Oral Histology and Embryology

Year 1 — Bachelor of Dental Surgery

Reference and Resource List — Chapters 7 to 43

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 additional chapter-specific reading. Numbers in square brackets in Part 2 refer to the numbered entries in Part 1.

Part 1 — Core references (all chapters)

1.1 Principal oral histology and embryology textbooks

1. Nanci A. Ten Cate's Oral Histology: Development, Structure, and Function. 10th ed. St Louis: Elsevier; 2024.
2. Berkovitz BKB, Holland GR, Moxham BJ. Oral Anatomy, Histology and Embryology. 5th ed. Edinburgh: Elsevier; 2017.
3. Kumar GS, editor. Orban's Oral Histology and Embryology. 15th ed. New Delhi: Elsevier; 2019.
4. Chiego DJ Jr. Essentials of Oral Histology and Embryology: A Clinical Approach. 4th ed. St Louis: Elsevier Mosby; 2014.
5. Bath-Balogh M, Fehrenbach MJ. Illustrated Dental Embryology, Histology, and Anatomy. 4th ed. St Louis: Elsevier Saunders; 2016.
6. Hand AR, Frank ME. Fundamentals of Oral Histology and Physiology. Ames (IA): Wiley Blackwell; 2015.
7. Garant PR. Oral Cells and Tissues. Chicago: Quintessence Publishing; 2003.
8. Chandra S, Chandra S, Chandra G. Textbook of Dental and Oral Histology and Embryology. 2nd ed. New Delhi: Jaypee Brothers Medical Publishers; 2010.
9. Berkovitz BKB, Moxham BJ, Linden RWA, Sloan AJ. Master Dentistry Volume 3: Oral Biology. Edinburgh: Churchill Livingstone Elsevier; 2011.

1.2 General histology, cell biology and laboratory technique

10. Mescher AL. Junqueira's Basic Histology: Text and Atlas. 16th ed. New York: McGraw Hill; 2021.

11. Pawlina W. Ross Histology: A Text and Atlas. 8th ed. Philadelphia: Wolters Kluwer; 2020.
12. Young B, O'Dowd G, Woodford P. Wheater's Functional Histology: A Text and Colour Atlas. 6th ed. Edinburgh: Churchill Livingstone Elsevier; 2014.
13. Kierszenbaum AL, Tres LL. Histology and Cell Biology: An Introduction to Pathology. 5th ed. Philadelphia: Elsevier; 2019.
14. Lowe JS, Anderson PG, Anderson SI. Stevens & Lowe's Human Histology. 5th ed. Edinburgh: Elsevier; 2018.
15. Alberts B, Heald R, Johnson A, Morgan D, Raff M, Roberts K, et al. Molecular Biology of the Cell. 7th ed. New York: W W Norton; 2022.
16. Suvarna SK, Layton C, Bancroft JD, editors. Bancroft's Theory and Practice of Histological Techniques. 8th ed. Amsterdam: Elsevier; 2019.

1.3 General and craniofacial embryology

17. Moore KL, Persaud TVN, Torchia MG. The Developing Human: Clinically Oriented Embryology. 11th ed. Philadelphia: Elsevier; 2020.
18. Sadler TW. Langman's Medical Embryology. 14th ed. Philadelphia: Wolters Kluwer; 2018.
19. Schoenwolf GC, Bleyl SB, Brauer PR, Francis-West PH. Larsen's Human Embryology. 6th ed. Philadelphia: Elsevier; 2021.
20. Carlson BM. Human Embryology and Developmental Biology. 6th ed. St Louis: Elsevier; 2019.
21. Sperber GH, Sperber SM, Guttmann GD. Craniofacial Embryogenetics and Development. 2nd ed. Shelton (CT): People's Medical Publishing House; 2010.

1.4 Dental, oral and head and neck anatomy

22. Nelson SJ. Wheeler's Dental Anatomy, Physiology and Occlusion. 11th ed. St Louis: Elsevier; 2020.
23. Scheid RC, Weiss G. Woelfel's Dental Anatomy. 9th ed. Philadelphia: Wolters Kluwer; 2017.
24. Standring S, editor. Gray's Anatomy: The Anatomical Basis of Clinical Practice. 42nd ed. Amsterdam: Elsevier; 2020.
25. Norton NS. Netter's Head and Neck Anatomy for Dentistry. 4th ed. Philadelphia: Elsevier; 2021.

1.5 Clinical and applied texts

26. Hargreaves KM, Berman LH, editors. Cohen's Pathways of the Pulp. 12th ed. St Louis: Elsevier; 2020.
27. Berglundh T, Giannobile WV, Lang NP, Sanz M, editors. Lindhe's Clinical Periodontology and Implant Dentistry. 7th ed. Oxford: Wiley Blackwell; 2022.
28. Fejerskov O, Nyvad B, Kidd E, editors. Dental Caries: The Disease and Its Clinical Management. 4th ed. Oxford: Wiley Blackwell; 2025.
29. Neville BW, Damm DD, Allen CM, Chi AC. Oral and Maxillofacial Pathology. 5th ed. St Louis: Elsevier; 2023.
30. Odell EW, editor. Cawson's Essentials of Oral Pathology and Oral Medicine. 9th ed. Edinburgh: Elsevier; 2017.
31. Fields HW, Larson BE, Sarver DM, Proffit WR. Contemporary Orthodontics. 7th ed. St Louis: Elsevier; 2025.
32. Cameron AC, Widmer RP, editors. Handbook of Pediatric Dentistry. 5th ed. Edinburgh: Elsevier; 2021.

33. Andreasen JO, Andreasen FM, Andersson L, editors. Textbook and Color Atlas of Traumatic Injuries to the Teeth. 5th ed. Oxford: Wiley Blackwell; 2019.
34. Squier CA, Brogden KA. Human Oral Mucosa: Development, Structure and Function. Ames (IA): Wiley-Blackwell; 2011.
35. Schroeder HE. The Periodontium. Berlin: Springer-Verlag; 1986.
36. Senn DR, Weems RA, editors. Manual of Forensic Odontology. 5th ed. Boca Raton (FL): CRC Press; 2013.

