



Pain Science

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 pain science and orofacial pain texts

1. McMahon SB, Koltzenburg M, Tracey I, Turk DC, editors. Wall and Melzack's Textbook of Pain. 6th ed. Philadelphia: Elsevier Saunders; 2013.
2. Sharav Y, Benoliel R, editors. Orofacial Pain and Headache. 2nd ed. Chicago: Quintessence Publishing; 2015.
3. Okeson JP. Bell's Oral and Facial Pain. 7th ed. Chicago: Quintessence Publishing; 2014.
4. Okeson JP. Management of Temporomandibular Disorders and Occlusion. 8th ed. St Louis: Elsevier; 2020.
5. Sessle BJ, editor. Orofacial Pain: Recent Advances in Assessment, Management, and Understanding of Mechanisms. Washington (DC): IASP Press; 2014.
6. Zakrzewska JM, editor. Orofacial Pain. Oxford: Oxford University Press; 2009. (Oxford Pain Management Library).
7. Butler DS, Moseley GL. Explain Pain. 2nd ed. Adelaide: Noigroup Publications; 2013.

1.2 Basic science: neuroanatomy, neurophysiology and oral biology

8. Kandel ER, Koester JD, Mack SH, Siegelbaum SA, editors. Principles of Neural Science. 6th ed. New York: McGraw Hill; 2021.
9. Hall JE, Hall ME. Guyton and Hall Textbook of Medical Physiology. 14th ed. Philadelphia: Elsevier; 2021.
10. Standring S, editor. Gray's Anatomy: The Anatomical Basis of Clinical Practice. 42nd ed. Edinburgh: Elsevier; 2020.
11. Nanci A. Ten Cate's Oral Histology: Development, Structure, and Function. 10th ed. St Louis: Elsevier; 2024.
12. Berkovitz BKB, Holland GR, Moxham BJ. Oral Anatomy, Histology and Embryology. 5th ed. Edinburgh: Elsevier; 2017.

1.3 Pharmacology, therapeutics and local anaesthesia

13. Yagiela JA, Dowd FJ, Johnson BS, Mariotti AJ, Neidle EA, editors. Pharmacology and Therapeutics for Dentistry. 7th ed. St Louis: Elsevier; 2017.
14. Ritter JM, Flower R, Henderson G, Loke YK, MacEwan D, Robinson E, et al. Rang and Dale's Pharmacology. 10th ed. Edinburgh: Elsevier; 2023.

15. Joint Formulary Committee. British National Formulary. London: BMJ Group and Pharmaceutical Press. Available from: <https://bnf.nice.org.uk>
16. Malamed SF. Handbook of Local Anesthesia. 7th ed. St Louis: Elsevier; 2020.
17. Meechan JG. Practical Dental Local Anaesthesia. 2nd ed. London: Quintessence Publishing; 2010.

1.4 Clinical dentistry texts used across chapters

18. Odell EW, editor. Clinical Problem Solving in Dentistry. 4th ed. Edinburgh: Elsevier; 2020.
19. Challacombe SJ, Carey B, Setterfield J. Scully's Oral and Maxillofacial Medicine: The Basis of Diagnosis and Treatment. 4th ed. Edinburgh: Elsevier; 2023.
20. Glick M, Greenberg MS, Lockhart PB, Challacombe SJ, editors. Burket's Oral Medicine. 13th ed. Hoboken (NJ): Wiley Blackwell; 2021.
21. Hargreaves KM, Berman LH, editors. Cohen's Pathways of the Pulp. 12th ed. St Louis: Elsevier; 2020.
22. Newman MG, Takei HH, Klokkevold PR, Carranza FA, editors. Newman and Carranza's Clinical Periodontology. 13th ed. Philadelphia: Elsevier; 2019.
23. Coulthard P, Horner K, Sloan P, Theaker E. Master Dentistry Volume 1: Oral and Maxillofacial Surgery, Radiology, Pathology and Oral Medicine. 3rd ed. Edinburgh: Churchill Livingstone Elsevier; 2013.

1.5 Classification, terminology and diagnostic criteria

24. Raja SN, Carr DB, Cohen M, Finnerup NB, Flor H, Gibson S, et al. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. Pain. 2020;161(9):1976-82.
25. International Association for the Study of Pain. IASP terminology. Washington (DC): IASP. Available from: <https://www.iasp-pain.org/resources/terminology/>
26. International Classification of Orofacial Pain, 1st edition (ICOP). Cephalalgia. 2020;40(2):129-221.
27. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia. 2018;38(1):1-211.
28. 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.
29. Treede RD, Rief W, Barke A, Aziz Q, Bennett MI, Benoliel R, et al. Chronic pain as a symptom or a disease: the IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11). Pain. 2019;160(1):19-27.
30. Cruccu G, Finnerup NB, Jensen TS, Scholz J, Sindou M, Svensson P, et al. Trigeminal neuralgia: new classification and diagnostic grading for practice and research. Neurology. 2016;87(2):220-8.
31. Finnerup NB, Haroutounian S, Kamerman P, Baron R, Bennett DLH, Bouhassira D, et al. Neuropathic pain: an updated grading system for research and clinical practice. Pain. 2016;157(8):1599-606.

