

OROFACIAL PAIN

PROBLEM BASED LEARNING

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Glossary of terms

After-discharge	continued firing of dorsal horn neurons due to repetitive peripheral stimulation
Algesic	pain producing
Algogen	pain producing substance
Algogenic	pain producing
Allodynia	pain from stimulus that does not normally cause pain
Analgesic	pain relieving
Atypical odontalgia	severe, throbbing pain in teeth without major pathology, phantom tooth pain
Central sensitisation	a phenomenon occurring in the dorsal horn and other central structures causing allodynia and secondary hyperalgesia in uninjured tissue surrounding a site of injury
Complex regional pain syndrome (CRPS) type I	a syndrome that usually develops after an initiating noxious event, is not limited to the distribution of a single peripheral nerve, and is apparently disproportionate to the inciting event
Complex regional pain syndrome type II	burning pain, allodynia and hyperpathia usually in the hand or foot, after partial injury to a nerve or one of its major branches
Hyperalgesia	increased response to a painful stimulus

Neuronal plasticity	nerve sprouting and neuroma formation causing neuropathic pain
Neuropathic pain	pain initiated or caused by a primary lesion or dysfunction in the nervous system
Neuropraxis	crush injury to a nerve
Neurotmesis	sectioning or cutting of a nerve
Nociception	activation of peripheral nociceptor which is recognised centrally as pain
Peripheral sensitisation	a phenomenon where inflammatory mediators sensitise high threshold nociceptors
Pharmacodynamics	effect of drug on body
Pharmacokinetics	metabolic action of body on drug
Physiological pain	pain that serves a protective function (as a warning for tissue damage), is transient and well localized
Sympathetic nervous system activation	characterised by changes in skin temperature, blood flow, resting sweat output and presence of oedema
Sympathetically maintained pain	defined as pain that is maintained by sympathetic efferent innervation or circulating catecholamines
Windup	progressive increase in response of dorsal horn neurons due to repetitive peripheral stimulation

List of Abbreviations

AFP	atypical facial pain (redundant term)
AO	atypical odontalgia
CGRP	calcitonin gene-related peptide
CNS	central nervous system
CRPS	complex regional pain syndrome
CT	computerised tomography
Cyclic-AMP	cyclic-adenosine monophosphate
DAG	diacylglycerol
EMLA	eutectic mixture of local anaesthetics
ENT	ear, nose and throat (otolaryngology)
GABA	gamma-aminobutyric acid
GI	gastrointestinal
IASP	International Association for the Study of Pain
MPQ	McGill Pain Questionnaire
MRI	magnetic resonance imaging
NGF	nerve growth factor
NMDA	n-methyl-d-aspartate
NO	nitric oxide
NRS	numerical rating scale
NSAIDS	nonsteroidal antiinflammatory drugs
OPG	orthopantomogram
PNS	peripheral nervous system
PRI(A)	pain rating index (affective)
PRI(E)	pain rating index (evaluative)
PRI(M)	pain rating index (miscellaneous)
PRI(S)	pain rating index (sensory)
PRI(T)	pain rating index (total)
PTSD	post-traumatic stress disorder

RCT	root canal therapy
ROS	reactive oxygen species
SD	standard deviation
SIP	sympathetically independent pain
SMP	sympathetically maintained pain
TCA	tricyclic antidepressant
TMD	temporomandibular disorder
TMJ	temporomandibular joint
VAS	visual analogue scale
VIP	vasoactive intestinal peptide
WDR	wide dynamic range

International Dental Notation for Tooth Description

The first digit refers to the quadrant of the oral cavity

- 1 = maxillary right
- 2 = maxillary left
- 3 = mandibular left
- 4 = mandibular right

The second digit refers to the tooth number in the stated quadrant

- 1 = central incisor
- 2 = lateral incisor
- 3 = canine
- 4 = 1st premolar
- 5 = 2nd premolar
- 6 = 1st molar
- 7 = 2nd molar
- 8 = 3rd molar

e.g.,

Tooth 11 refers to the maxillary right central incisor

Tooth 36 refers to the mandibular left 1st molar

Generic names in abbreviated form for listed tradename drugs used in the clinical pain questionnaires