1.6 Professional standards, curricula and clinical guidance

37. General Dental Council. Preparing for practice: dental team learning outcomes for registration. London: GDC; 2015. Available from: https://www.gdc-uk.org
38. Field JC, Cowpe JG, Walmsley AD. The graduating European dentist: a new undergraduate curriculum framework. Eur J Dent Educ. 2017;21 Suppl 1:2–7. Available from: https://www.adee.org
39. Dental Council of India. Bachelor of Dental Surgery (BDS) Course Regulations, 2007 (as amended). New Delhi: DCI.
40. Office for Health Improvement and Disparities, Department of Health and Social Care, NHS England. Delivering better oral health: an evidence-based toolkit for prevention. 4th ed. London: OHID; 2021. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention
41. National Institute for Health and Care Excellence. Dental checks: intervals between oral health reviews. Clinical guideline CG19. London: NICE; 2004. Available from: https://www.nice.org.uk/guidance/cg19
42. Scottish Dental Clinical Effectiveness Programme. Clinical guidance in dentistry. Dundee: SDCEP. Available from: https://www.sdcep.org.uk
43. Royal College of Surgeons of England, Faculty of Dental Surgery. Clinical guidelines and standards. London: RCS England. Available from: https://www.rcseng.ac.uk/dental-faculties/fds/publications-guidelines/clinical-guidelines/
44. World Health Organization. Global oral health status report: towards universal health coverage for oral health by 2030. Geneva: WHO; 2022. Available from: https://www.who.int/publications/i/item/9789240061484

1.7 Key journals for currency

Journal of Dental Research · Archives of Oral Biology · European Journal of Oral Sciences · Journal of Anatomy · The Anatomical Record · Cells Tissues Organs · Developmental Dynamics · Development · Journal of Oral Pathology & Medicine · Periodontology 2000 · Journal of Periodontal Research · International Endodontic Journal · Journal of Endodontics · Caries Research · Journal of Structural Biology · Orthodontics & Craniofacial Research · Journal of Oral Biosciences · Japanese Dental Science Review

Part 2 — Chapter-specific references

Chapter 7 — Development of Palate and Clefts

Primary and secondary palate formation · Elevation and fusion of the palatal shelves · Cleft lip and cleft palate: embryological basis and variations

Core texts: [1] Chapters on facial and palatal development · [2] Sections on development of the face, palate and nasal cavity · [3] Chapters on development of the face and palate · [17] Chs. on the pharyngeal

apparatus, head and neck · [18] Ch. on head and neck · [19] Chs. on craniofacial development · [21] Chs. on palatogenesis · [32] Sections on the child with cleft lip and palate

Additional

- Bush JO, Jiang R. Palatogenesis: morphogenetic and molecular mechanisms of secondary palate development. Development. 2012;139(2):231–43.
- Dixon MJ, Marazita ML, Beaty TH, Murray JC. Cleft lip and palate: understanding genetic and environmental influences. Nat Rev Genet. 2011;12(3):167–78.
- Mossey PA, Little J, Munger RG, Dixon MJ, Shaw WC. Cleft lip and palate. Lancet. 2009;374(9703):1773–85.
- Ferguson MWJ. Palate development. Development. 1988;103 Suppl:41–60.
- Gritli-Linde A. Molecular control of secondary palate development. Dev Biol. 2007;301(2):309–26.
- Jiang R, Bush JO, Lidral AC. Development of the upper lip: morphogenetic and molecular mechanisms. Dev Dyn. 2006;235(5):1152–66.

Chapter 8 — Development of the Tongue

Contributions from the first, second, third and fourth pharyngeal arches · Development of mucosa versus musculature · Innervation pattern and its embryological explanation · Anomalies: ankyloglossia, macroglossia, microglossia

Core texts: [1] Chapters on development of the oral cavity and tongue · [2] Sections on the tongue and pharyngeal arches · [3] Chapters on development of the tongue · [17] Ch. on the pharyngeal apparatus · [18] Ch. on head and neck · [20] Chs. on head and neck development · [21] Chs. on tongue development · [24] Sections on tongue anatomy and innervation

Additional

- Parada C, Chai Y. Mandible and tongue development. Curr Top Dev Biol. 2015;115:31–58.
- Iwasaki S. Evolution of the structure and function of the vertebrate tongue. J Anat. 2002;201(1):1–13.
- Barlow LA. Progress and renewal in gustation: new insights into taste bud development. Development. 2015;142(21):3620–9.
- Cobourne MT, Sharpe PT. Making up the numbers: the molecular control of mammalian dental formula. Semin Cell Dev Biol. 2010;21(3):314–24.
- Messner AH, Walsh J, Rosenfeld RM, Schwartz SR, Ishman SL, Baldassari C, et al. Clinical consensus statement: ankyloglossia in children. Otolaryngol Head Neck Surg. 2020;162(5):597–611.
- Hall BK. The neural crest and neural crest cells: discovery and significance for theories of embryonic organization. J Biosci. 2008;33(5):781–93.

Chapter 9 — Development of the Jaws and Temporomandibular Joint

Development of the mandible (Meckel's cartilage, intramembranous ossification) · Development of the maxilla and zygomatic complex · Formation of the temporomandibular joint (condyle, articular disc, joint cavity)

Core texts: [1] Chapters on bone and on development of the facial skeleton · [2] Sections on development of the mandible, maxilla and TMJ · [3] Chapters on development of the jaws · [17] Chs. on the skeletal system and pharyngeal apparatus · [19] Chs. on craniofacial skeletal development · [21] Chs. on mandibular and maxillary development · [24] Sections on the temporomandibular joint

Additional

- Chai Y, Maxson RE Jr. Recent advances in craniofacial morphogenesis. Dev Dyn. 2006;235(9):2353–75.
- Mérida-Velasco JR, Rodríguez-Vázquez JF, Mérida-Velasco JA, Sánchez-Montesinos I, Espín-Ferra J, Jiménez-Collado J. Development of the human temporomandibular joint. Anat Rec. 1999;255(1):20–33.
- Hinton RJ. Genes that regulate morphogenesis and growth of the temporomandibular joint: a review. Dev Dyn. 2014;243(7):864–74.
- Hinton RJ, Jing Y, Jing J, Feng JQ. Roles of chondrocytes in endochondral bone formation and fracture repair. J Dent Res. 2017;96(1):23–30.
- Radlanski RJ, Renz H. Developmental movements of the inner and outer contours of the human mandible. Ann Anat. 2010;192(4):205–10.
- Ramieri G, Spada MC, Austa M, Bianchi SD, Berrone S. Transitory and permanent changes of the mandibular condyle: a review of growth and remodelling. Minerva Stomatol. 2005;54(1–2):1–12.

Chapter 13 — Differentiation and Matrix Formation

Histodifferentiation of pre-ameloblasts and odontoblasts · Formation of predentin and dentin; induction of amelogenesis · Mantle versus circumpulpal dentin; initial enamel formation

Core texts: [1] Chapters on tooth development and on dentine–pulp complex formation · [2] Sections on the bell stage and early hard tissue formation · [3] Chapters on development of the tooth and its supporting tissues · [4] Chs. on tooth development · [6] Chs. on odontogenesis · [7] Chapters on epithelial–mesenchymal interactions

Additional

- Thesleff I. Epithelial–mesenchymal signalling regulating tooth morphogenesis. J Cell Sci. 2003;116(Pt 9):1647–48.
- Jernvall J, Thesleff I. Reiterative signaling and patterning during mammalian tooth morphogenesis. Mech Dev. 2000;92(1):19–29.
- Ruch JV, Lesot H, Bègue-Kirn C. Odontoblast differentiation. Int J Dev Biol. 1995;39(1):51–68.
- Bègue-Kirn C, Smith AJ, Ruch JV, Wozney JM, Purchio A, Hartmann D, et al. Effects of dentin proteins, transforming growth factor β1 and bone morphogenetic protein 2 on the differentiation of odontoblasts in vitro. Int J Dev Biol. 1992;36(4):491–503.
- Smith AJ, Lesot H. Induction and regulation of crown dentinogenesis: embryonic events as a template for dental tissue repair? Crit Rev Oral Biol Med. 2001;12(5):425–37.
- Balic A, Thesleff I. Tissue interactions regulating tooth development and renewal. Curr Top Dev Biol. 2015;115:157–86.

