · [11] · [13] · [15]

Additional

- Seibert JA, Boone JM. X-ray imaging physics for nuclear medicine technologists. Part 2: X-ray interactions and image formation. J Nucl Med Technol. 2005;33(1):3–18.

- Hubbell JH, Seltzer SM. Tables of X-Ray Mass Attenuation Coefficients and Mass Energy-Absorption Coefficients. NISTIR 5632. Gaithersburg (MD): National Institute of Standards and Technology; 1995. Available from: https://www.nist.gov
- Attix FH. Introduction to Radiological Physics and Radiation Dosimetry. New York: Wiley; 1986.
- Hendee WR, Ritenour ER. Medical Imaging Physics. 4th ed. New York: Wiley-Liss; 2002.

Chapter 5 — Image Receptors: Films and Digital Sensors

5.1 Conventional intraoral film · 5.2 Digital imaging systems · 5.3 Image quality factors for receptors

> **Core texts:** [1] Chapters on film, digital receptors and image quality · [2] Ch. 4 (Image Receptors) · [3] Chapters on dental film and digital imaging · [4] · [5] · [8]

Additional

- Wenzel A, Møystad A. Work flow with digital intraoral radiography: a systematic review. Acta Odontol Scand. 2010;68(2):106–14.
- Wenzel A. A review of dentists' use of digital radiography and caries diagnosis with digital systems. Dentomaxillofac Radiol. 2006;35(5):307–14.
- Farman AG, Farman TT. A comparison of 18 different X-ray detectors currently used in dentistry. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2005;99(4):485–9.
- Bansal GJ. Digital radiography: a comparison with modern conventional imaging. Postgrad Med J. 2006;82(969):425–8.
- Brennan J. An introduction to digital radiography in dentistry. J Orthod. 2002;29(1):66–9.
- International Organization for Standardization. ISO 3665: Photography — Intra-oral dental radiographic film and film packets — Specification. Geneva: ISO; 2011.

Chapter 6 — Intraoral Radiographic Techniques

6.1 Basic principles of projection geometry · 6.2 Periapical radiographs · 6.3 Bitewing radiographs · 6.4 Occlusal radiographs · 6.5 Localisation techniques

> **Core texts:** [1] Chapters on periapical, bitewing and occlusal radiography · [2] Ch. 5 (Projection Geometry) and Ch. 6 (Intraoral Projections) · [3] Chapters on the paralleling and bisecting-angle techniques · [4] · [5] · [27]

Additional

- Forsberg J. A comparison of the paralleling and bisecting-angle radiographic techniques in endodontics. Int Endod J. 1987;20(4):177–82.
- Forsberg J, Halse A. Radiographic simulation of a periapical lesion comparing the paralleling and the bisecting-angle techniques. Int Endod J. 1994;27(3):133–8.
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- Clark CA. A method of ascertaining the relative position of unerupted teeth by means of film radiographs. Proc R Soc Med. 1910;3(Odontol Sect):87–90.
- Pitts NB, Rimmer PA. An in vivo comparison of radiographic and directly assessed clinical caries status of posterior approximal surfaces in primary and permanent teeth. Caries Res. 1992;26(2):146–52.

Chapter 7 — Processing of Radiographs

7.1 Darkroom principles · 7.2 Manual processing steps · 7.3 Processing solutions · 7.4 Automatic processing · 7.5 Digital processing basics

> **Core texts:** [1] Chapters on image processing, darkroom design and digital image handling · [2] Ch. 4 (Image Receptors) and Ch. 14 (Quality Assurance and Infection Control) · [3] Chapters on film processing and the darkroom · [5] · [8] · [33] · [35]

Additional

- Ludlow JB, Platin E. Densitometric comparisons of Ultra-speed, Ektaspeed, and Ektaspeed Plus intraoral films for two processing conditions. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1995;79(1):105–13.
- Metsälä E, Henner A, Ekholm M. Quality assurance in digital dental imaging: a systematic review. Acta Odontol Scand. 2014;72(5):362–71.
- Hellén-Halme K, Petersson A, Warfvinge G, Nilsson M. Effect of ambient light and monitor brightness and contrast settings on the detection of approximal caries in digital radiographs: an in vitro study. Dentomaxillofac Radiol. 2008;37(7):380–4.
- Health and Safety Executive. EH40/2005 Workplace Exposure Limits. 4th ed. Norwich: HSE Books. Available from: https://www.hse.gov.uk

