Index

Note: Page numbers in *italics* refer to Figures; those in **bold** to Tables.

Alexandrite lasers, 27
AMD lasers
  Piccaso, 39–41
  Piccaso Lite, 41–2
aphthous ulcers
  bitewings before laser treatment, 198, 200
  home care, 198
oral hygiene instruction (OHI) recommendation, 198
pan before laser treatment, 198, 200
recare interval, 198
six-month SPT, 198, 200
three-month SPT, 198, 199
Argon lasers
  description, 28
  versatility, 29–30
  visible green and blue portion, EM spectrum, 28
  water cooling system, 29
Biolase lasers
  EZ lase, 42–3
  iLase™, 43
borderline periodontal disease advanced, 57
  aggressive, 57
cases
  clinical findings, 124
  clinical notes, 128
  description, 124
  home care, 126
  initial periodontal probing assessment, 126, 127
  IPT with LBR, 124
  maintenance, 126
  prognosis of patient, 126
  sessions, 125
  short-term and long-term goals, 128
  six-week DT follow-up with LBR, 125–6
  six-week SPT probing, 126
  three-month SPT, 126, 129
chronic periodontitis, 48, 57
CO₂ lasers, 33–4

communication skills, dental hygienist
7 Cs of communication, 98–9
definition, 97
elements, 104–6
funnel questions, 100
leading questions, 100
listening, 100–101
nonverbal, 97
open and closed questions, 99–100
power struggles, patients, 97
principles to patient education, 104
probing questions, 100
protective gear removal, 97
rhetorical questions, 100
styles see styles of communication
components, laser
active medium, 19–21
and characteristics, 20, 21
controller subsystem, 21
cooling subsystem, 21
emission modes, 21
laser delivery systems, 25
operating parameters, 21
optical resonator, 21
power and cycles see power and cycles, lasers
pumping mechanism, 21
tissue effects see tissue effects, lasers
tissue interactions, 25
continuous wave (CW), 21
c-reactive proteins (CRPs), 50–52, 124
CRPs see c-reactive proteins (CRPs)
definitive therapy (DT), 92
dentistry lasers
Alexandrite, 27
AMD, 39–42
Argon, 28–30
Biolase, 42–3
CO₂, 33–4
coefficients and absorption characteristics, 27, 29
description, 27
diode, 30–31
EM spectrum, 27, 28
erbium, 33
He:Ne, 30
Ho:YAG, 32–3
Ivoclar, 37–9
navigator, 38–9
Nd:YAG, 31–2
technology4medicine, 43–4
tissue absorption coefficients, 27, 29
Zila, 34–7
Derek’s case
home care, 182
oral hygiene instruction (OHI) recommendation, 182
recare interval, 182
desensitization, 77, 94
diode lasers
clinical applications, 31
description, 30
nonmutagenic, 30
photothermal effect, 30
DT see definitive therapy (DT)
emission modes, lasers, 21
erbium lasers, 33
eye injuries
description, 13
fire, 17
laser plume, 16–17
skin damage, 17
symptoms, 16
EZ Lase ComfortPulse™ diode laser, 42–3
gingivitis
clinical findings, 118
clinical notes, 121
description, 118
follow-up, 119
home care, 119
initial periodontal probing assessment, 119, 120
laser bacterial reduction (LBR), 121
maintenance, 119
oral hygiene instruction (OHI)
recommendation, 119
prognosis of patient, 121
prophy with LBR, 118
short-term and long-term
goals, 121
tissue description, 119
guided-tissue
regenerations (GTRs)
average probe scores, 68
bactericidal effect, 69
clinical application, LLLT, 70
continuous wave diode laser
irradiation, 70–71
definition, 62
diode lasers, 71
diseased epithelial lining
removal, 69
epithelial vs. connective
tissues, 62
healing process, 69
healthy tissues, 61
hygienists, 62
LAPT see laser-assisted
periodontal therapy (LAPT)
low-level lasers, 68
periodontal pockets, 61
periodontal tissue healing, 62
photobiomodulation, 71
retrospective analysis, 70
scaling and root planning
(SRPs), 70
soft-tissue lasers, 61
subgingival microflora
populations, 69
wound healing, 72

iLase™ laser, 43
initial periodontal therapy (IPT)
in advanced periodontal disease
case, 164
in borderline periodontal disease
case, 124
charting and examination, 85
in early periodontal disease
case, 132
home care instruction sheet to
patient, 86, 87
hygiene implementation, 85
in moderate periodontal disease
case, 140
in moderate periodontal implant
case, 152
nonsurgical treatment
program, 86
sessions, 85
insurance codes and fees
in Calgary, Alberta, Canada,
110–111
in California
hygiene codes, 107–8
pricing and use, 108
scheduling options, 109
return on investment, 111–12
in Texas
hygiene codes, 109
pricing and use, 109–10
scheduling options, 110
IPT see initial periodontal
therapy (IPT)
Ivoclar laser
description, 37
navigator, 38–9
Odyssey® 2.4G diode laser, 37–8

