A. actinomycetemcomitans, 23–24
Abbreviated trapezoidal flaps, 213
Abdominal visceral obesity, 4–5
Absorbable collagen sponge (ACS), 56.
See also rhBMP-2/ACS
Abutment, 107
  custom, 253f, 255f
  implant connection to, 256
  prefabricated, 254
  screw, 255–56, 255f
  wax patterns for custom, 254f
  zirconia, 73f
Acid-labile subunit (ALS), 55
ACS. See Absorbable collagen sponge
Acteon Group, 147
Adipokines, 4
Adiponectin, 4
Advanced glycation end products, 13
Aesthetic zone, 249–51
Alcohol consumption, 7–8
Allograft bone, 175f, 198f, 216
Alphalinolenic acid, 31
ALS. See Acid-labile subunit
Alveolar antral artery, 145, 146f
Alveolar artery, posterior superior, 145, 146f
Alveolar ridge
  augmentation using rhBMP-2/ACS, 58, 58f, 59f, 60f, 61f, 62f, 63f, 64f
  flapless access to, 213
  Angiogenic factors, 51
  Angiopoietins, 51
  Angulation
    within alveolar bone, 109f
    guide, 250f
  problem, 71, 73f
  Anterior teeth, protrusive loads on, 75
  Antioxidants, 5–6
  Arthritis. See also Rheumatoid arthritis
    chronic inflammation and, 27, 29–30
    pathogenesis, 27–28
  Arteritis and, 28
  Arthrois, 3
  Astra internal style, 81f
  Astigmatic internal style, 81f
  Axial CT
    information comparison, 90f
    raw compared to reformatted, 92f
    raw CT, 91f
    reconstructed three-dimensional, 94f
    serial reformatted, 92f, 100f
  Axial slice
    information comparison, 90f
    raw compared to reformatted, 92f
    raw CT, 91f
    reconstructed three-dimensional, 94f
  Balanced articulation, 258f
  Balloon, 157f
    partial or full, 145–47
    sinus elevation, 156, 157f, 158
  Bard-Parker Rib-Back carbon steel
    surgical blade (#15), 165, 166f
  Barrier membranes, 181
  Becker, W., 37
  Benign paroxysmal positional vertigo (BPPV), 174, 176
  Berengo, M., 128
  Biomechanics
    occlusion and, 256–57
    stabilization, 107
  Bisphosphonates, 18, 32
  Bite collapse
    with physiologic adaption, 77f
    posterior, 75
  Bitewing radiograph, 206
  Bleeding, 146
  Blending marginal bone, 42, 45f
  Block graft
    Autogenous, 179–90
    dimensions, 185f
    fixation with screws, 187f
    mandibular ramus, 180
    recipient site, 185, 185f, 186f, 188
  BMI. See Body mass index
  BMP. See Bone morphogenetic proteins
  Body composition, 4
  Body mass index (BMI), 3–4
  Body weight, 3–5
  Bone, 107. See also Guided bone regeneration; specific bones
    allograft, 175f, 198f
    augmentation, 176
    on buccal, 82f
    demineralized freeze-dried, allograft, 216
    density viewed microscopically, 80f
    forming cells (osteoblasts), 3
    implant contact with, 75, 76f
    implant integrated with, 79f
    mass, 31
    particulate, 183, 183f, 187f
    piezocision effect on, 196
    preservation solutions, 127–44
    remodeling, 52t
    splitting chisels, 160f
    tissue transplants, 179
    transfer force to, 91f
  Bone formation
    growth factors and, 52t
    socket-healing rates and, 107

Index
Bone graft, 153f, 157f, 170f, 172f, 197f. See also Block graft; Chin graft; Ramus graft

fixation, 188f
growth factor-enhanced, 51–64
intercortical, 163f
need for, 200f
postoperative instructions, 190
Bone harvest, 128. See also Chin bone harvesting; Ramus bone harvesting
tool, 183
Bone loss, 78f, 132
falling implant and, 81f
after osseous surgery, 40–41
peri-implantory postsurgical crestal, 132, 135
Bone metabolism
growth factors involved in, 51–52
markers, 29
Bone morphogenetic proteins (BMP), 51, 52, 52t, 53–54
oral maxillofacial procedures and, 56
Bony block movement, 195
Boston University Henry M. Goldman School of Dental Medicine, 37
BPPV. See Benign paroxysmal positional vertigo
Branemark, P. I., 69, 82, 107, 254
Branemark external hex platform, 78, 81f
Bridge
bicuspoid fractured beneath four-unit, 76f
root extraction under, 135, 142f, 143f, 144f
Buccal, 76f
bone on, 82f
cortex, 159
cortex displaced, 171f
tooth tissue relationships notch on, 76f
wall of maxillary sinus, 100f
washboard effect to palpation of, 107
Buccal plate, 171f
fractured, 174, 174f, 175f
healed, 176f
weakening, 173f