Chapter 8 — Radiographic Quality and Errors

8.1 Technique errors · 8.2 Processing errors · 8.3 Digital errors · 8.4 Quality assurance

> **Core texts:** [1] Chapters on faults, image quality and quality assurance · [2] Ch. 14 (Quality Assurance and Infection Control) · [3] Chapters on radiographic faults and their correction · [5] · [23] · [27] · [29]

Additional

- Metsälä E, Henner A, Ekholm M. Quality assurance in digital dental imaging: a systematic review. Acta Odontol Scand. 2014;72(5):362–71.
- Rushton VE, Horner K, Worthington HV. The quality of panoramic radiographs in a sample of general dental practices. Br Dent J. 1999;186(12):630–3.
- Bird R, Donnell C. Making the grade. Br Dent J. 2021;230(3):117.
- Peker I, Alkurt MT. Evaluation of radiographic errors made by undergraduate dental students in periapical radiography. N Y State Dent J. 2009;75(5):45–8.
- Hellén-Halme K, Petersson A, Warfvinge G, Nilsson M. Effect of ambient light and monitor brightness and contrast settings on the detection of approximal caries in digital radiographs: an in vitro study. Dentomaxillofac Radiol. 2008;37(7):380–4.

Chapter 9 — Radiation Biology and Hazards

9.1 Biological effects of radiation · 9.2 Somatic and genetic effects · 9.3 Deterministic and stochastic effects · 9.4 Effects in pregnancy and in children

> **Core texts:** [1] Chapters on the biological effects of ionising radiation and dose · [2] Ch. 2 (Biologic Effects of Ionizing Radiation) · [12] · [16] · [18] · [19]

Additional

- Preston DL, Ron E, Tokuoka S, et al. Solid cancer incidence in atomic bomb survivors: 1958–1998. Radiat Res. 2007;168(1):1–64.
- Pearce MS, Salotti JA, Little MP, et al. Radiation exposure from CT scans in childhood and subsequent risk of leukaemia and brain tumours: a retrospective cohort study. Lancet. 2012;380(9840):499–505.
- Lubin JH, Adams MJ, Shore R, et al. Thyroid cancer following childhood low-dose radiation exposure: a pooled analysis of nine cohorts. J Clin Endocrinol Metab. 2017;102(7):2575–83.
- Ludlow JB, Davies-Ludlow LE, White SC. Patient risk related to common dental radiographic examinations. J Am Dent Assoc. 2008;139(9):1237–43.
- Memon A, Godward S, Williams D, Siddique I, Al-Saleh K. Dental X-rays and the risk of thyroid cancer: a case-control study. Acta Oncol. 2010;49(4):447–53.
- Claus EB, Calvocoressi L, Bondy ML, Schildkraut JM, Wiemels JL, Wrensch M. Dental X-rays and risk of meningioma. Cancer. 2012;118(18):4530–7.
- Neta G, Rajaraman P, Berrington de Gonzalez A, et al. A prospective study of medical diagnostic radiography and risk of thyroid cancer. Am J Epidemiol. 2013;177(8):800–9.

Chapter 10 — Radiation Protection, Dose Reduction, Operator Protection and Infection Control

10.1 Principles of radiation protection · 10.2 Reducing patient dose · 10.3 Operator protection · 10.4 Infection control in radiology

> **Core texts:** [1] Chapters on radiation protection and dose reduction · [2] Ch. 3 (Safety and Protection) and Ch. 14 (Quality Assurance and Infection Control) · [16] · [18] · [21] · [23] · [24] · [25] · [26] · [29] · [30] · [33] · [34]

Additional

- Lurie AG, Kantor ML. Contemporary radiation protection in dentistry: recommendations of National Council on Radiation Protection and Measurements Report No. 177. J Am Dent Assoc. 2020;151(10):716–9.
- Johnson KB, Ludlow JB. Intraoral radiographs: a comparison of dose and risk reduction with collimation and thyroid shielding. J Am Dent Assoc. 2020;151(10):726–34.
- Johnson KB, Ludlow JB, Mauriello SM, Platin E. Reducing the risk of intraoral radiographic imaging with collimation and thyroid shielding. Gen Dent. 2014;62(4):34–40.
- Granlund C, Thilander-Klang A, Ylhan B, Lofthag-Hansen S, Ekestubbe A. Absorbed organ and effective doses from digital intra-oral and panoramic radiography applying the ICRP 103 recommendations for effective dose estimations. Br J Radiol. 2016;89(1066):20151052.
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- Hokett SD, Honey JR, Ruiz F, Baisden MK, Hoen MM. Assessing the effectiveness of direct digital radiography barrier sheaths and finger cots. J Am Dent Assoc. 2000;131(4):463–7.
- Alliance for Radiation Safety in Pediatric Imaging. Image Gently: back to basics in dental radiology. Available from: https://www.imagegently.org