Chapter 14 — Root Formation and Eruption

Hertwig's epithelial root sheath · Epithelial rests of Malassez · Mechanisms of tooth eruption: theories and phases (pre-eruptive, eruptive, post-eruptive) · Shedding of deciduous teeth and the role of odontoclasts

Core texts: [1] Chapters on root formation, eruption and shedding · [2] Sections on root development and tooth eruption · [3] Chapters on root formation and eruption of teeth · [4] Chs. on eruption and shedding · [5] Chs. on tooth development and eruption · [31] Chs. on development of the dentition · [32] Sections on the developing dentition

Additional

- Huang XF, Chai Y. Molecular regulatory mechanism of tooth root development. Int J Oral Sci. 2012;4(4):177–81.

- Luan X, Ito Y, Diekwisch TGH. Evolution and development of Hertwig's epithelial root sheath. Dev Dyn. 2006;235(5):1167–80.
- Wise GE, King GJ. Mechanisms of tooth eruption and orthodontic tooth movement. J Dent Res. 2008;87(5):414–34.
- Marks SC Jr, Schroeder HE. Tooth eruption: theories and facts. Anat Rec. 1996;245(2):374–93.
- Cahill DR, Marks SC Jr. Tooth eruption: evidence for the central role of the dental follicle. J Oral Pathol. 1980;9(4):189–200.
- Harokopakis-Hajishengallis E. Physiologic root resorption in primary teeth: molecular and histological events. J Oral Sci. 2007;49(1):1–12.
- Rincón JC, Young WG, Bartold PM. The epithelial cell rests of Malassez — a role in periodontal regeneration? J Periodontal Res. 2006;41(4):245–52.

Chapter 15 — Developmental Disturbances of Teeth (Embryological Basis)

Disturbances in initiation (anodontia, hypodontia, supernumeraries) · Disturbances in morphodifferentiation (microdontia, macrodontia, peg laterals) · Disturbances in apposition and mineralisation (amelogenesis imperfecta, dentinogenesis imperfecta, enamel hypoplasia, fluorosis)

Core texts: [1] Chapters on tooth development and its disturbances · [2] Sections on developmental anomalies of teeth · [3] Chapters on developmental disturbances · [29] Ch. on abnormalities of teeth · [30] Chs. on developmental disorders of the teeth · [32] Sections on developmental defects of enamel and dentine

Additional

- Nieminen P. Genetic basis of tooth agenesis. J Exp Zool B Mol Dev Evol. 2009;312B(4):320–42.
- Vastardis H. The genetics of human tooth agenesis: new discoveries for understanding dental anomalies. Am J Orthod Dentofacial Orthop. 2000;117(6):650–6.
- Crawford PJM, Aldred M, Bloch-Zupan A. Amelogenesis imperfecta. Orphanet J Rare Dis. 2007;2:17.
- Witkop CJ Jr. Amelogenesis imperfecta, dentinogenesis imperfecta and dentin dysplasia revisited: problems in classification. J Oral Pathol. 1988;17(9–10):547–53.
- Barron MJ, McDonnell ST, Mackie I, Dixon MJ. Hereditary dentine disorders: dentinogenesis imperfecta and dentine dysplasia. Orphanet J Rare Dis. 2008;3:31.
- Seow WK. Developmental defects of enamel and dentine: challenges for basic science research and clinical management. Aust Dent J. 2014;59 Suppl 1:143–54.
- DenBesten P, Li W. Chronic fluoride toxicity: dental fluorosis. Monogr Oral Sci. 2011;22:81–96.
- Weerheijm KL. Molar incisor hypomineralisation (MIH). Eur J Paediatr Dent. 2003;4(3):114–20.

Chapter 16 — Enamel — Composition and Properties

Chemical composition (inorganic, organic and water phases) · Physical properties: hardness, brittleness, permeability and solubility

Core texts: [1] Chapters on the physical and chemical properties of enamel · [2] Sections on enamel structure and composition · [3] Chapters on enamel · [6] Chs. on mineralised tissue composition · [9] Sections on enamel biology · [28] Chs. on the chemistry of demineralisation and remineralisation

Additional

- Robinson C, Kirkham J, Brookes SJ, Bonass WA, Shore RC. The chemistry of enamel development. Int J Dev Biol. 1995;39(1):145–52.

- Elliott JC. Structure, crystal chemistry and density of enamel apatites. Ciba Found Symp. 1997;205:54–67.
- Cuy JL, Mann AB, Livi KJ, Teaford MF, Weihs TP. Nanoindentation mapping of the mechanical properties of human molar tooth enamel. Arch Oral Biol. 2002;47(4):281–91.
- He LH, Swain MV. Understanding the mechanical behaviour of human enamel from its structural and compositional characteristics. J Mech Behav Biomed Mater. 2008;1(1):18–29.
- Shellis RP, Featherstone JDB, Lussi A. Understanding the chemistry of dental erosion. Monogr Oral Sci. 2014;25:163–79.
- Featherstone JDB. The continuum of dental caries — evidence for a dynamic disease process. J Dent Res. 2004;83 Spec No C:C39–42.

Chapter 17 — Enamel Microstructure

Enamel rods/prisms and interprismatic substance · Rod orientation and gnarled enamel · Hunter–Schreger bands, striae of Retzius, neonatal line · Enamel tufts, lamellae and spindles

Core texts: [1] Chapters on enamel structure and incremental markings · [2] Sections on enamel microanatomy · [3] Chapters on enamel structure · [7] Chapters on enamel organisation · [16] Chs. on ground section and demineralised section technique · [22] Sections on enamel surface features

Additional

- Boyde A. Microstructure of enamel. Ciba Found Symp. 1997;205:18–27.
- Osborn JW. The mechanism of prism formation in teeth: a hypothesis. Calcif Tissue Res. 1970;5(2):115–32.
- Risnes S. Structural characteristics of staircase-type Retzius lines in human dental enamel analyzed by scanning electron microscopy. Anat Rec. 1990;226(2):135–46.
- Smith TM. Experimental determination of the periodicity of incremental features in enamel. J Anat. 2006;208(1):99–113.
- Lynch CD, O'Sullivan VR, Dockery P, McGillycuddy CT, Sloan AJ. Hunter–Schreger Band patterns in human tooth enamel. J Anat. 2010;217(2):106–15.
- Sabel N, Klingberg G, Nietzsche S, Robertson A, Odelius H, Norén JG. Analysis of some elements in primary enamel during postnatal mineralization. Acta Odontol Scand. 2009;67(3):149–57.