CAD. See Computer-assisted design
CAD/CAM, 208
modeling, 210
surgical guide, 209
CADImplant, 210
Calcium, 6
Caldwell, G. W., 145
Caldwell-Luc procedure, 145
Calorie-restriction diet, 4
CAM. See Computer-assisted manufacturing

Cancer, 3
Carboxyterminal telopeptide of type 1 collagen (CTX1), 30
Cardiovascular disease, 3
diabetes and, 11
infection and, 19–20, 23
lipoprotein parameters and, 24
pathogenesis, 19–20
patient management and, 20–21
periodontitis and, 19–25
Cast
definitive, 252f, 253f, 254f
for splinted crown, 255f
Catechin, 7
CBCT. See Cone-beam computer tomography
Cemental-enamel junctions (CEJ), 40
Cement-retained restorations, 254–56
Chronic inflammation
arthritis and, 27, 29–30
cardiovascular disease and, 19
conditions, 21–23
coronary heart disease and, 22–23
diabetes and, 15
Chronic microbial infection, 19
Class I malocclusion, 196f
Clinical failure, 236
Coearse diamond rotary instrument, 251f
Cold burnishing of gutta-percha, 233
Collagen membrane, five-month, 121f
Compromised therapy, 42
Compromised tooth, 242

Computer-assisted design (CAD), 205.
See also CAD/CAM
Computer-assisted implant dentistry, 205–24
accuracy of, 210–12
case report, 214–16, 215f, 216f, 217f, 218f, 219f, 220f, 221f, 222f, 223f, 224f
concerns and disadvantages, 212–13
future direction of, 214
systems, 211f