He:Ne lasers, 30
herpetic lesions
day 1, 2 and 7 after laser
treatment, 94, 95
description, 94
postoperative laser treatment,
94, 96
herpetic lesions 1 and 2, 214–17
Ho:YAG lasers, 32–3

LAPT see laser-assisted periodontal
therapy (LAPT)
laser applications, dental hygienist
adherent plaque and calculus
removal, 75
aphthous ulcers, 77
curettage procedure, 76
gum disease procedures, 76
herpetic lesions, 76
laser applications, dental hygienist (cont’d)
laser placement, 76
noncontract mode, 77
regulations, bylaws and restrictions, 75
scaling and root planning (SRP), 75
ultrasonic scalers (USSs), 76
laser-assisted periodontal therapy (LAPT)
before and after laser therapy, 64
biostimulation, 64, 66–7
in clinical applications, 85
crest of pockets, 87, 88
definition, 83
definitive therapy (DT), 92
digital X-ray, healing and bone regrowth, 67
diseased coagulated tissue removal, 87, 88
fiber tip calibration, 87, 89
healing process is beginning, 68
IPT appointment see initial periodontal therapy (IPT)
periodontal disease treatment sheet, patient, 84, 85
pockets and treatment plan, 83
postoperative fresh bleed, 90
questions, 83, 85
scheduling, 85
settings, laser
de-epithelization, 83
steps, appointments, 86
supportive periodontal therapy (SPT), 92
traditional X-ray, healing and bone regrowth, 66
treatment planning formulas, 85
types, 62
vitamin E capsules, 91
laser bacterial reduction (LBR) cleaving instrument, 82
description, 79
exploratory stroke, light feather grasp, 81
gram-negative bacteria, 82
introduction to patient, 80, 81
laser set at 15 W pulsed, 81, 82
orthodontia, 81
procedure cost, 82
setup at 15 W and pulsed, 81, 82
tell-tale signs, 81
lasers
active mediums, 3–4
classification, 11, 12
dental hygienists, 6
description, 9
Einstein’s theory, 3, 5
in EM spectrum and HeNe medium, 9
frequency, 9–10
low-level laser therapy (LLLT), 6
maser and ruby laser, 3, 4
ND:YAG and diode, 4–5
oral soft tissues, 6
periodontal therapy, 59
principles, 5
regions, emission, 10
safety see safety, lasers
target, melanin and hemoglobin, 10
Theodore H. Maiman, 3, 4
tissue absorption coefficient, 5, 6
types, 10
use in soft-tissue periodontal procedures, 5
wavelength and measurements, 9, 10
LBR see laser bacterial reduction (LBR)
LDLs see low-density lipoproteins (LDLs)
liquid lasers, 19
LLLT see low-level laser therapy (LLLT)
low-density lipoproteins (LDLs), 52
low-level laser therapy (LLLT), 6, 62, 68, 70, 71
malocclusion
FM series before laser treatment, 194, 196
home care, 194
oral hygiene instruction (OHI) recommendation, 194
recare interval, 194
three-month SPT, 194, 195
maximum permissible exposure (MPE), 11
MPE see maximum permissible exposure (MPE)

Nd:YAG lasers
dental applications, 32
description, 31
free-running pulsed mode, 31–2
NHZ see nominal hazard zone (NHZ)
NOHD see nominal ocular hazard distance (NOHD)
nominal hazard zone (NHZ), 11
nominal ocular hazard distance (NOHD), 11
NV Microlaser™ laser, 35–6
NV Ortho laser, 36–7

OD see optical density (OD)
Odyssey® 2.4G diode laser, 37–8
optical density (OD), 11