a	aspirin	mx	mexiletine
am	amitriptyline	na	naproxen
az	alprazolam	nf	nefazodone
bc	baclofen	nt	nortriptyline
bu	buprenorphine	nz	nitrazepam
c	codeine	ox	oxycodone
cb	carbamazepine	oz	oxazepam
ce	celecoxib	p	paracetamol
cn	clonazepam	pb	phenobarbitone
cp	clomipramine	pe	pethidine
ct	citalopram	pi	piroxicam
cz	clobazam	pt	paroxetine
de	dextropropoxyphene	py	phenytoin
df	diflunisal	pz	pentazocine
di	diclofenac	st	sertraline
dm	dextromoramide	su	sulindac
dp	desipramine	sv	sodium valproate
dt	dothiepin	ta	tiaprofenic acid
dx	doxepin	td	tramadol
dz	diazepam	tn	tenoxicam
fe	fentanyl	tp	trimipramine
fx	fluoxetine	tr	triazolam
fz	flunitrazepam	tz	temazepam
gb	gabapentin	vb	vigabatrin
ib	ibuprofen	vx	venlafaxine
in	indomethacin	z	zopiclone
ip	imipramine		
kc	ketorolac		
ke	ketoprofen		
lt	lamotrigine		
lz	lorazepam		
ma	mefenamic acid		
mb	moclobemide		
me	methadone		
mo	morphine		
ms	mianserin		

Foreword

Pain is a ubiquitous yet unique human experience. It is a highly personal but mainly unpleasant experience for each individual. Its normal purpose is as an important 'helpful' physiological (acute) response to quickly ensure withdrawal from the painful stimulus in order to limit tissue damage. Involvement of emotional / affective responses (fear and anxiety) is part of this pain response. Human pain is probably unique in the degree these latter responses, particular when ongoing pain may initiate and maintain negative psychological effects of distress and suffering, and detrimental environmental changes of restricted social activities and reduced employment. Pain in this context (chronic, persistent) is unhelpful and arguably a multidimensional psychosensory disease process. Pain relief in both the acute and the chronic phase is a basic human right (World Health Organisation). Formation of hospital pain clinics as 'islands of light in a sea of misery' (Australian National Health and Medical Research Council) are the gold standard for patients with a 'pain problem'.

Pain in the orofacial region encompasses several diagnostic states such as temporomandibular disorder, neuropathic trigeminal pain, burning mouth syndrome and trigeminal neuralgia. This book focuses largely on neuropathic trigeminal pain and persistent temporomandibular disorder. Trigeminal neuralgia, burning mouth syndrome and 'short term' temporomandibular disorder have extensive literature resources already available. Representative patient examples are given for each condition for the reader to determine the nature and scope of the pain problem (in contrast to the pain diagnosis). Pain in the oral cavity, face and head is termed 'inescapable'. Patients with orofacial pain have described their pain as being so terrible it was "inhumane", and "mind, body and soul destroying". In this problem based learning (PBL) book patients have completed comprehensive pain inventories that allow the reader to follow sections used in deconstructing the pain jigsaw – distinguishing pain and the effects of pain. Orofacial pain is a complex biopsychosocial problem. Physiological (sensory) pain is an invisible process while the psychological dimensions of pain involving anxiety, fear, panic, despair and depression are often readily observed. Each patient has his/her 'pain story' that must be told to the clinician so they 'understand my pain'. It is impossible for the pain clinician to really understand months or years

of pain in a 15-30 minute consultation. The opportunity for the patient to write down their pain history in an unhurried, non-clinical situation (at home) provides the clinician with the true picture. Scanning a structured format of qualitative and validated quantitative information gives clinical insight into the day-nightmare of chronic pain. Understanding their pain through their personal knowledge retrieves patients from the medical wastebasket category. Showing the patient their written responses acknowledges a genuine problem. Pointing out measured levels of depression and anxiety associated with the pain in the inventory mandates (and smoothes) the process of a potentially difficult referral to crucial specialist psychiatric / psychological disciplines. Written information completed at home (importantly free of clinical bias / cues if the clinician is present) combined with the clinical assessment allows the practitioner to commence early treatment.

Much of the information presented in this book are tables on pain and symptom variables derived from analysis of extensive data obtained from the pain questionnaires completed by patients attending the Pain Management and Research Centre (University of Sydney) at Royal North Shore Hospital, Sydney, Australia. The purpose of this book is to illustrate that complex orofacial pain states can be deconstructed, with separate components of the pain being able to be measured against the 'norm' of the pain group and the general population highlighting areas of individual concern. By working through the various case studies the reader will gain confidence on deciding appropriate allied health professionals to be involved in the assessment process. A number of complete questionnaires are given throughout the book to present raw unadulterated information for the reader to carefully peruse. At the end of Chapter 1 an analysis of one patient questionnaire is provided. At the end of each subsequent chapter are other questionnaires relevant to that chapter and includes a brief summary of the problem. From a learning objective the reader should determine salient points that would indicate further clinical questioning and assessment then formulate a prospective multidisciplinary treatment plan.

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<http://www.painmgmt.usyd.edu.au/html/orofacialhome.htm>