Chapter 18 — Amelogenesis

Life cycle of the ameloblast: morphogenic, organising, formative, transition, maturative and protective stages · Secretory and maturation phases: matrix proteins, Tomes' process, proteolysis and crystal growth · Reduced enamel epithelium, the primary enamel cuticle and eruption

Core texts: [1] Chapters on enamel formation and the ameloblast life cycle · [2] Sections on amelogenesis · [3] Chapters on amelogenesis · [4] Chs. on enamel formation · [6] Chs. on mineralisation · [7] Chapters on the enamel organ

Additional

- Simmer JP, Fincham AG. Molecular mechanisms of dental enamel formation. Crit Rev Oral Biol Med. 1995;6(2):84–108.
- Smith CE. Cellular and chemical events during enamel maturation. Crit Rev Oral Biol Med. 1998;9(2):128–61.
- Lacruz RS, Habelitz S, Wright JT, Paine ML. Dental enamel formation and implications for oral health and disease. Physiol Rev. 2017;97(3):939–93.

- Bartlett JD. Dental enamel development: proteinases and their enamel matrix substrates. ISRN Dent. 2013;2013:684607.
- Moradian-Oldak J. Protein-mediated enamel mineralization. Front Biosci (Landmark Ed). 2012;17(6):1996–2023.
- Hu JC, Chun YH, Al Hazzazzi T, Simmer JP. Enamel formation and amelogenesis imperfecta. Cells Tissues Organs. 2007;186(1):78–85.

Chapter 19 — Age Changes and Clinical Aspects of Enamel

Attrition, abrasion, erosion and abfraction · Early histopathology of enamel caries · Changes in permeability and fluoride incorporation · Forensic age estimation using enamel features

Core texts: [1] Chapters on enamel and on age changes in the dental tissues · [2] Sections on clinical considerations of enamel · [3] Chapters on age changes of enamel · [28] Chs. on the carious lesion in enamel · [36] Chs. on dental age estimation · [40] Sections on fluoride and caries prevention

Additional

- Silverstone LM. Structure of carious enamel, including the early lesion. Oral Sci Rev. 1973;3:100–60.
- Featherstone JDB. Dental caries: a dynamic disease process. Aust Dent J. 2008;53(3):286–91.
- Shellis RP, Ganss C, Ren Y, Zero DT, Lussi A. Methodology and models in erosion research: discussion and conclusions. Caries Res. 2011;45 Suppl 1:69–77.
- Grippo JO, Simring M, Coleman TA. Abfraction, abrasion, biocorrosion, and the enigma of noncarious cervical lesions. J Esthet Restor Dent. 2012;24(1):10–23.
- Ten Cate JM. Contemporary perspective on the use of fluoride products in caries prevention. Br Dent J. 2013;214(4):161–7.
- Willems G, Moulin-Romsee C, Solheim T. Non-destructive dental-age calculation methods in adults: intra- and inter-observer effects. Forensic Sci Int. 2002;126(3):221–6.

Chapter 20 — Dentin — Composition and Properties

Chemical and physical properties of dentin · Relationship of dentin to the pulp and to enamel and cementum

Core texts: [1] Chapters on the dentine–pulp complex · [2] Sections on dentine composition and properties · [3] Chapters on dentine · [6] Chs. on mineralised tissues · [7] Chapters on dentine biology · [26] Chs. on the structure and function of the dentine–pulp complex

Additional

- Goldberg M, Kulkarni AB, Young M, Boskey A. Dentin: structure, composition and mineralization. Front Biosci (Elite Ed). 2011;3(2):711–35.
- Kinney JH, Marshall SJ, Marshall GW. The mechanical properties of human dentin: a critical review and re-evaluation of the dental literature. Crit Rev Oral Biol Med. 2003;14(1):13–29.
- Butler WT, Ritchie H. The nature and functional significance of dentin extracellular matrix proteins. Int J Dev Biol. 1995;39(1):169–79.
- Marshall GW Jr, Marshall SJ, Kinney JH, Balooch M. The dentin substrate: structure and properties related to bonding. J Dent. 1997;25(6):441–58.
- Pashley DH. Dynamics of the pulpo-dentin complex. Crit Rev Oral Biol Med. 1996;7(2):104–33.
- Bertassoni LE, Orgel JPR, Antipova O, Swain MV. The dentin organic matrix — limitations of restorative dentistry hidden on the nanometer scale. Acta Biomater. 2012;8(7):2419–33.

Chapter 21 — Dentin Structure

Dentinal tubules: course, branching, peritubular versus intertubular dentin · Primary, secondary and tertiary (reparative and reactionary) dentin · Predentin and the mineralisation front · Interglobular dentin and Tomes' granular layer

Core texts: [1] Chapters on dentine structure and types · [2] Sections on dentinal tubules and dentine types · [3] Chapters on dentine structure · [7] Chapters on the odontoblast and its processes · [16] Chs. on ground sections · [26] Chs. on dentine responses to injury

Additional

- Mjör IA, Nordahl I. The density and branching of dentinal tubules in human teeth. Arch Oral Biol. 1996;41(5):401–12.
- Gotliv BA, Veis A. Peritubular dentin, a vertebrate apatitic mineralized tissue without collagen: role of a phospholipid-proteolipid complex. Calcif Tissue Int. 2007;81(3):191–205.
- Smith AJ, Cassidy N, Perry H, Bègue-Kirn C, Ruch JV, Lesot H. Reactionary dentinogenesis. Int J Dev Biol. 1995;39(1):273–80.
- Bleicher F. Odontoblast physiology. Exp Cell Res. 2014;325(2):65–71.
- Mjör IA. Dentin permeability: the basis for understanding pulp reactions and adhesive technology. Braz Dent J. 2009;20(1):3–16.
- Whittaker DK. The enamel–dentine junction of human and Macaca irus teeth: a light and electron microscopic study. J Anat. 1978;125(Pt 2):323–35.