periodontal disease
advanced
clinical findings, 164
clinical notes, 173
description, 164
home care, 168
initial probing depths assessment, 169, 170
IPT with LBR, 164–5
long-term goals, 173
maintenance, 169
oral hygiene instruction (OHI) recommendation, 169
sessions, 165–8
short-term goals, 171, 173
six-week DT follow-up with LBR, 168
six-week SPT with probing, 168
three-month SPT, 171, 172
early
clinical findings, 132
clinical notes, 137
description, 132
home care, 135
initial periodontal probing assessment, 135, 136
IPT with LBR, 132
maintenance, 135
oral hygiene instruction (OHI) recommendation, 135
sessions, 133–134
short-term and long-term goals, 137
six-week DT follow-up with LBR, 134
six-week SPT with probing, 134–5
three-month SPT, 135, 138
moderate
clinical findings, 140
clinical notes, 147
description, 140
home care, 144
IPT with LBR, 140–141
maintenance, 144
oral hygiene instruction (OHI) recommendation, 144
sessions, 141–3
short-term and long-term goals, 145
six-week DT follow-up with LBR, 143
six-week SPT with probing, 144
three-month SPT, 144, 146, 148
pathogenesis
definition, biofilm, 50
destructive enzymes, 50
inflammatory response, 51
mechanical removal, 50
migration, inflammatory mediators, 50
sulcular wall, immune response and Krebs cycle, 51
supplemental cases and results, 201–13
periodontal implant case, moderate clinical findings, 152
clinical notes, 160–161
home care, 155
initial probing depths assessment, 157, 158
IPT with LBR, 152
laser therapy, 157
long-term goals, 160
maintenance, 155
one year later probe depths, 157, 159
oral hygiene instruction (OHI) recommendation, 155
sessions, 152–4
short-term goals, 157, 160
six-week DT follow-up with LBR, 155
six-week SPT with probing, 155
UL quadrant, implants, 155, 156
periodontal therapy
adherent plaque and calculus removal, 58
bad bacteria collection, 51
bad breath
FM series before laser treatment, 186, 188
home care, 186
oral hygiene instruction (OHI) recommendation, 186
recare interval, 186
three-month SPT, 186, 187
birth of plaque, 52–3
chronic periodontitis, 48
clinically normal/healthy gingival tissue, 53, 54
data-collection process, 53
definitions, 47–8
destructive process, 48
genetics, 49
gingivitis, 53, 54, 55–6
home care, 50
hormonal changes and stress, 49
immune system, 49
lasers in, 59
local oral factors, 49
low diet, nutrients, 49
maintenance, 59
mouth-body connection, 51
oral inflammation, 52
pathogenesis see periodontal disease, pathogenesis
periodontis see periodontis
prescription and medications, 49
research, 49
risk factors, 48
role of hygienists, 55
scaling procedures, 58
serum CRP, 52
soft and hard structures, 48
treatment pockets, 58–9
ultrasonic scalers (USSs), 58
periodontis
advanced periodontal disease, 57
borderline periodontal disease, 56–7
eyearly periodontal disease, 57
features, 57
moderate periodontal disease, 57
periodontal pockets, 56
systemic conditions, 58
Piccaso laser, 39–41
Piccaso Lite laser, 41–2
PMNs see polymorphonuclear leukocytes (PMNs)
polymorphonuclear leukocytes (PMNs), 50
postoperative instructions, lasers
aphthous ulcers, 94
applications, soft-tissue diode laser, 94
desensitization, 94
herpetic lesions, 94
illustration, 92, 93
traditional periodontal therapy, 92
treatments, 94
power and cycles, lasers
aiming beam, well-cleaved fiber, 22, 23
beam divergence, 22
contact and noncontact modes, 22
duty and average, 21–2
fluence, joules/cm², 22
poorly cleaved fiber, 22, 23
power density measures, 22
properly cleaved fiber, 22

Revolution Laser Loupe
with insert, telescopes down, 12, 15
with insert, telescopes up, 12, 15

safety, lasers
classifications, 12
eye injuries see eye injuries
eyewear, 12, 14
infection control, 17–18
laser safety officers (LSOs)
  responsibility, 11, 13
mechanisms, 18
medicine/manufacturers, 12
Radon Laser Loupe, 12, 15
revolution laser loupe, 12, 14–15
titanium prismatic laser loupe, 12, 16
warning signs, 12, 13
scaling and root planning (SRP), 69–71, 75
Soft Lase 3 laser, 34–5
SPT see supportive periodontal therapy (SPT)
SRP see scaling and root planning (SRP)
standard proficiency clinical simulation exam checklist, 219, 220–222
styles of communication
  and excellent vision, patients, 103
  extraverts, 101
  feelers, 102
  introverts, 101
  intuitors, 102
  judgers, 102–3
  perceivers, 103
  sensors, 101–2
  thinkers, 102
supportive periodontal therapy (SPT), 92
tissue effects, lasers
  heat changes, 24–5
  thermal effects, 24
types, 24
Titanium Prismatic Laser Loupe, 12, 16

UIT see uninitiated tip (UIT)
UL tooth sensitivity
  FM series before laser treatment, 190, 192
  home care, 190
  oral hygiene instruction (OHI) recommendation, 190
  recare interval, 190
  three-month SPT, 190, 191
ultrasonic scalers (USSs), 58, 76
  uninitiated tip (UIT), 81, 87
USSs see ultrasonic scalers (USSs)
wound healing, 72

xerostomia
  bitewings after laser treatment, 177, 179
  case description, 176
  FM series before laser treatment, 177, 180
  home care, 176
  oral hygiene instruction (OHI) recommendation, 176
  recare interval, 176
  1064XLASE laser, 43–4, 44

YAG see yttrium aluminum garnet (YAG)
YLF see yttrium lithium fluoride (YLF)
yttrium aluminum garnet (YAG), 19
yttrium lithium fluoride (YLF), 19

Zila
  NV Microlaser™, 35–6
  NV Ortho, 36–7
  Soft Lase 3, 34–5