1.6 Guidelines, professional standards and public health sources

32. National Institute for Health and Care Excellence. Chronic pain (primary and secondary) in over 16s: assessment of all chronic pain and management of chronic primary pain. NICE guideline NG193. London: NICE; 2021. Available from: <https://www.nice.org.uk/guidance/ng193>
33. National Institute for Health and Care Excellence. Neuropathic pain in adults: pharmacological management in non-specialist settings. NICE guideline CG173. London: NICE. Available from: <https://www.nice.org.uk/guidance/cg173>
34. National Institute for Health and Care Excellence. Suspected cancer: recognition and referral. NICE guideline NG12. London: NICE. Available from: <https://www.nice.org.uk/guidance/ng12>
35. Scottish Dental Clinical Effectiveness Programme. Drug Prescribing for Dentistry. 3rd ed. Dundee: SDCEP; 2016. Available from: <https://www.sdcep.org.uk>
36. Scottish Dental Clinical Effectiveness Programme. Management of Acute Dental Problems. 2nd ed. Dundee: SDCEP. Available from: <https://www.acutedentalproblems.sdcep.org.uk>
37. Faculty of Pain Medicine of the Royal College of Anaesthetists. Opioids Aware: a resource for patients and healthcare professionals to support prescribing of opioid medicines for pain. London: FPM. Available from: <https://www.fpm.ac.uk/opioids-aware>

38. Faculty of Pain Medicine of the Royal College of Anaesthetists. Core Standards for Pain Management Services in the UK. 2nd ed. London: FPM; 2021. Available from: <https://www.fpm.ac.uk>
39. World Health Organization. WHO guidelines for the pharmacological and radiotherapeutic management of cancer pain in adults and adolescents. Geneva: WHO; 2018. Available from: <https://www.who.int/publications/i/item/9789241550390>
40. General Dental Council. Standards for the Dental Team. London: GDC; 2013. Available from: <https://standards.gdc-uk.org>
41. General Dental Council. Preparing for practice: dental team learning outcomes for registration. London: GDC; 2015. Available from: <https://www.gdc-uk.org>
42. Dental Council of India. Bachelor of Dental Surgery (BDS) Course Regulations, 2007 (as amended). New Delhi: DCI.

1.7 Key journals for currency

Pain · European Journal of Pain · British Journal of Pain · Journal of Oral & Facial Pain and Headache · Cephalalgia · Journal of Oral Rehabilitation · Journal of Endodontics · International Endodontic Journal · Journal of Dental Research · British Dental Journal · Journal of Dentistry · Journal of the American Dental Association · Anesthesia Progress · Clinical Oral Investigations · Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology

PART 2 — CHAPTER-SPECIFIC REFERENCES

Chapter 1 — Foundations of Pain Science for Dentistry

1.1 Definition of pain and clinical relevance in dentistry · 1.2 Acute vs chronic pain · 1.3 Nociceptive vs inflammatory vs neuropathic pain · 1.4 Orofacial pain as a special domain · 1.5 Pain terminology · 1.6 Red flags requiring urgent referral

Core texts: [1] Introductory chapters on the definition, dimensions and classification of pain · [2] Chs. on the classification and epidemiology of orofacial pain · [3] Introductory chapters on pain concepts · [5] · [7] · [18] · [24] · [25] · [26] · [29] · [31]

Additional

- Loeser JD, Treede RD. The Kyoto protocol of IASP Basic Pain Terminology. *Pain*. 2008;137(3):473-7.
- Cohen M, Quintner J, van Rysewyk S. Reconsidering the IASP definition of pain. *Pain Rep*. 2018;3(2):e634.
- Kosek E, Cohen M, Baron R, Gebhart GF, Mico JA, Rice ASC, et al. Do we need a third mechanistic descriptor for chronic pain states? *Pain*. 2016;157(7):1382-6.
- Nicholas M, Vlaeyen JWS, Rief W, Barke A, Aziz Q, Benoliel R, et al. The IASP classification of chronic pain for ICD-11: chronic primary pain. *Pain*. 2019;160(1):28-37.
- Renton T. Dental (odontogenic) pain. *Rev Pain*. 2011;5(1):2-7.
- Zakrzewska JM. Differential diagnosis of facial pain and guidelines for management. *Br J Anaesth*. 2013;111(1):95-104.
- Macfarlane TV, Blinkhorn AS, Davies RM, Kinsey J, Worthington HV. Oro-facial pain in the community: prevalence and associated impact. *Community Dent Oral Epidemiol*. 2002;30(1):52-60.
- Breivik H, Collett B, Ventafridda V, Cohen R, Gallacher D. Survey of chronic pain in Europe: prevalence, impact on daily life, and treatment. *Eur J Pain*. 2006;10(4):287-333.
- Fayaz A, Croft P, Langford RM, Donaldson LJ, Jones GT. Prevalence of chronic pain in the UK: a systematic review and meta-analysis of population studies. *BMJ Open*. 2016;6(6):e010364.