Computer-assisted manufacturing (CAM), 205. See also CAD/CAM
Computer automated tomograph (CAT), 85
original, 86f
panoramic reformats, 104f
reformats, 105f
scan, 85f
scan vs. tomography, 84f
Computer-driven drilling, 209–10
Computerized axial tomography, 206
Computerized reconstruction, geometry of, 89f
Computer tomography (CT), 56. See also Axial CT; Cone-beam computer tomography;
Preoperative CT scan
advantages of, 206–7
data collection, 210
high-dose radiation concerns, 207
raw, axial slice, 91f
scan, 85, 213
scanning appliances, 207–8
soft tissue and, 85
three-dimensional scan, 59f
Cone-beam computer tomography (CBCT), 207, 213
cuspid area, 86f
doctor maxillary right second premolar, 73f
scanners, 93
Coronal restoration, 241
Coronary heart disease, 22–23
Cortical bone location
in mandible, 95, 97
in maxilla, 95
Cortical plate screws, 171f
Corticision technique, 195
Corticotomy, piezoelectric, 197f
Crack formation, 233
Cranberry, 7
Crater
classified, 38
interdental removal of, 42, 44f
C-reactive protein, 21
Crestal incision, 149, 150f, 163f, 165f, 169f
Crestal osteotomy, 172f
Cross-sectional images. See Oblique images
Crown, 249
abutment-implant-bone-, complex, 107
avulse restoration, 81f
cemented, 73f
definitive, 250–51, 251f, 252f, 253f, 255f
multiple implant-supported, 251, 254, 254f, 255f
occlusal interference on, 257f
pattern for, 253f
placement, 174f
root-, ratio, 228–29
single implant-supported, 249–51
splinted, 255f
CT. See Computer tomography
CTX1. See Carboxyterminal telopeptide of type 1 collagen
Cunningham, W., 232–33
Cusp
angle to alveolar bone, 115f
CBCT, 86f
demineralization, 112f, 113f
endodontic access on right, 104f
Cusps pointed, 257, 257f
Cylindrical implants, 176
Cytokine, 3, 4, 5. See also specific cytokines
inflammation markers and, 21
inflammatory, 21–22
proinflammatory, 51–52
Daughaday, W. H., 55
Deep probing pockets, 4, 7
Definitive cast, 252f, 253f, 254f
Definitive crown, 250–51, 251f, 252f, 253f
Definitive impression, 252f
Definitive therapy, 42
Deformation, 79f, 80f
Deminerlized freeze-dried bone allograft (DFDBA), 216
Dentures, 254
bar-retained implant supported, 260f
mandibular, 69
modified prosthetic design, 71f
retention by maxillary implant, 261f
screw-retained fixed complete, 70f, 257–58
like templates, 217f
u-shaped with clips, 261f
wax trial, 258, 259f, 260f
DFDBA. See Deminerlized freeze-dried bone allograft
Diabetes, 3
clinical parameters, 14
emergencies, 12
patient management, 11–12
periodontitis and, 11–15
surgery and, 12
uncontrolled, 11
Diabetes mellitus type 1, 11
periodontal treatment and, 14–15
Diabetes mellitus type 2, 11
periodontal treatment and, 12–14
Diabetic microangiopathy, 11
DICOM. See Digital Imaging and Communication in Medicine
Diet, 4, 6
Digital Imaging and Communication in Medicine (DICOM), 208
Diseased teeth, 236
Disease-modifying antirheumatic drugs (DMARDs), 27
Docosaheaxenoic acid, 31
Double parabola, 43, 48f
Dynamic surgical guides, 210
Dyslipidemia, 20
Edentulous mandible treatment, 69
Edentulous maxillae treatment, 69
Edentulous patients, 24
implant treatment for partially, 69, 71
partially, 251, 254, 254f, 255f
Edentulous ridge expansion (ERE), 159–66
mandible, 171f
Edentulous sites, biomechanical stabilization in, 107
Eicosapentaenoic acid, 31
Elasticity calculation models, 79f
Elastin, 112f, 113f
ECT, 86f
angle to alveolar bone, 115f
Edentulous maxilla treatment, 69
Edentulous mandible treatment, 69
Edentulous patients, 24
implant treatment for partially, 69, 71
partially, 251, 254, 254f, 255f
Edentulous ridge expansion (ERE), 159–66
mandible, 171f
Edentulous sites, biomechanical stabilization in, 107
Eicosapentaenoic acid, 31
Elasticity calculation models, 79f
Elevated antibody titer, 23
Elasticity, 51
Endodontic abscess, 104f
Endodontic literature
considerations concerning, 228–30
indications, 227–28, 229f
instruments, 231–32
objectives, 227
outcome assessment, 236, 239
success versus survival, 240
summary of selected, 237–38t
surgery - outcomes assessment, 239
Endodontic microsurgery, 227–39
anatomical considerations in, 229
considerations concerning, 228–30
indications, 227–28, 229f
instrument, 231–32
objectives, 227
outcome assessment, 236, 239
surgical procedure, 230, 231f
traditional versus modern techniques in, 230–31, 232t
ultrasound used in, 232–33
Endodontic treatment, 242–43
implant treatment compared to, 228f, 240, 241f, 242–43
Endosseous implants, 75
protocol for placement and loading, 107
Endodontal dysfunction, 20
pathogenesis, 24–25
End-stage tooth, 242
ERE. See Edentulous ridge expansion
Erythrocyte sedimentation rate, 21
Extension crest device, for ridge splitting, 161
FGF. See Fibroblast growth factor
Fibrinogen, 21
Fibroblast growth factor (FGF), 51, 52f, 55
Fish oil, 5, 31
Fissure bur, 183
5s rule, 182–83
Fixed implant-supported restoration, 256–57
Fixed partial dentures (FPD), 254
Flap
abbreviated trapezoidal, 213
elevation and piezosurgery, 195
full-thickness mucoperiosteal, 162
mucoperiosteal, 230, 231f
osteoperiosteal, 162
partial-thickness, 39f, 40f, 162
