Oral Physiology

Year 2 — Bachelor of Dental Surgery

Reference and Resource List — Chapters 1 to 10

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 physiology textbooks

1. Hall JE, Hall ME. Guyton and Hall Textbook of Medical Physiology. 15th ed. Philadelphia: Elsevier; 2025.
2. Barrett KE, Brooks HL, Barman SM, Yuan JX-J. Ganong's Review of Medical Physiology. 27th ed. New York: McGraw Hill; 2025.
3. Koeppen BM, Stanton BA, Hall JM, Swiatecka-Urban A, editors. Berne & Levy Physiology. 8th ed. Philadelphia: Elsevier; 2023.
4. Boron WF, Boulpaep EL, editors. Medical Physiology. 3rd ed. Philadelphia: Elsevier; 2016.
5. Sembulingam K, Sembulingam P. Essentials of Medical Physiology. 10th ed. New Delhi: Jaypee Brothers Medical Publishers; 2025.
6. Khurana I. Textbook of Human Physiology for Dental Students. 2nd ed. New Delhi: Elsevier India; 2014.
7. Kandel ER, Koester JD, Mack SH, Siegelbaum SA, editors. Principles of Neural Science. 6th ed. New York: McGraw Hill; 2021.

1.2 Oral biology, oral histology and functional anatomy

8. Nanci A. Ten Cate's Oral Histology: Development, Structure, and Function. 10th ed. St Louis: Elsevier; 2024.
9. Berkovitz BKB, Holland GR, Moxham BJ. Oral Anatomy, Histology and Embryology. 5th ed. Edinburgh: Elsevier; 2017.
10. Chiego DJ. Essentials of Oral Histology and Embryology: A Clinical Approach. 5th ed. St Louis: Elsevier; 2019.
11. Fehrenbach MJ, Herring SW. Illustrated Anatomy of the Head and Neck. 6th ed. St Louis: Elsevier; 2020.
12. Standring S, editor. Gray's Anatomy: The Anatomical Basis of Clinical Practice. 42nd ed. Amsterdam: Elsevier; 2020.
13. Bradley RM. Essentials of Oral Physiology. St Louis: Mosby; 1995.
14. Ferguson DB. Oral Bioscience. Edinburgh: Churchill Livingstone; 1999.

1.3 Applied and clinical correlation texts

15. Okeson JP. Clinical Management of Temporomandibular Disorders and Occlusion. 9th ed. St Louis: Elsevier; 2026.
16. Okeson JP. Bell's Oral and Facial Pain. 7th ed. Chicago: Quintessence Publishing; 2014.
17. Glick M, Greenberg MS, Lockhart PB, Challacombe SJ, editors. Burket's Oral Medicine. 13th ed. Hoboken (NJ): Wiley Blackwell; 2021.
18. Challacombe SJ, Carey B, Setterfield J. Scully's Oral and Maxillofacial Medicine: The Basis of Diagnosis and Treatment. 4th ed. Edinburgh: Elsevier; 2023.
19. Fejerskov O, Nyvad B, editors. Dental Caries: The Disease and Its Clinical Management. 4th ed. Oxford: Wiley Blackwell; 2025.
20. Marsh PD, Lewis MAO, Rogers H, Williams DW, Wilson M. Oral Microbiology. 6th ed. Edinburgh: Elsevier; 2016.
21. Basker RM, Davenport JC, Thomason JM. Prosthetic Treatment of the Edentulous Patient. 5th ed. Oxford: Wiley Blackwell; 2011.
22. Zarb GA, Hobkirk JA, Eckert SE, Jacob RF, editors. Prosthodontic Treatment for Edentulous Patients: Complete Dentures and Implant-Supported Prostheses. 13th ed. St Louis: Elsevier Mosby; 2013.
23. Wassell R, Naru A, Steele J, Nohl F. Applied Occlusion. 2nd ed. London: Quintessence Publishing; 2015.

1.4 Specialist reference works on saliva, chemosensation, swallowing and speech

24. Edgar M, Dawes C, O'Mullane D, editors. Saliva and Oral Health: An Essential Overview for the Health Professional. 4th ed. London: Stephen Hancocks; 2012.
25. Doty RL, editor. Handbook of Olfaction and Gustation. 3rd ed. Hoboken (NJ): Wiley Blackwell; 2015.
26. Logemann JA. Evaluation and Treatment of Swallowing Disorders. 2nd ed. Austin (TX): Pro-Ed; 1998.
27. Ekberg O, editor. Dysphagia: Diagnosis and Treatment. 2nd ed. Cham: Springer; 2019.
28. Seikel JA, Drumright DG, Hudock DJ. Anatomy and Physiology for Speech, Language, and Hearing. 6th ed. San Diego (CA): Plural Publishing; 2019.
29. Sessle BJ, editor. Orofacial Pain: Recent Advances in Assessment, Management, and Understanding of Mechanisms. Washington (DC): IASP Press; 2014.