Chapter 2 — Neuroanatomy and Neurophysiology of Pain (Applied)

2.1 Nociceptors: A-delta vs C fibres · 2.2 Peripheral transduction · 2.3 Peripheral sensitization · 2.4 Trigeminal nerve pathways · 2.5 Central transmission and ascending pathways · 2.6 Modulation and the gate control concept · 2.7 Central sensitization · 2.8 Descending control systems

Core texts: [1] Chs. on peripheral mechanisms, spinal and trigeminal transmission, and descending modulation · [5] · [8] Chs. on somatosensation and pain · [9] Ch. on somatic sensations: pain, headache and thermal sensations · [10] Trigeminal nerve and head and neck neuroanatomy · [11] Dentine-pulp complex and its innervation · [12]

Additional

- Melzack R, Wall PD. Pain mechanisms: a new theory. *Science*. 1965;150(3699):971-9.
- Basbaum AI, Bautista DM, Scherrer G, Julius D. Cellular and molecular mechanisms of pain. *Cell*. 2009;139(2):267-84.
- Julius D, Basbaum AI. Molecular mechanisms of nociception. *Nature*. 2001;413(6852):203-10.
- Woolf CJ, Ma Q. Nociceptors — noxious stimulus detectors. *Neuron*. 2007;55(3):353-64.
- Woolf CJ. Central sensitization: implications for the diagnosis and treatment of pain. *Pain*. 2011;152(3 Suppl):S2-15.
- Latremoliere A, Woolf CJ. Central sensitization: a generator of pain hypersensitivity by central neural plasticity. *J Pain*. 2009;10(9):895-926.
- Sessle BJ. Acute and chronic craniofacial pain: brainstem mechanisms of nociceptive transmission and neuroplasticity, and their clinical correlates. *Crit Rev Oral Biol Med*. 2000;11(1):57-91.
- Millan MJ. Descending control of pain. *Prog Neurobiol*. 2002;66(6):355-474.
- Ossipov MH, Morimura K, Porreca F. Descending pain modulation and chronification of pain. *Curr Opin Support Palliat Care*. 2014;8(2):143-51.

- Brännström M. The hydrodynamic theory of dentinal pain: sensation in preparations, caries, and the dentinal crack syndrome. *J Endod.* 1986;12(10):453-7.
- Chung G, Jung SJ, Oh SB. Cellular and molecular mechanisms of dental nociception. *J Dent Res.* 2013;92(11):948-55.

Chapter 3 — Pain Assessment and Clinical History-Taking

3.1 Structured pain history (SOCRATES/OPQRST) · 3.2 Pain intensity measures · 3.3 Quality descriptors · 3.4 Temporal pattern · 3.5 Aggravating and relieving factors · 3.6 Associated symptoms · 3.7 Psychosocial screening basics (yellow flags) · 3.8 Documentation and baseline recording

Core texts: [3] Chs. on history taking and clinical examination of the pain patient · [6] · [18] · [19] Chs. on history, examination and investigations · [20] · [23] · [26] Diagnostic criteria and descriptors · [28] · [32] Assessment recommendations · [40] Record keeping standards

Additional

- Hawker GA, Mian S, Kendzerska T, French M. Measures of adult pain. *Arthritis Care Res.* 2011;63(Suppl 11):S240-52.
- Jensen MP, Karoly P, Braver S. The measurement of clinical pain intensity: a comparison of six methods. *Pain.* 1986;27(1):117-26.
- Melzack R. The McGill Pain Questionnaire: major properties and scoring methods. *Pain.* 1975;1(3):277-99.
- Von Korff M, Ormel J, Keefe FJ, Dworkin SF. Grading the severity of chronic pain. *Pain.* 1992;50(2):133-49.
- Bennett MI, Smith BH, Torrance N, Potter J. The S-LANSS score for identifying pain of predominantly neuropathic origin. *J Pain.* 2005;6(3):149-58.
- Freynhagen R, Baron R, Gockel U, Tölle TR. painDETECT: a new screening questionnaire to identify neuropathic components in patients with back pain. *Curr Med Res Opin.* 2006;22(10):1911-20.
- Ohrbach R, Dworkin SF. AAPT diagnostic criteria for chronic painful temporomandibular disorders. *J Pain.* 2019;20(11):1276-92.
- Sullivan MJL, Bishop SR, Pivik J. The Pain Catastrophizing Scale: development and validation. *Psychol Assess.* 1995;7(4):524-32.
- Humphris GM, Morrison T, Lindsay SJE. The Modified Dental Anxiety Scale: validation and United Kingdom norms. *Community Dent Health.* 1995;12(3):143-50.
- Nicholas MK, Linton SJ, Watson PJ, Main CJ. Early identification and management of psychological risk factors ('yellow flags') in patients with low back pain. *Phys Ther.* 2011;91(5):737-53.
- Turk DC, Melzack R, editors. *Handbook of Pain Assessment.* 3rd ed. New York: Guilford Press; 2011.