passive adaptation of, 187f
u-shaped peninsula, 213
Flap surgery, 213–14
for implant placement, 250f
indications, 213–14
Flap surgery, 48
flapless compared to, 213–14
ridge expansion technique and, 162
FPD. See Fixed partial dentures
Fractured tooth, 118f
Free radicals, 5–6
Friedman, N., 37
Frost, H. M., 195
Full-thickness mucoperiosteal flap, 162
Fusobacterium-stimulated polymorphonucleocytes, 6
Garlic, 7
GBR. See Guided bone regeneration
Generalized aggressive periodontitis, 215f
Gingival crevicular fluid, 6
Gingival recession, 142f, 197f
piezosurgery, and, 199f
Gingivitis, 22
Glucose monitoring, 12
Glycated hemoglobin, 13–14
Glycemic control, 11
Glycosylated hemoglobin (HbA1c), 11
Gold custom abutment, 253f
Graft. See also Bone graft
biomaterial, 139f
connective tissue, 198f
hard tissue, 195
onlay, 179
protection, 187f
soft tissue, 189f, 195
Gram-negative bacteria, 20
Green tea, 7
Growth factors, 51
- biology behind action, 51
- bone formation and remodeling and, 52f
- bone metabolism and, 51–52
- carriers, 55–56
- cellular responses induced by, 51
- clinical application, 55–64
- oral maxillofacial procedures and, 56
- Guided bone regeneration (GBR), 173f, 175f, 212
- Guilford, F. H., 195
- Gutta-percha
- cold burnishing of, 233
- markers, 217f
- HbA1c. See Glycosylated hemoglobin
- Head anatomy, of reconstruction force to axis of implant and transfer force to bone, 91f
- Head scanners, modern, 87f
- Hepatocyte growth factor (HGF), 54
- HGF. See Hepatocyte growth factor
- Histology, near apex of tooth, 77f
- HLA class II genes, 27–28
- HLA class I genes, 27–28
- Histology, near apex of tooth, 77f
- Hounsfield numbers
- displayed on flat screen, 88f
- sequence for calculation of, 87f
- Human error, 211–12
- Hybrid prosthesis, 69
- Hydroxyl radicals, 5
- Hypertension, 4, 5
- Hypertension, 4, 5
- Hypertiglycemia, 4
- IGF. See Insulin-like growth factor
- IGS. See Intraoperative navigation system
- IL-1. See Interleukin-1
- IL-6. See Interleukin-6
- Image acquisition, 211
- Image-guided bur tracking-navigation systems, 211
- Image-guided surgery
- accuracy studies, 212
- human error, 211–12
- Image-to-physical transformation, 211
- Imaging methods, 206–8. See also specific methods
- Immune response, 27
- Impacted tooth, 127f, 132, 136f
- extraction of, 133f, 134f
- Impaired glucose tolerance, 13
- Implant, 156f, 170f, 173f, 249
- abutment-bone-, relationship, 76f
- abutment connection to, 256
- analog on definitive impression, 252f
- avulse restoration, 81f
- bone attachment, 75, 76f
- bone integrated with, 79f
- bone structure contact, 75
- crown-abutment-bone-, complex, 107
- crown supported by multiple, 251, 254, 254f, 255f
- crown supported by single, 249–51
- cylindrical, 176
- denture retention by maxillary, 261f
- dentures supported by, 260f
- endosseous, 75, 107
- falling and bone loss, 81f
- fixed, 256–57
- fixed, supported restoration, 264–57
- head anatomy of reconstruction force to axis of, 91f
- installed, 153f, 167f
- integrated forces compared to lateral forces, 75, 78
- materials and deformation, 79f
- osseointegrated, 75, 256
- osteo-integrated, 138f, 139f
- overdentures supported by, 72f, 256–57, 259, 261f
- piezoelectric method to remove, 135
- placed in narrow ridge to replace #18–23, 77f
- radiographic image after insertion, 189f
- removal, 121f, 135, 139f
- at right angle to occlusal plane, 108f
- after sinus lift, 76f
- support, 75
- tapered, 115
- Implant dentistry, 249. See also Computer-assisted implant dentistry
- history, 69
- long-term studies on, 241
- prosthetic-driven, 205
- treatment planning for, 71
- Implant literature
- case selection, 240
- endodontic literature compared to, 51
- virtual, 208, 218f, 219f
- Implant placement, 76f–78f, 205, 251f, 259
- in alveolar housing, 79, 82–83
- anatomy and occlusion relations to, 75–106
- angulation problems, 71, 73f
- direction indicator for, 166f
- flapless surgery for, 250f
- mandibular, 222f, 223f
- maxilla, 220f, 221f
- postoperative radiograph showing, 170f
- prosthetically driven, 69–73
- radiograph of, 251f
- Implant planning software, 213
- virtual, 208, 218f, 219f
- Implant risk assessment
- case study 1, 116–17, 116f, 117f
- case study 2, 117f, 118f, 119
- case study 3, 119–20, 120f, 121f, 122f, 123f, 124f, 125, 125f
- Implant treatment
- for edentulous maxillae, 69
- endodontic compared to, 228f, 240, 241f, 243–43
- for partially edentulous patients, 69, 71
- Incisal canals, extensive, 97
- Incisal fossa, 110, 112f
- lateral view, 113f
- Incision. See also Interproximal incisions
- crestal, 149, 150f, 163f, 165f, 169f
- line opening, 147
- piezosurgery chin graft, 182f
- sulcular, 181f
- vestibular design for, 181, 181f
- Incisor area
- intraoral view of mandibula, 58f
- intraoral view of maxilla, 58f
- lateral, 107, 110
- Incisors-sockets, 109f
- Infection, 147
- bacterial detection in vascular lesions and, 23
- cardiovascular diseases and, 19–20, 23
- microbial, 19, 20
- Infraorbital artery, 145, 146f
- Insulin-like growth factor (IGF), 51, 52, 52t, 55
- Insulin receptor substrate-1 (IRS-1), 55