Chapter 22 — Dentinogenesis

Differentiation of odontoblasts · Formation of mantle versus circumpulpal dentine · Patterns of mineralisation (globular and linear)

Core texts: [1] Chapters on dentinogenesis · [2] Sections on the formation of dentine · [3] Chapters on dentinogenesis · [4] Chs. on dentine formation · [6] Chs. on biomineralisation · [7] Chapters on matrix secretion

Additional

- Linde A, Goldberg M. Dentinogenesis. Crit Rev Oral Biol Med. 1993;4(5):679–728.
- Arana-Chavez VE, Massa LF. Odontoblasts: the cells forming and maintaining dentine. Int J Biochem Cell Biol. 2004;36(8):1367–73.
- Goldberg M, Smith AJ. Cells and extracellular matrices of dentin and pulp: a biological basis for repair and tissue engineering. Crit Rev Oral Biol Med. 2004;15(1):13–27.
- Prasad M, Butler WT, Qin C. Dentin sialophosphoprotein in biomineralization. Connect Tissue Res. 2010;51(5):404–17.
- Beniash E, Deshpande AS, Fang PA, Lieb NS, Zhang X, Sfeir CS. Possible role of DMP1 in dentin mineralization. J Struct Biol. 2011;174(1):100–6.
- Bleicher F, Couble ML, Farges JC, Couble P, Magloire H. Sequential expression of matrix protein genes in developing rat teeth. Matrix Biol. 1999;18(2):133–43.

Chapter 23 — Age Changes and Clinical Considerations of Dentine

Sclerotic dentine and dead tracts · Histological basis of dentinal hypersensitivity · Dentine in caries, erosion and restorative procedures

Core texts: [1] Chapters on age changes in dentine and on dentine sensitivity · [2] Sections on clinical considerations of dentine · [3] Chapters on age changes of dentine · [26] Chs. on pulpal responses and dentine hypersensitivity · [28] Chs. on the carious lesion in dentine

Additional

- Brännström M. The hydrodynamic theory of dentinal pain: sensation in preparations, caries, and the dentinal crack syndrome. J Endod. 1986;12(10):453–7.
- West NX, Lussi A, Seong J, Hellwig E. Dentin hypersensitivity: pain mechanisms and aetiology of exposed cervical dentin. Clin Oral Investig. 2013;17 Suppl 1:S9–19.
- Absi EG, Addy M, Adams D. Dentine hypersensitivity: a study of the patency of dentinal tubules in sensitive and non-sensitive cervical dentine. J Clin Periodontol. 1987;14(5):280–4.
- Vasiliadis L, Darling AI, Levers BGH. The amount and distribution of sclerotic human root dentine. Arch Oral Biol. 1983;28(7):645–9.
- Bjørndal L, Darvann T. A light microscopic study of odontoblastic and non-odontoblastic cells involved in tertiary dentinogenesis in well-defined cavitated carious lesions. Caries Res. 1999;33(1):50–60.
- Tjäderhane L, Buzalaf MAR, Carrilho M, Chaussain C. Matrix metalloproteinases and other matrix proteinases in relation to cariology. Caries Res. 2015;49(3):193–208.

Chapter 24 — Pulp — Structure and Zones

Pulp chamber and root canals: coronal versus radicular pulp · Cell-free zone of Weil, cell-rich zone and odontoblastic layer · Fibroblasts, odontoblasts and defence cells (macrophages, dendritic cells) · Ground substance and fibres

Core texts: [1] Chapters on the dental pulp · [2] Sections on pulp structure and cells · [3] Chapters on the pulp · [7] Chapters on pulp cells and matrix · [26] Chs. on pulp structure and function · [9] Sections on the dentine–pulp complex

Additional

- Yu C, Abbott PV. An overview of the dental pulp: its functions and responses to injury. Aust Dent J. 2007;52(1 Suppl):S4–16.
- Magloire H, Couble ML, Thivichon-Prince B, Maurin JC, Bleicher F. Odontoblast: a mechano-sensory cell. J Exp Zool B Mol Dev Evol. 2009;312B(5):416–24.
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- Nanci A, Bosshardt DD. Structure of periodontal tissues in health and disease. Periodontol 2000. 2006;40:11–28.

Chapter 25 — Functions and Age Changes of Pulp

Formative, nutritive, sensory and defensive functions · Pulp stones (true and false) and dystrophic calcification · Regressive changes and clinical implications in endodontics

Core texts: [1] Chapters on pulp function and age changes · [2] Sections on the ageing pulp · [3] Chapters on functions and age changes of the pulp · [26] Chs. on pulp biology, diagnosis and vital pulp therapy · [9] Sections on pulp responses

Additional

- Bernick S, Nedelman C. Effect of aging on the human pulp. J Endod. 1975;1(3):88–94.
- Morse DR. Age-related changes of the dental pulp complex and their relationship to systemic aging. Oral Surg Oral Med Oral Pathol. 1991;72(6):721–45.
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- Murray PE, Stanley HR, Matthews JB, Sloan AJ, Smith AJ. Age-related odontometric changes of human teeth. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2002;93(4):474–82.
- Ricucci D, Loghin S, Siqueira JF Jr. Correlation between clinical and histologic pulp diagnoses. J Endod. 2014;40(12):1932–9.
- Smith AJ, Duncan HF, Diogenes A, Simon S, Cooper PR. Exploiting the bioactive properties of the dentin–pulp complex in regenerative endodontics. J Endod. 2016;42(1):47–56.

Chapter 26 — Cementum

Composition and physical properties · Acellular versus cellular cementum; extrinsic versus intrinsic fibre cementum · Cementogenesis and cementoblasts · Cemento-enamel junction variations · Hypercementosis and cementicles

Core texts: [1] Chapters on cementum · [2] Sections on cementum structure and formation · [3] Chapters on cementum · [27] Chs. on the periodontal tissues · [35] Chapters on cementum and attachment · [7] Chapters on mineralised tissue cells

Additional

- Bosshardt DD, Selvig KA. Dental cementum: the dynamic tissue covering of the root. Periodontol 2000. 1997;13:41–75.
- Bosshardt DD. Are cementoblasts a subpopulation of osteoblasts or a unique phenotype? J Dent Res. 2005;84(5):390–406.
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- Pinheiro BC, Pinheiro TN, Capelozza ALA, Consolaro A. A scanning electron microscopic study of hypercementosis. J Appl Oral Sci. 2008;16(6):380–4.

Chapter 27 — Periodontal Ligament

Structure and cellular components (fibroblasts, cementoblasts, osteoblasts, defence cells) · Principal fibre groups (alveolar crest, horizontal, oblique, apical, interradicular) · Neurovascular supply · Functions: support, sensory, formative and remodelling

Core texts: [1] Chapters on the periodontal ligament · [2] Sections on the periodontal ligament · [3] Chapters on the periodontal ligament · [27] Chs. on the anatomy of the periodontium · [35] Chapters on the periodontal ligament · [31] Chs. on the biology of tooth movement

Additional

- Beertsen W, McCulloch CAG, Sodek J. The periodontal ligament: a unique, multifunctional connective tissue. Periodontol 2000. 1997;13:20–40.