Chapter 4 — Odontogenic Pain (Dental Origin)

4.1 Pulpal pain: reversible vs irreversible pulpitis · 4.2 Periapical pain · 4.3 Periodontal pain and pericoronitis · 4.4 Cracked tooth syndrome · 4.5 Dentine hypersensitivity · 4.6 Post-operative dental pain · 4.7 Referred odontogenic pain patterns

Core texts: [21] Chs. on diagnosis and on pulpal and periapical disease · [3] Chs. on dental and periodontal pain · [18] · [19] · [22] Acute periodontal conditions · [26] Section 1: orofacial pain attributed to dentoalveolar and anatomically related structures · [36]

Additional

- Levin LG, Law AS, Holland GR, Abbott PV, Roda RS. Identify and define all diagnostic terms for pulpal health and disease states. *J Endod.* 2009;35(12):1645-57.
- Abbott PV. Classification, diagnosis and clinical manifestations of apical periodontitis. *Endod Topics.* 2004;8(1):36-54.
- Bender IB. Pulpal pain diagnosis — a review. *J Endod.* 2000;26(3):175-9.
- Banerji S, Mehta SB, Millar BJ. Cracked tooth syndrome. Part 1: aetiology and diagnosis. *Br Dent J.* 2010;208(10):459-63.
- 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.

- Canadian Advisory Board on Dentin Hypersensitivity. Consensus-based recommendations for the diagnosis and management of dentin hypersensitivity. *J Can Dent Assoc.* 2003;69(4):221-6.
- Herrera D, Retamal-Valdes B, Alonso B, Feres M. Acute periodontal lesions (periodontal abscesses and necrotizing periodontal diseases) and endo-periodontal lesions. *J Clin Periodontol.* 2018;45(Suppl 20):S78-94.
- Wehr C, Cruz G, Young S, Fakhouri WD. An insight into acute pericoronitis and the need for an evidence-based standard of care. *Dent J (Basel).* 2019;7(3):88.
- Nixdorf DR, Moana-Filho EJ, Law AS, McGuire LA, Hodges JS, John MT. Frequency of persistent tooth pain after root canal therapy: a systematic review and meta-analysis. *J Endod.* 2010;36(2):224-30.
- Falace DA, Reid K, Rayens MK. The influence of deep (odontogenic) pain intensity, quality, and duration on the incidence and characteristics of referred orofacial pain. *J Orofac Pain.* 1996;10(3):232-9.

Chapter 5 — Non-Odontogenic Orofacial Pain (Core Intro)

5.1 TMD-related myalgia and arthralgia · 5.2 Trigeminal neuralgia · 5.3 Post-herpetic neuralgia · 5.4 Persistent idiopathic facial pain · 5.5 Burning mouth syndrome · 5.6 Headache disorders with facial pain overlap · 5.7 Sinus-related facial pain · 5.8 Cardiac referred pain

Core texts: [2] · [3] · [4] Chs. on the diagnosis and classification of temporomandibular disorders · [6] · [19] · [20] · [26] · [27] · [28] · [30] · [33]

Additional

- Bendtsen L, Zakrzewska JM, Abbott J, Braschinsky M, Di Stefano G, Donnet A, et al. European Academy of Neurology guideline on trigeminal neuralgia. *Eur J Neurol.* 2019;26(6):831-49.
- Bendtsen L, Zakrzewska JM, Heinskou TB, Hodaie M, Leal PRL, Nurmikko T, et al. Advances in diagnosis, classification, pathophysiology, and management of trigeminal neuralgia. *Lancet Neurol.* 2020;19(9):784-96.
- Peck CC, Goulet JP, Lobbezoo F, Schiffman EL, Alstergren P, Anderson GC, et al. Expanding the taxonomy of the diagnostic criteria for temporomandibular disorders. *J Oral Rehabil.* 2014;41(1):2-23.
- Johnson RW, Rice ASC. Postherpetic neuralgia. *N Engl J Med.* 2014;371(16):1526-33.
- Benoliel R, Gaul C. Persistent idiopathic facial pain. *Cephalalgia.* 2017;37(7):680-91.
- Ariyawardana A, Chmieliauskaite M, Farag AM, Albuquerque R, Forssell H, Nasri-Heir C, et al. World Workshop on Oral Medicine VII: burning mouth syndrome — a systematic review of disease definitions and diagnostic criteria. *Oral Dis.* 2019;25(Suppl 1):141-56.
- Jääskeläinen SK, Woda A. Burning mouth syndrome. *Cephalalgia.* 2017;37(7):627-47.
- Fokkens WJ, Lund VJ, Hopkins C, Hellings PW, Kern R, Reitsma S, et al. European Position Paper on Rhinosinusitis and Nasal Polyps 2020. *Rhinology.* 2020;58(Suppl S29):1-464.
- Kreiner M, Okeson JP. Toothache of cardiac origin. *J Orofac Pain.* 1999;13(3):201-7.
- Kreiner M, Okeson JP, Michelis V, Lujambio M, Isberg A. Craniofacial pain as the sole symptom of cardiac ischemia: a prospective multicenter study. *J Am Dent Assoc.* 2007;138(1):74-9.
- Zakrzewska JM. Multi-dimensionality of chronic pain of the oral cavity and face. *J Headache Pain.* 2013;14(1):37.