- Insulin resistance, 3, 4
- Interdental crater removal, 42, 44f
- Interleukin-1 (IL-1), 51–52
- Interleukin-6, 51–52
- Interleukin-8, 5
- Internal osteotome-facilitated approach, 147t
- Interproximal incisions, 196, 196f
- in Maxilla, 197f
- IntraLift, 147–55, 150f, 154f. See also specific tools
- advantages and results, 151, 154–55
- blunt probe, 151f
- graduated depth probes, 149f
- technique, 148–51
- tips kit, 148f
- Intraoperative navigation system (IGS), 210
- Iqbal, M. K., 242
- IRS-1. See Insulin receptor substrate-1
Jaw
  osteonecrosis of, 17–18
  osteoporosis, 32
Juvenile idiopathic arthritis, 31
Keratinized tissue, 212–13
Kim, S., 242
Kramer, Gerald M., 48
Kronfeld R., 37
Kurrek, A., 148
Lateral incisor site, 107, 110
Lateral window approach, 145–46, 146t
  complication possibilities, 146–47
Lazarra, R., 107
Leukocytes, 21
Ligament, 76f
  supported teeth, 75
  vascular net of space, 75
Limiting canals, 97
Lindhe, J., 37
Lingualized occlusion, 257, 259f
Lipopolysaccharide, 23
Lipoprotein parameters, 24
Loaf slicer, 89f
Long-term studies, 241
Luc, H., 145
Lycopene, 5–6
Macrovascular pathology, 11
Magnification
  power of, 235–36
  recommended, for different procedures, 235t
Major histocompatibility complex, 27–28
Malar process, 112f
Malnutrition, 6
Mandible
  anterior, 197f
  axial CT original, parallel to base of, 94f
  axial CT reformats when using base of, 95f
  cortical bone location in, 95, 97
  edentulous, 69
  ERE, 171f
  lower posterior, 170f
  membrane exposure in, 174
  one-stage ridge splitting of, 169, 173–74
  three-dimensional view of lower, 200f
  two-stage ridge splitting of, 169
  virtual implant planning in, 218f
Mandibula
  incisors, sockets, 109f
  intraoral view of incisor area, 58f
  resorption, 101f
  three-dimensional CT scan of, 59f
  mandibular
    canal, 99f
    chin grafts and, 180
    dentures, 69
    framework, 260f
    implant placement, 222f, 223f
    molars, 40
      first, 111f
      socket, 109f
      osteoporosis, 31
      overdentures, 260f
      implant supported, 261f
      ramus block graft, 180
  mandibular bicuspids
    alveolar housing projection midline, 112f
    first, 111f
    sockets, 109f
  MAPK. See Mitogen activated protein kinase
  MAP system tips, 232f
  Marginal bone, 42, 45f
  Martin, H., 232–33
  Matrix Metalloproteinases (MMP), 30, 51
Maxilla
  cortical bone location in, 95
  edentulous, 69
  implant placement in, 220f, 221f
  interproximal incisions completed in, 197f
  intraoral view of incisor area, 58f
  overdenture, 72f
  physical models of, 209f
  three-dimensional CT scan of, 59f
  virtual implant planning in, 219f
  maxillary
    bar, 261f
    implant for denture retention, 261f
    overdentures, 259
    implant-supported, bar-retained, 72f
    posterior, 99f
    reconstruction and chin grafts, 180
    right second premolar CBCT scan, 73f
  maxillary bicuspid
    alveolar housing projection midline, 112f
    first, 111f
    sockets, 109f
Maxillary molars
  extraction sites, 114f
  first, 111f
  sockets, 109f
  maxillary sinus, 97, 99f
  bleeding, 146
  buccal wall of, 100f
  cyst, 103f
  extension, 113f
  floor augmentation using rhBMP-2/ACS, 56–57, 57f
  incisive foramen variations, 102f
  leakage seen in CAT scan, 104f
  minimally invasive surgery, 145–58
  Underwood’s septa in, 100f
  Mental foramen, 99f
  Mesenchymal stem cells, 53
  Metabolic disorder, 11
  Metabolic syndrome, 4–5, 6
  Metal plate, 175f
  MIAMBE. See Minimally invasive antral membrane balloon elevation
  Microbial antigens, cross-reactivity between self-antigens and, 20
  Microbial dental plaque, 19
  Microbial infection, 20
  Microbial pathogenesis, of rheumatoid arthritis, 30
  Microvascular circulation, 29
  Microvascular pathology, 11
  Mineral trioxide aggregate (MTA), 233, 234–35
  gray and white, 235f
  Minimally invasive antral membrane balloon elevation (MIAMBE), 156
  Minimally invasive maxillary sinus surgery, 145–58
  Mitogen activated protein kinase (MAPK), 55
  MMP. See Matrix Metalloproteinases
  Moghaddas, H., 41
  Molecular mimicry, 20
  MTA. See Mineral trioxide aggregate
  Mucoperiosteal flap, 230, 231f
  Mylohyoid attachment, 100f
Navigation systems, 210
  Image-guided bur tracking, 211
Negative architecture, 42
Neurosensory disturbances, 189
Nitrogen-containing bisphosphonates, 18
Nondiagnostic therapy, 42
Non-nitrogen-containing bisphosphonates, 18
Nonsmokers, 3
Normal architecture, 42
Noxious stimulus, 185
Nutrition, 5–8
Nutritional status, 6
Nyman, S., 37, 43
Obesity, 3–5
Oblique images, 101f
  occlusal plane and, 97f, 98f
  posterior, 96f
  reference slice, 94f
  reformatted, 85f, 91–95, 102f, 113f
Oblique slice, 90f
  cleared, 93f
  reformatted, 93f
Obstructed tooth extraction, 140f, 141f
Occlusal interference on crown, 257f
loads, 79f
fracture related to, 81f
view, 77f
Occlusal plane, 75
implant at right angle to, 108f
reference plane for axials parallel to, 96f
reference plane used for reformat as parallel to, 97f
reformats with plane reference parallel to, 98f
transfer of forces from, 83