- Berkovitz BKB. The structure of the periodontal ligament: an update. Eur J Orthod. 1990;12(1):51–76.
- McCulloch CAG, Lekic P, McKee MD. Role of physical forces in regulating the form and function of the periodontal ligament. Periodontol 2000. 2000;24:56–72.
- Seo BM, Miura M, Gronthos S, Bartold PM, Batouli S, Brahim J, et al. Investigation of multipotent postnatal stem cells from human periodontal ligament. Lancet. 2004;364(9429):149–55.
- Nanci A, Bosshardt DD. Structure of periodontal tissues in health and disease. Periodontol 2000. 2006;40:11–28.
- Cho MI, Garant PR. Development and general structure of the periodontium. Periodontol 2000. 2000;24:9–27.

Chapter 28 — Alveolar Bone

Bundle bone, lamellated bone and supporting alveolar bone · Cortical versus cancellous bone; the cribriform plate · Bone remodelling during eruption, orthodontic tooth movement and periodontitis

Core texts: [1] Chapters on bone and the alveolar process · [2] Sections on alveolar bone · [3] Chapters on alveolar bone · [27] Chs. on the alveolar process and bone biology · [35] Chapters on alveolar bone · [31] Chs. on the tissue response to orthodontic force

Additional

- Sodek J, McKee MD. Molecular and cellular biology of alveolar bone. Periodontol 2000. 2000;24:99–126.
- Boyle WJ, Simonet WS, Lacey DL. Osteoclast differentiation and activation. Nature. 2003;423(6937):337–42.
- Krishnan V, Davidovitch Z. Cellular, molecular, and tissue-level reactions to orthodontic force. Am J Orthod Dentofacial Orthop. 2006;129(4):469.e1–32.
- Araújo MG, Lindhe J. Dimensional ridge alterations following tooth extraction: an experimental study in the dog. J Clin Periodontol. 2005;32(2):212–8.
- Hienz SA, Paliwal S, Ivanovski S. Mechanisms of bone resorption in periodontitis. J Immunol Res. 2015;2015:615486.
- Bartold PM, Cantley MD, Haynes DR. Mechanisms and control of pathologic bone loss in periodontitis. Periodontol 2000. 2010;53:55–69.

Chapter 29 — Gingiva and Junctional Epithelium

Free, attached and interdental gingiva; the gingival sulcus · Oral, sulcular and junctional epithelium: histological features · Dentogingival junction and epithelial attachment · Age changes and clinical correlations

Core texts: [1] Chapters on the gingiva and dentogingival junction · [2] Sections on the gingiva · [3] Chapters on the gingiva · [27] Chs. on the anatomy of the periodontium and on gingival health and disease · [34] Chapters on gingival epithelium · [35] Chapters on the dentogingival junction

Additional

- Bosshardt DD, Lang NP. The junctional epithelium: from health to disease. J Dent Res. 2005;84(1):9–20.
- Schroeder HE, Listgarten MA. The gingival tissues: the architecture of periodontal protection. Periodontol 2000. 1997;13:91–120.
- Pöllänen MT, Salonen JI, Uitto VJ. Structure and function of the tooth–epithelial interface in health and disease. Periodontol 2000. 2003;31:12–31.

- Bartold PM, Walsh LJ, Narayanan AS. Molecular and cell biology of the gingiva. Periodontol 2000. 2000;24:28–55.
- Page RC, Schroeder HE. Pathogenesis of inflammatory periodontal disease: a summary of current work. Lab Invest. 1976;34(3):235–49.
- Chapple ILC, 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. J Clin Periodontol. 2018;45 Suppl 20:S68–77.

Chapter 30 — Classification of Oral Mucosa

Structure of the oral mucosa: epithelium, lamina propria, basal lamina and submucosa · The three functional types: masticatory, lining and specialised mucosa · Regional anatomy, landmarks and clinical application

Core texts: [1] Chapters on oral mucosa · [2] Sections on the classification and regional variation of oral mucosa · [3] Chapters on oral mucous membrane · [34] Chapters on the structure and regional variation of human oral mucosa · [5] Chs. on oral mucosa · [30] Sections on mucosal disease and site predilection

Additional

- Squier CA, Kremer MJ. Biology of oral mucosa and esophagus. J Natl Cancer Inst Monogr. 2001;(29):7–15.
- Winning TA, Townsend GC. Oral mucosal embryology and histology. Clin Dermatol. 2000;18(5):499–511.
- Presland RB, Dale BA. Epithelial structural proteins of the skin and oral cavity: function in health and disease. Crit Rev Oral Biol Med. 2000;11(4):383–408.
- Harris D, Robinson JR. Drug delivery via the mucous membranes of the oral cavity. J Pharm Sci. 1992;81(1):1–10.
- Roed-Petersen B, Renstrup G. A topographical classification of the oral mucosa suitable for electronic data processing. Acta Odontol Scand. 1969;27(6):681–95.
- Bergmeier LA. Oral mucosa in health and disease: a concise handbook. Cham: Springer; 2018.

Chapter 31 — Histology of Oral Mucosa

Keratinised versus non-keratinised stratified squamous epithelium · Interface between epithelium and connective tissue (rete pegs, connective tissue papillae) · Submucosa and attachment to underlying structures

Core texts: [1] Chapters on the structure of oral mucosa · [2] Sections on oral epithelium and lamina propria · [3] Chapters on oral mucous membrane · [34] Chapters on epithelial differentiation and the epithelial–connective tissue interface · [10] Chs. on epithelial tissue · [11] Chs. on epithelium and connective tissue

Additional

- Dale BA, Salonen J, Jones AH. New approaches and concepts in the study of differentiation of oral epithelia. Crit Rev Oral Biol Med. 1990;1(3):167–90.
- Moll R, Divo M, Langbein L. The human keratins: biology and pathology. Histochem Cell Biol. 2008;129(6):705–33.
- Klein-Szanto AJP, Schroeder HE. Architecture and density of the connective tissue papillae of the human oral mucosa. J Anat. 1977;123(Pt 1):93–109.
- Jones JCR, Hopkinson SB, Goldfinger LE. Structure and assembly of hemidesmosomes. Bioessays. 1998;20(6):488–94.
- Barrett AW, Cruchley AT, Williams DM. Oral mucosal Langerhans' cells. Crit Rev Oral Biol Med. 1996;7(1):36–58.

- Squier CA, Finkelstein MW, Sençimen M. Permeability of oral mucosa and skin with age. J Dent Res. 1991;70(12):1461–4.