Chapter 6 — Mechanisms of Chronic Pain (Understanding Persistence)

6.1 Transition from acute to chronic pain · 6.2 Neuropathic mechanisms · 6.3 Central sensitization and pain amplification · 6.4 Sleep, mood and stress in pain perception · 6.5 Pain behaviours and disability · 6.6 Placebo and nocebo effects

Core texts: [1] Chs. on neuroplasticity, psychological factors and the chronification of pain · [5] · [7] · [8] · [29] · [31] · [32]

Additional

- Ji RR, Nackley A, Huh Y, Terrando N, Maixner W. Neuroinflammation and central sensitization in chronic and widespread pain. *Anesthesiology.* 2018;129(2):343-66.
- Costigan M, Scholz J, Woolf CJ. Neuropathic pain: a maladaptive response of the nervous system to damage. *Annu Rev Neurosci.* 2009;32:1-32.

- Devor M. Ectopic discharge in A-beta afferents as a source of neuropathic pain. *Exp Brain Res.* 2009;196(1):115-28.
- Katz J, Seltzer Z. Transition from acute to chronic postsurgical pain: risk factors and protective factors. *Expert Rev Neurother.* 2009;9(5):723-44.
- Kosek E, Clauw D, Nijs J, Baron R, Gilron I, Harris RE, et al. Chronic nociplastic pain affecting the musculoskeletal system: clinical criteria and grading system. *Pain.* 2021;162(11):2629-34.
- Gatchel RJ, Peng YB, Peters ML, Fuchs PN, Turk DC. The biopsychosocial approach to chronic pain: scientific advances and future directions. *Psychol Bull.* 2007;133(4):581-624.
- Vlaeyen JWS, Linton SJ. Fear-avoidance and its consequences in chronic musculoskeletal pain: a state of the art. *Pain.* 2000;85(3):317-32.
- Vlaeyen JWS, Linton SJ. Fear-avoidance model of chronic musculoskeletal pain: 12 years on. *Pain.* 2012;153(6):1144-7.
- Finan PH, Goodin BR, Smith MT. The association of sleep and pain: an update and a path forward. *J Pain.* 2013;14(12):1539-52.
- Bair MJ, Robinson RL, Katon W, Kroenke K. Depression and pain comorbidity: a literature review. *Arch Intern Med.* 2003;163(20):2433-45.
- Colloca L, Barsky AJ. Placebo and nocebo effects. *N Engl J Med.* 2020;382(6):554-61.
- Benedetti F, Lanotte M, Lopiano L, Colloca L. When words are painful: unraveling the mechanisms of the nocebo effect. *Neuroscience.* 2007;147(2):260-71.

Chapter 7 — Pharmacology of Pain Control (Dentistry-Focused)

7.1 The WHO analgesic ladder · 7.2 Paracetamol · 7.3 NSAIDs · 7.4 Opioids (awareness level) · 7.5 Local anaesthetics · 7.6 Adjuvants for neuropathic pain · 7.7 Drug interactions and contraindications · 7.8 Antibiotics are not analgesics (stewardship)

Core texts: [13] · [14] Chs. on analgesics, local anaesthetics and antimicrobial agents · [15] · [16] · [33] · [35] · [36] · [37] · [39]