1.5 Classification standards, guidelines and organisational sources

30. International Classification of Orofacial Pain, 1st edition (ICOP). Cephalalgia. 2020;40(2):129-221.
31. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia. 2018;38(1):1-211.
32. National Institute for Health and Care Excellence. Oral health promotion: general dental practice. NICE guideline NG30. London: NICE. Available from: https://www.nice.org.uk/guidance/ng30
33. National Institute for Health and Care Excellence. Oral health for adults in care homes. NICE guideline NG48. London: NICE. Available from: https://www.nice.org.uk/guidance/ng48
34. National Institute for Health and Care Excellence. Stroke and transient ischaemic attack in over 16s: diagnosis and initial management. NICE guideline NG128. London: NICE. Available from: https://www.nice.org.uk/guidance/ng128
35. Office for Health Improvement and Disparities. Delivering better oral health: an evidence-based toolkit for prevention. London: OHID. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention
36. Scottish Dental Clinical Effectiveness Programme. Clinical guidance in dentistry. Dundee: SDCEP. Available from: https://www.sdcep.org.uk
37. 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

38. General Dental Council. Preparing for practice: dental team learning outcomes for registration. London: GDC; 2015. Available from: https://www.gdc-uk.org

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

1.6 Key journals for currency

Archives of Oral Biology · Journal of Oral Rehabilitation · Journal of Dental Research · European Journal of Oral Sciences · Chemical Senses · Dysphagia · Journal of Oral & Facial Pain and Headache · Physiology & Behavior · Caries Research · Oral Diseases · British Dental Journal · International Dental Journal

PART 2 — CHAPTER-SPECIFIC REFERENCES

Chapter 1 — Introduction to Oral Physiology

1.1 Scope and clinical relevance · 1.2 Control systems overview (neural, autonomic, reflex and hormonal)

Core texts: [1] Chs. on functional organisation of the body and homeostasis · [2] Ch. 1 and the autonomic nervous system chapter · [5] General physiology and nervous system sections · [6] Sections 1, 2 and 10 · [13] Introductory chapters · [14] Introductory chapters · [8] Ch. on the oral mucosa and general oral biology

Additional

- Dawes C, Pedersen AML, Villa 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, Carpenter GH. Salivary secretion: mechanism and neural regulation. Monogr Oral Sci. 2014;24:14-29.
- Lund JP, Kolta A. Generation of the central masticatory pattern and its modification by sensory feedback. Dysphagia. 2006;21(3):167-74.
- Sessle BJ. Chronic orofacial pain: models, mechanisms, and genetic and related environmental influences. Int J Mol Sci. 2021;22(13):7112.
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- Bergdahl M, Bergdahl J. Low unstimulated salivary flow and subjective oral dryness: association with medication, anxiety, depression, and stress. J Dent Res. 2000;79(9):1652-8.

Chapter 2 — Salivary Glands and Saliva

2.1 Anatomy and histology · 2.2 Mechanism of secretion · 2.3 Composition · 2.4 Functions · 2.5 Regulation · 2.6 Flow rates and measurement · 2.7 Salivary dysfunction

Core texts: [24] Whole volume · [8] Ch. on salivary glands · [9] Ch. on the salivary glands · [1] Ch. on secretory functions of the alimentary tract · [3] Gastrointestinal section · [17] Ch. on salivary gland disease · [18] Chs. on dry mouth and salivary gland disorders

Additional

- Proctor GB. The physiology of salivary secretion. Periodontol 2000. 2016;70(1):11-25.
- Proctor GB, Carpenter GH. Regulation of salivary gland function by autonomic nerves. Auton Neurosci. 2007;133(1):3-18.
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- Dawes C, Wong DTW. Role of saliva and salivary diagnostics in the advancement of oral health. J Dent Res. 2019;98(2):133-41.