Chapter 35 — Minor Salivary Glands

Distribution in the lips, cheeks, palate, tongue and retromolar area · Histological features and mucous predominance

Core texts: [1] Chapters on salivary glands · [2] Sections on minor salivary glands · [3] Chapters on salivary glands · [6] Chs. on salivary gland structure and secretion · [24] Sections on the oral cavity and its glands · [30] Chs. on salivary gland disease

Additional

- Riva A, Puxeddu R, Uras L, Loy F, Serreli S, Testa Riva F. A high resolution scanning electron microscopy study of human minor salivary glands. Eur J Morphol. 2000;38(4):219–26.
- Tandler B, Pinkstaff CA, Riva A. Ultrastructure and histochemistry of human labial gland acinar cells. Anat Rec. 1994;240(2):167–77.
- Fisher BA, Jonsson R, Daniels T, Bombardieri M, Brown RM, Morgan P, et al. Standardisation of labial salivary gland histopathology in clinical trials in primary Sjögren's syndrome. Ann Rheum Dis. 2017;76(7):1161–8.
- Baurmash HD. Mucoceles and ranulas. J Oral Maxillofac Surg. 2003;61(3):369–78.
- Nagler RM, Hershkovich O. Relationships between age, drugs, oral sensorial complaints and salivary profile. Arch Oral Biol. 2005;50(1):7–16.
- Eliasson L, Carlén A. An update on minor salivary gland secretions. Eur J Oral Sci. 2010;118(5):435–42.

Chapter 36 — Saliva

Composition and functions: lubrication, buffering, antimicrobial action and remineralisation · Histological basis of salivary function (myoepithelial cells, ductal modification) · Changes in xerostomia, following radiation and in systemic disease

Core texts: [1] Chapters on salivary secretion and function · [2] Sections on saliva · [3] Chapters on saliva · [6] Chs. on salivary physiology · [28] Chs. on saliva and caries · [40] Sections on dry mouth and prevention advice

Additional

- Humphrey SP, Williamson RT. A review of saliva: normal composition, flow, and function. J Prosthet Dent. 2001;85(2):162–9.
- Dawes C, Pedersen AML, Villa A, Ekström J, Proctor GB, Vissink A, et al. The functions of human saliva: a review sponsored by the World Workshop on Oral Medicine VI. Arch Oral Biol. 2015;60(6):863–74.
- Proctor GB. The physiology of salivary secretion. Periodontol 2000. 2016;70(1):11–25.
- Amerongen AVN, Veerman ECI. Saliva — the defender of the oral cavity. Oral Dis. 2002;8(1):12–22.
- Lynge Pedersen AM, Belstrøm D. The role of natural salivary defences in maintaining a healthy oral microbiota. J Dent. 2019;80 Suppl 1:S3–12.
- Vissink A, Mitchell JB, Baum BJ, Limesand KH, Jensen SB, Fox PC, et al. Clinical management of salivary gland hypofunction and xerostomia in head-and-neck cancer patients. Int J Radiat Oncol Biol Phys. 2010;78(4):983–91.

Chapter 37 — Maxillary Sinus and Paranasal Air Sinuses

Lining epithelium and underlying lamina propria · Relationship to the posterior maxillary teeth

Core texts: [1] Chapters on respiratory epithelium of the nasal and sinus lining · [2] Sections on the maxillary sinus · [24] Chs. on the nose and paranasal sinuses · [25] Sections on the paranasal sinuses · [10] Chs. on the respiratory system · [12] Chs. on respiratory epithelium

Additional

- Whyte A, Boeddinghaus R. The maxillary sinus: physiology, development and imaging anatomy. Dentomaxillofac Radiol. 2019;48(8):20190205.
- Watelet JB, Van Cauwenberge P. Applied anatomy and physiology of the nose and paranasal sinuses. Allergy. 1999;54 Suppl 57:14–25.
- Beale TJ, Madani G, Morley SJ. Imaging of the paranasal sinuses and nasal cavity: normal anatomy and clinically relevant anatomical variants. Semin Ultrasound CT MR. 2009;30(1):2–16.
- Kilic C, Kamburoglu K, Yuksel SP, Ozen T. An assessment of the relationship between the maxillary sinus floor and the maxillary posterior teeth root tips using dental cone-beam computerized tomography. Eur J Dent. 2010;4(4):462–7.
- Chanavaz M. Maxillary sinus: anatomy, physiology, surgery, and bone grafting related to implantology. J Oral Implantol. 1990;16(3):199–209.
- Cohen NA. Sinonasal mucociliary clearance in health and disease. Ann Otol Rhinol Laryngol Suppl. 2006;196:20–6.

Chapter 38 — Temporomandibular Joint

Articular surfaces: fibrocartilage and hyaline cartilage, and the condylar secondary cartilage · The articular disc: shape, regional structure, attachments, neurovascular supply, function, development and displacement · Synovial membrane, synovial fluid, fibrous capsule and ligaments

Core texts: [1] Chapters on the temporomandibular joint · [2] Sections on the TMJ · [3] Chapters on the temporomandibular joint · [24] Chs. on the TMJ and masticatory apparatus · [25] Sections on the temporomandibular joint · [31] Chs. on the TMJ and growth

Additional

- Detamore MS, Athanasiou KA. Structure and function of the temporomandibular joint disc: implications for tissue engineering. J Oral Maxillofac Surg. 2003;61(4):494–506.
- Nozawa-Inoue K, Amizuka N, Ikeda N, Suzuki A, Kawano Y, Maeda T. Synovial membrane in the temporomandibular joint — its morphology, function and development. Arch Histol Cytol. 2003;66(4):289–306.
- Tanaka E, Detamore MS, Mercuri LG. Degenerative disorders of the temporomandibular joint: etiology, diagnosis, and treatment. J Dent Res. 2008;87(4):296–307.
- Milam SB. Pathogenesis of degenerative temporomandibular joint arthritides. Odontology. 2005;93(1):7–15.
- Mills DK, Daniel JC, Herzog S, Scapino RP. An animal model for studying mechanisms in human temporomandibular joint disc derangement. J Oral Maxillofac Surg. 1994;52(11):1279–92.
- Schiffman E, Ohrbach R, Truelove E, Look J, Anderson G, Goulet JP, et al. Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) for clinical and research applications. J Oral Facial Pain Headache. 2014;28(1):6–27.

Chapter 39 — Oral Lymphoid Tissue and Immune Structures

Waldeyer's ring: palatine, lingual and pharyngeal tonsils · Immune cells in the oral mucosa and gingiva

Core texts: [1] Chapters on tonsils and oral immune tissue · [2] Sections on lymphoid tissue of the oral cavity and pharynx · [10] Chs. on the immune system and lymphoid organs · [11] Chs. on lymphatic tissues · [24] Sections on the pharynx and tonsils · [34] Chapters on mucosal immunity

Additional

- Perry M, Whyte A. Immunology of the tonsils. Immunol Today. 1998;19(9):414–21.
- Nave H, Gebert A, Pabst R. Morphology and immunology of the human palatine tonsil. Anat Embryol (Berl). 2001;204(5):367–73.
- Brandtzaeg P. Immunology of tonsils and adenoids: everything the ENT surgeon needs to know. Int J Pediatr Otorhinolaryngol. 2003;67 Suppl 1:S69–76.
- Cutler CW, Jotwani R. Dendritic cells at the oral mucosal interface. J Dent Res. 2006;85(8):678–89.
- Moutsopoulos NM, Konkel JE. Tissue-specific immunity at the oral mucosal barrier. Trends Immunol. 2018;39(4):276–87.
- Dutzan N, Konkel JE, Greenwell-Wild T, Moutsopoulos NM. Characterization of the human immune cell network at the gingival barrier. Mucosal Immunol. 2016;9(5):1163–72.