Additional

- World Health Organization. Cancer pain relief. 2nd ed. Geneva: WHO; 1996.
- Moore PA, Hersh EV. Combining ibuprofen and acetaminophen for acute pain management after third-molar extractions: translating clinical research to dental practice. *J Am Dent Assoc.* 2013;144(8):898-908.
- Bailey E, Worthington HV, van Wijk A, Yates JM, Coulthard P, Afzal Z. Ibuprofen and/or paracetamol (acetaminophen) for pain relief after surgical removal of lower wisdom teeth. *Cochrane Database Syst Rev.* 2013;(12):CD004624.
- Derry CJ, Derry S, Moore RA. Single dose oral ibuprofen plus paracetamol (acetaminophen) for acute postoperative pain. *Cochrane Database Syst Rev.* 2013;(6):CD010210.
- Aminoshariae A, Kulild JC, Donaldson M, Hersh EV. Evidence-based recommendations for analgesic efficacy to treat pain of endodontic origin: a systematic review of randomized controlled trials. *J Am Dent Assoc.* 2016;147(10):826-39.
- Hersh EV, Moore PA, Grosser T, Polomano RC, Farrar JT, Saraghi M, et al. Nonsteroidal anti-inflammatory drugs and opioids in postsurgical dental pain. *J Dent Res.* 2020;99(7):777-86.
- Finnerup NB, Attal N, Haroutounian S, McNicol E, Baron R, Dworkin RH, et al. Pharmacotherapy for neuropathic pain in adults: a systematic review and meta-analysis. *Lancet Neurol.* 2015;14(2):162-73.
- Wiffen PJ, Derry S, Moore RA, Kalso EA. Carbamazepine for chronic neuropathic pain and fibromyalgia in adults. *Cochrane Database Syst Rev.* 2014;(4):CD005451.
- Agnihotry A, Thompson W, Fedorowicz Z, van Zuuren EJ, Sprakel J. Antibiotic use for irreversible pulpitis. *Cochrane Database Syst Rev.* 2019;(5):CD004969.
- Cope AL, Francis N, Wood F, Chestnutt IG. Systemic antibiotics for symptomatic apical periodontitis and acute apical abscess in adults. *Cochrane Database Syst Rev.* 2018;(9):CD010136.
- Palmer NOA, Martin MV, Pealing R, Ireland RS. An analysis of antibiotic prescriptions from general dental practitioners in England. *J Antimicrob Chemother.* 2000;46(6):1033-5.
- Faculty of General Dental Practice (UK). Antimicrobial Prescribing for General Dental Practitioners. 3rd ed. London: FGDP(UK); 2020.

- Medicines and Healthcare products Regulatory Agency. Drug Safety Update. London: MHRA. Available from: <https://www.gov.uk/drug-safety-update>

Chapter 8 — Local Anaesthesia and Pain During Dental Procedures (Applied)

8.1 Why inflamed tissues are harder to anaesthetise · 8.2 Infiltration vs block · 8.3 Supplemental techniques (intraalveolar, intraosseous, intrapulpal) · 8.4 Strategies to reduce procedural pain · 8.5 Needle phobia and anxiety amplification

Core texts: [16] · [17] · [13] Chs. on local anaesthetics and vasoconstrictors · [15] · [21] Ch. on local anaesthesia in endodontics · [35]

Additional

- Hargreaves KM, Keiser K. Local anesthetic failure in endodontics: mechanisms and management. *Endod Topics*. 2002;1(1):26-39.
- Meechan JG. Why does local anaesthesia not work every time? *Dent Update*. 2005;32(2):66-72.
- Wong JK. Adjuncts to local anesthesia: separating fact from fiction. *J Can Dent Assoc*. 2001;67(7):391-7.
- Nusstein JM, Reader A, Drum M. Local anesthesia strategies for the patient with a 'hot' tooth. *Dent Clin North Am*. 2010;54(2):237-47.
- Kanaa MD, Whitworth JM, Corbett IP, Meechan JG. Articaine buccal infiltration enhances the effectiveness of lidocaine inferior alveolar nerve block. *Int Endod J*. 2009;42(3):238-46.
- Corbett IP, Kanaa MD, Whitworth JM, Meechan JG. Articaine infiltration for anesthesia of mandibular first molars. *J Endod*. 2008;34(5):514-8.
- Aggarwal V, Jain A, Kabi D. Anesthetic efficacy of supplemental buccal and lingual infiltrations of articaine and lidocaine after an inferior alveolar nerve block in patients with irreversible pulpitis. *J Endod*. 2009;35(7):925-9.
- Malamed SF. The periodontal ligament (PDL) injection: an alternative to inferior alveolar nerve block. *Oral Surg Oral Med Oral Pathol*. 1982;53(2):117-21.
- Kudo M. Initial injection pressure for dental local anesthesia: effects on pain and anxiety. *Anesth Prog*. 2005;52(3):95-101.
- Armfield JM, Heaton LJ. Management of fear and anxiety in the dental clinic: a review. *Aust Dent J*. 2013;58(4):390-407.
- Armfield JM, Milgrom P. A clinician guide to patients afraid of dental injections and numbness. *SAAD Dig*. 2011;27:33-9.
- Hamilton JG. Needle phobia: a neglected diagnosis. *J Fam Pract*. 1995;41(2):169-75.
- Renton T, Yilmaz Z. Managing iatrogenic trigeminal nerve injury: a case series and review of the literature. *Int J Oral Maxillofac Surg*. 2012;41(5):629-37.