Chapter 3 — Mastication (Chewing Physiology)

3.1 Functional anatomy · 3.2 Chewing cycle and movements · 3.3 Neural control · 3.4 Efficiency of mastication · 3.5 Clinical correlations

Core texts: [15] Chs. 2, 3 and 5 · [23] Whole text · [11] Chs. on the muscles of mastication and the temporomandibular joint · [12] Head and neck section · [13] Chs. on mastication · [1] Chs. on motor control and reflexes · [7] Motor systems section

Additional

- Lund JP. Mastication and its control by the brain stem. Crit Rev Oral Biol Med. 1991;2(1):33-64.
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- Lobbezoo F, Ahlberg J, Raphael KG, et al. International consensus on the assessment of bruxism: report of a work in progress. J Oral Rehabil. 2018;45(11):837-44.
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- Kapur KK, Soman SD. Masticatory performance and efficiency in denture wearers. J Prosthet Dent. 1964;14(4):687-94.

Chapter 4 — Swallowing (Deglutition)

4.1 Phases of swallowing · 4.2 Swallowing reflex control · 4.3 Protective mechanisms · 4.4 Clinical correlations

Core texts: [26] Whole text · [27] Whole volume · [1] Ch. on propulsion and mixing of food in the alimentary tract · [2] Gastrointestinal motility chapter · [3] Gastrointestinal section · [5] Digestive system section · [11] Chs. on the pharynx, larynx and soft palate

Additional

- Jean A. Brain stem control of swallowing: neuronal network and cellular mechanisms. Physiol Rev. 2001;81(2):929-69.
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Chapter 5 — Speech Physiology (Phonation and Articulation)

5.1 Components of speech · 5.2 Role of oral structures in articulation · 5.3 Dental relevance

Core texts: [28] Whole text · [11] Chs. on the larynx, tongue and palate · [12] Head and neck section · [22] Chs. on complete denture aesthetics and phonetics · [21] Chs. on complete denture design and tooth position · [7] Language and cortical systems chapters

Additional

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Chapter 6 — Taste (Gustation)

6.1 Taste buds and receptors · 6.2 Primary taste modalities · 6.3 Neural pathways · 6.4 Factors affecting taste · 6.5 Clinical correlations

Core texts: [25] Chs. on gustatory anatomy, transduction and taste disorders · [1] Ch. on the chemical senses · [2] Smell and taste chapter · [7] Chs. on the chemical senses · [3] Nervous system section · [8] Ch. on the oral mucosa and tongue · [13] Chs. on taste

Additional

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Chapter 7 — Smell (Olfaction) and Flavour Perception

7.1 Olfactory receptors and pathway · 7.2 Retronasal olfaction and flavour

Core texts: [25] Chs. on olfactory anatomy, transduction and flavour · [1] Ch. on the chemical senses · [2] Smell and taste chapter · [7] Chs. on the chemical senses · [3] Nervous system section · [12] Chs. on the nasal cavity and cranial nerves

Additional

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- Parma V, Ohla K, Veldhuizen MG, et al. More than smell - COVID-19 is associated with severe impairment of smell, taste, and chemesthesis. Chem Senses. 2020;45(7):609-22.

Chapter 8 — Oral Sensation, Pain and Reflexes

8.1 Sensory modalities in the oral cavity · 8.2 Orofacial pain physiology · 8.3 Reflexes · 8.4 Clinical correlation

Core texts: [16] Whole text · [15] Chs. 2, 3 and the orofacial pain chapters · [29] Whole volume · [30] · [31] · [1] Somatic sensation and pain chapters · [7] Sensory systems and pain sections · [8] Ch. on dentine and pulp

Additional

- Sessle BJ. Acute and chronic craniofacial pain: brainstem mechanisms of nociceptive transmission and neuroplasticity. Crit Rev Oral Biol Med. 2000;11(1):57-91.
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Chapter 9 — Oral Soft Tissue Physiology

9.1 Oral mucosal barrier · 9.2 Healing and repair in oral mucosa · 9.3 Clinical correlations

Core texts: [8] Ch. on the oral mucosa · [9] Ch. on the oral mucosa · [10] Chs. on oral mucosa and tissue repair · [17] Chs. on ulcerative and vesiculobullous disease · [18] Chs. on oral ulceration and mucosal disease · [24] Chs. on the protective functions of saliva

Additional

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Chapter 10 — Integrative Oral Functions and Applied Physiology

10.1 Saliva-diet-biofilm interactions · 10.2 Edentulism and oral function · 10.3 Geriatric considerations

Core texts: [19] Chs. on the caries process, saliva and diet · [24] Chs. on saliva and caries · [20] Chs. on dental plaque and oral biofilms · [21] Chs. on the edentulous patient · [22] Chs. on complete denture treatment · [34] · [36]

Additional

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