Chapter 11 — Interpretation Basics (Introductory Image Reading)

11.1 Normal radiographic anatomy · 11.2 Caries interpretation basics · 11.3 Periapical interpretation basics · 11.4 Periodontal bone loss basics · 11.5 Common radiopacities and radiolucencies

> **Core texts:** [1] Chapters on normal anatomy and the radiographic assessment of caries, periapical and periodontal disease · [2] Ch. 13 (Radiographic Anatomy) and Ch. 16 (Principles of Radiographic Interpretation) · [9] · [37] · [38] · [39] · [40] · [41]

Additional

- Wenzel A. Bitewing and digital bitewing radiography for detection of caries lesions. J Dent Res. 2004;83 Spec No C:C72–5.
- Schwendicke F, Tzschoppe M, Paris S. Radiographic caries detection: a systematic review and meta-analysis. J Dent. 2015;43(8):924–33.
- Bader JD, Shugars DA, Bonito AJ. A systematic review of the performance of methods for identifying carious lesions. J Public Health Dent. 2002;62(4):201–13.
- Bender IB, Seltzer S. Roentgenographic and direct observation of experimental lesions in bone. J Am Dent Assoc. 1961;62:152–60.
- Brynolf I. A histological and roentgenological study of the periapical region of human upper incisors. Odontol Revy. 1967;18(Suppl 11).
- Estrela C, Bueno MR, Leles CR, Azevedo B, Azevedo JR. Accuracy of cone beam computed tomography and panoramic and periapical radiography for detection of apical periodontitis. J Endod. 2008;34(3):273–9.
- Tonetti MS, Greenwell H, Kornman KS. Staging and grading of periodontitis: framework and proposal of a new classification and case definition. J Clin Periodontol. 2018;45(Suppl 20):S149–61.

- Papapanou PN, Sanz M, Buduneli N, et al. Periodontitis: consensus report of workgroup 2 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. J Clin Periodontol. 2018;45(Suppl 20):S162–70.

Chapter 12 — Introduction to Extraoral Imaging

12.1 Panoramic radiography · 12.2 Cephalometrics · 12.3 Cone beam computed tomography awareness

> **Core texts:** [1] Chapters on panoramic radiography, cephalometric radiography and cone beam computed tomography · [2] Ch. 7 (Cephalometric and Skull Imaging), Ch. 8 (Panoramic Imaging) and Ch. 9 (Computed Tomography) · [3] · [9] · [22] · [27] · [28]

Additional

- Rushton VE, Horner K. The use of panoramic radiology in dental practice. J Dent. 1996;24(3):185–201.
- Farman AG, Farman TT. Extraoral and panoramic systems. Dent Clin North Am. 2000;44(2):257–72.
- Broadbent BH. A new X-ray technique and its application to orthodontia. Angle Orthod. 1931;1(2):45–66.
- Downs WB. Variations in facial relationships: their significance in treatment and prognosis. Am J Orthod. 1948;34(10):812–40.
- Steiner CC. Cephalometrics for you and me. Am J Orthod. 1953;39(10):729–55.
- Scarfe WC, Farman AG, Sukovic P. Clinical applications of cone-beam computed tomography in dental practice. J Can Dent Assoc. 2006;72(1):75–80.
- Horner K, O'Malley L, Taylor K, Glenny AM. Guidelines for clinical use of CBCT: a review. Dentomaxillofac Radiol. 2015;44(1):20140225.
- Ludlow JB, Timothy R, Walker C, et al. Effective dose of dental CBCT — a meta analysis of published data and additional data for nine CBCT units. Dentomaxillofac Radiol. 2015;44(1):20140197.
- Fayad MI, Nair M, Levin MD, et al. AAE and AAOMR joint position statement: use of cone beam computed tomography in endodontics — 2015 update. Oral Surg Oral Med Oral Pathol Oral Radiol. 2015;120(4):508–12.
- Brown J, Jacobs R, Levring Jäghagen E, et al. Basic training requirements for the use of dental CBCT by dentists: a position paper prepared by the European Academy of DentoMaxilloFacial Radiology. Dentomaxillofac Radiol. 2014;43(1):20130291.

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