Chapter 40 — Blood Vessels and Nerves in Oral Tissues

Microcirculation in the pulp, periodontal ligament and mucosa · Myelinated versus unmyelinated nerve fibres in the periodontal ligament and pulp

Core texts: [1] Chapters on the vascular and nerve supply of the dental tissues · [2] Sections on the blood and nerve supply of the teeth and periodontium · [3] Chapters on the pulp and periodontal ligament · [10] Chs. on the circulatory and nervous systems · [26] Chs. on pulp neurophysiology · [25] Sections on the neurovascular supply of the jaws

Additional

- Kim S. Microcirculation of the dental pulp in health and disease. J Endod. 1985;11(11):465–71.
- Matthews B, Andrew D. Microvascular architecture and exchange in teeth. Microcirculation. 1995;2(4):305–13.
- Hildebrand C, Fried K, Tuisku F, Johansson CS. Teeth and tooth nerves. Prog Neurobiol. 1995;45(3):165–222.
- Byers MR, Närhi MVO. Dental injury models: experimental tools for understanding neuroinflammatory interactions and polymodal nociceptor functions. Crit Rev Oral Biol Med. 1999;10(1):4–39.
- Berggreen E, Bletsa A, Heyeraas KJ. Circulation in normal and inflamed dental pulp. Endod Topics. 2007;17(1):2–11.
- Heyeraas KJ, Berggreen E. Interstitial fluid pressure in normal and inflamed pulp. Crit Rev Oral Biol Med. 1999;10(3):328–36.

Chapter 41 — Age Changes Across Oral Tissues

Enamel: wear, cracks and reduced permeability · Dentine–pulp complex: secondary and tertiary dentine, calcifications, decreased cellularity · Periodontium: periodontal ligament width changes and alveolar bone resorption · Oral mucosa: atrophy and reduced keratinisation

Core texts: [1] Chapters on age changes in the dental and periodontal tissues · [2] Sections on ageing of the oral tissues · [3] Chapters on age changes of enamel, dentine, pulp and periodontium · [27] Chs. on the ageing periodontium · [34] Chapters on ageing of the oral mucosa

Additional

- Kinney JH, Nalla RK, Pople JA, Breunig TM, Ritchie RO. Age-related transparent root dentin: mineral concentration, crystallite size, and mechanical properties. Biomaterials. 2005;26(16):3363–76.
- Van der Velden U. Effect of age on the periodontium. J Clin Periodontol. 1984;11(5):281–94.
- Wolff A, Ship JA, Tylenda CA, Fox PC, Baum BJ. Oral mucosal appearance is unchanged in healthy, different-aged persons. Oral Surg Oral Med Oral Pathol. 1991;71(5):569–72.
- Lamster IB, Asadourian L, Del Carmen T, Friedman PK. The aging mouth: differentiating normal aging from disease. Periodontol 2000. 2016;72(1):96–107.
- Ship JA, Pillemer SR, Baum BJ. Xerostomia and the geriatric patient. J Am Geriatr Soc. 2002;50(3):535–43.
- Nanci A, Bosshardt DD. Structure of periodontal tissues in health and disease. Periodontol 2000. 2006;40:11–28.

Chapter 42 — Forensic Odontology — Histological Aspects

Age estimation using secondary dentin, cementum annulations and root dentin transparency · Histology of bite marks (basic principles only)

Core texts: [1] Chapters on age changes in dentine and cementum · [2] Sections on cementum annulation and dentine translucency · [36] Chapters on dental age estimation and bitemark analysis · [16] Chs. on ground section preparation · [22] Sections on tooth morphology for identification

Additional

- Gustafson G. Age determination on teeth. J Am Dent Assoc. 1950;41(1):45–54.
- Bang G, Ramm E. Determination of age in humans from root dentin transparency. Acta Odontol Scand. 1970;28(1):3–35.
- Lamendin H, Baccino E, Humbert JF, Tavernier JC, Nossintchouk RM, Zerilli A. A simple technique for age estimation in adult corpses: the two criteria dental method. J Forensic Sci. 1992;37(5):1373–9.
- Wittwer-Backofen U, Gampe J, Vaupel JW. Tooth cementum annulation for age estimation: results from a large known-age validation study. Am J Phys Anthropol. 2004;123(2):119–29.
- Pretty IA, Sweet D. The scientific basis for human bitemark analyses — a critical review. Sci Justice. 2001;41(2):85–92.
- Bush MA, Bush PJ, Sheets HD. Statistical evidence for the similarity of the human dentition. J Forensic Sci. 2011;56(1):118–23.
- National Research Council. Strengthening forensic science in the United States: a path forward. Washington (DC): National Academies Press; 2009.

Chapter 43 — Clinical Correlations and Pathway to Disease

Basic histopathological response of the oral tissues to caries, trauma, orthodontic forces and periodontal inflammation · Interface with oral pathology and periodontology as an introductory bridge topic

Core texts: [1] Chapters on the response of the dental tissues to injury · [2] Sections on clinical considerations throughout · [26] Chs. on pulp pathology and vital pulp therapy · [27] Chs. on the pathogenesis of periodontal disease · [28] Chs. on the caries process and its management · [29] and [30] Chs. on the histopathology of oral disease · [31] Chs. on the biology of tooth movement · [33] Chs. on the pulpal and periodontal response to trauma

Additional

- Bjørndal L, Mjör IA. Pulp–dentin biology in restorative dentistry. Part 4: dental caries — characteristics of lesions and pulpal reactions. Quintessence Int. 2001;32(9):717–36.

- Duncan HF, Galler KM, Tomson PL, Simon S, El-Karim I, Kundzina R, et al. European Society of Endodontology position statement: management of deep caries and the exposed pulp. Int Endod J. 2019;52(7):923–34.
- Meyle J, Chapple I. Molecular aspects of the pathogenesis of periodontitis. Periodontol 2000. 2015;69(1):7–17.
- Papapanou PN, Sanz M, Buduneli N, Dietrich T, Feres M, Fine DH, 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.
- Meikle MC. The tissue, cellular, and molecular regulation of orthodontic tooth movement: 100 years after Carl Sandstedt. Eur J Orthod. 2006;28(3):221–40.
- Andreasen FM, Andreasen JO. Diagnosis of luxation injuries: the importance of standardized clinical, radiographic and photographic techniques in clinical investigations. Endod Dent Traumatol. 1985;1(5):160–9.
- Nyvad B, Fejerskov O. Assessing the stage of caries lesion activity on the basis of clinical and microbiological examination. Community Dent Oral Epidemiol. 1997;25(1):69–75.

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