Chapter 9 — Non-Pharmacological Pain Management

9.1 Behavioural approaches: reassurance, explanation, expectation management · 9.2 Relaxation and breathing techniques · 9.3 Cognitive strategies · 9.4 Cold and heat application · 9.5 Occlusal adjustment and correction of mechanical causes · 9.6 Splint therapy awareness

Core texts: [1] Chs. on psychological and physical therapies for pain · [4] Chs. on occlusal appliance therapy and the management of masticatory muscle pain · [7] · [28] · [32] Non-pharmacological management recommendations

Additional

- Williams ACdeC, Fisher E, Hearn L, Eccleston C. Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database Syst Rev*. 2020;(8):CD007407.
- Louw A, Zimney K, Puente EJ, Diener I. The efficacy of pain neuroscience education on musculoskeletal pain: a systematic review of the literature. *Physiother Theory Pract*. 2016;32(5):332-55.
- Moseley GL, Butler DS. Fifteen years of explaining pain: the past, present, and future. *J Pain*. 2015;16(9):807-13.
- Al-Ani MZ, Davies SJ, Gray RJM, Sloan P, Glenny AM. Stabilisation splint therapy for temporomandibular pain dysfunction syndrome. *Cochrane Database Syst Rev*. 2004;(1):CD002778.

- Friction J, Look JO, Wright E, Alencar FGP, Chen H, Lang M, et al. Systematic review and meta-analysis of randomized controlled trials evaluating intraoral orthopedic appliances for temporomandibular disorders. *J Orofac Pain*. 2010;24(3):237-54.
- Michelotti A, Iodice G, Vollaro S, Steenks MH, Farella M. Evaluation of the short-term effectiveness of education versus an occlusal splint for the treatment of myofascial pain of the jaw muscles. *J Am Dent Assoc*. 2012;143(1):47-53.
- Koh H, Robinson PG. Occlusal adjustment for treating and preventing temporomandibular joint disorders. *Cochrane Database Syst Rev*. 2003;(1):CD003812.
- List T, Axelsson S. Management of TMD: evidence from systematic reviews and meta-analyses. *J Oral Rehabil*. 2010;37(6):430-51.
- Malanga GA, Yan N, Stark J. Mechanisms and efficacy of heat and cold therapies for musculoskeletal injury. *Postgrad Med*. 2015;127(1):57-65.
- Busch V, Magerl W, Kern U, Haas J, Hajak G, Eichhammer P. The effect of deep and slow breathing on pain perception, autonomic activity, and mood processing. *Pain Med*. 2012;13(2):215-28.
- Zeidan F, Vago DR. Mindfulness meditation-based pain relief: a mechanistic account. *Ann N Y Acad Sci*. 2016;1373(1):114-27.
- Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: literature review. *Clin Cosmet Investig Dent*. 2016;8:35-50.

Chapter 10 — Pain in Specific Dental Specialties (Integration)

10.1 Endodontic pain pathways and flare-up concepts • 10.2 Periodontal pain: scaling sensitivity and abscess patterns • 10.3 Oral surgery pain: post-extraction pain and dry socket • 10.4 Prosthodontic pain: denture sore spots and traumatic ulcers • 10.5 Orthodontic pain: inflammatory pain and timing patterns

Core texts: [21] Chs. on endodontic emergencies, flare-ups and postoperative pain • [22] Chs. on periodontal instrumentation, acute lesions and root sensitivity • [23] Oral surgery chapters • [19] • [26] • [36]

Additional

- Siqueira JF Jr. Microbial causes of endodontic flare-ups. *Int Endod J*. 2003;36(7):453-63.
- Sathorn C, Parashos P, Messer HH. The prevalence of postoperative pain and flare-up in single- and multiple-visit endodontic treatment: a systematic review. *Int Endod J*. 2008;41(2):91-9.
- Pak JG, White SN. Pain prevalence and severity before, during, and after root canal treatment: a systematic review. *J Endod*. 2011;37(4):429-38.
- von Troil B, Needleman I, Sanz M. A systematic review of the prevalence of root sensitivity following periodontal therapy. *J Clin Periodontol*. 2002;29(Suppl 3):173-7.
- Sanz M, Herrera D, Kebschull M, Chapple I, Jepsen S, Berglundh T, et al. Treatment of stage I-III periodontitis — the EFP S3 level clinical practice guideline. *J Clin Periodontol*. 2020;47(Suppl 22):4-60.
- Blum IR. Contemporary views on dry socket (alveolar osteitis): a clinical appraisal of standardization, aetiopathogenesis and management. *Int J Oral Maxillofac Surg*. 2002;31(3):309-17.
- Daly BJM, Sharif MO, Jones K, Worthington HV, Beattie A. Local interventions for the management of alveolar osteitis (dry socket). *Cochrane Database Syst Rev*. 2022;(9):CD006968.
- Kivovics P, Jahn M, Borbély J, Márton K. Frequency and location of traumatic ulcerations following placement of complete dentures. *Int J Prosthodont*. 2007;20(4):397-401.
- Emami E, de Souza RF, Kabawat M, Feine JS. The impact of edentulism on oral and general health. *Int J Dent*. 2013;2013:498305.
- Krishnan V. Orthodontic pain: from causes to management — a review. *Eur J Orthod*. 2007;29(2):170-9.
- Ngan P, Kess B, Wilson S. Perception of discomfort by patients undergoing orthodontic treatment. *Am J Orthod Dentofacial Orthop*. 1989;96(1):47-53.

Chapter 11 — Orofacial Pain Red Flags and Referral Pathways

11.1 Persistent pain with no dental cause • 11.2 Numbness and paraesthesia: nerve pathology and malignancy awareness • 11.3 Unexplained swelling, weight loss, dysphagia, persistent ulceration • 11.4 Severe headache with neurological signs • 11.5 Suspected trigeminal neuralgia and onward referral

Core texts: [19] • [20] • [23] • [26] • [30] • [34] • [36] Decision-support flowcharts for acute presentations • [38]

Additional

- National Institute for Health and Care Excellence. Headaches in over 12s: diagnosis and management. NICE guideline CG150. London: NICE. Available from: <https://www.nice.org.uk/guidance/cg150>
- Do TP, Remmers A, Schytz HW, Schankin C, Nelson SE, Obermann M, et al. Red and orange flags for secondary headaches in clinical practice: SNNOOP10 list. *Neurology*. 2019;92(3):134-44.
- Renton T, Yilmaz Z. Profiling of patients presenting with posttraumatic neuropathy of the trigeminal nerve. *J Orofac Pain*. 2011;25(4):333-44.
- Kalladka M, Proter N, Benoliel R, Czerninski R, Eliav E. Mental nerve neuropathy: patient characteristics and neurosensory changes. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2008;106(3):364-70.
- Laurencet FM, Anchisi S, Tullen E, Dietrich PY. Mental neuropathy: report of five cases and review of the literature. *Crit Rev Oncol Hematol*. 2000;34(1):71-9.
- Bagan J, Sarrion G, Jimenez Y. Oral cancer: clinical features. *Oral Oncol*. 2010;46(6):414-7.
- Speight PM, Epstein J, Kujan O, Lingen MW, Nagao T, Ranganathan K, et al. Screening for oral cancer — a perspective from the Global Oral Cancer Forum. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2017;123(6):680-7.
- Ogle OE. Odontogenic infections. *Dent Clin North Am*. 2017;61(2):235-52.
- Carter LM, Layton S. Cervicofacial infection of dental origin presenting to maxillofacial surgery units in the United Kingdom: a national audit. *Br Dent J*. 2009;206(2):73-8.
- Zakrzewska JM. Differential diagnosis of facial pain and guidelines for management. *Br J Anaesth*. 2013;111(1):95-104.

Chapter 12 — Communication Skills in Pain Management

12.1 How language affects pain and placebo reduction • 12.2 Explaining diagnostic uncertainty • 12.3 Setting expectations for post-operative pain and healing • 12.4 Consent: discussing pain risk and control options • 12.5 Adherence: analgesic schedules and safety counselling

Core texts: [7] • [18] • [19] • [32] Recommendations on communication and shared care planning • [37] • [40] Standards on communication, consent and record keeping

Additional

- Colloca L, Barsky AJ. Placebo and nocebo effects. *N Engl J Med*. 2020;382(6):554-61.
- Data-Franco J, Berk M. The nocebo effect: a clinician's guide. *Aust N Z J Psychiatry*. 2013;47(7):617-23.
- Varelmann D, Pancaro C, Cappiello EC, Camann WR. Nocebo-induced hyperalgesia during local anesthetic injection. *Anesth Analg*. 2010;110(3):868-70.
- Lang EV, Hatsiopoulou O, Koch T, Berbaum K, Lutgendorf S, Kettenmann E, et al. Can words hurt? Patient-provider interactions during invasive procedures. *Pain*. 2005;114(1-2):303-9.
- Wells RE, Kaptchuk TJ. To tell the truth, the whole truth, may do patients harm: the problem of the nocebo effect for informed consent. *Am J Bioeth*. 2012;12(3):22-9.
- Silverman J, Kurtz S, Draper J. *Skills for Communicating with Patients*. 3rd ed. London: CRC Press; 2013.
- Kurtz S, Silverman J, Benson J, Draper J. Marrying content and process in clinical method teaching: enhancing the Calgary-Cambridge guides. *Acad Med*. 2003;78(8):802-9.
- Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med*. 2012;27(10):1361-7.
- Schenker Y, Fernandez A, Sudore R, Schillinger D. Interventions to improve patient comprehension in informed consent for medical and surgical procedures: a systematic review. *Med Decis Making*. 2011;31(1):151-73.
- General Medical Council. *Decision making and consent*. Manchester: GMC; 2020. Available from: <https://www.gmc-uk.org>
- *Montgomery v Lanarkshire Health Board* [2015] UKSC 11.
- Nieuwlaat R, Wilczynski N, Navarro T, Hobson N, Jeffery R, Keenanasseril A, et al. Interventions for enhancing medication adherence. *Cochrane Database Syst Rev*. 2014;(11):CD000011.
- Miller WR, Rollnick S. *Motivational Interviewing: Helping People Change*. 3rd ed. New York: Guilford Press; 2013.

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