Occlusion
biomechanics and, 256–57
implant placement and, 75–106
lingualized, 257, 259f

Ochsenbein, C., 38, 40
O'Connor, T. W., 40

Olive loaf
loaf slicer with, 89f
reformatting, 90f

Olsen, C., 41

Omega-3
fatty acids, 31
Polyunsaturated Fatty Acids, 5

Oncology treatment, for osteonecrosis cases, 17–18
One-stage ridge splitting, 159, 162, 165–66, 172f
of mandible, 169, 173–74
preoperative CT scan prior to, 164f, 168f, 169f

Onion, 7

Onlay grafting, 179

Oral maxillofacial procedures, growth factor BMP-2 use in, 56
Orban, B., 37
Orstavik, D., 236
Orthodontic appliances, 196, 196f
Orthodontic tooth movement. See Periodontally accelerated orthodontic tooth movement
Orthodontist, 199–200
OrthoMak treatment, 229
Oscillating saws, for ridge splitting, 161, 161f

Osseointegrated implant, 75, 256
Osseous defects, 46
techniques to eliminate, 38–40

Osseous surgery, 43f, 44f, 45f, 46f, 47f, 48f
bone loss after, 40–41
clinical steps for, 42
comparisons table, 41f
completion of, 46
limitations, 42–43, 46
long-term healing after, 40–41
piezoelectric instruments used for, 41f
postsurgical management, 46
regenerative, 51–64
resective, 37, 39f, 40f
sequence, 42

Ostectomy, 38
Osteoblasts, 3
Osteo-integrated implant, 138f, 139f
OsteoMed kit, 185
Osteonecrosis of jaw, 17–18
Osteoperiosteal flap, 162
Osteoplasty, 37–38

Osteoporosis
jaw, 32
periodontitis and, 31–32
treatment, 17–18

Osteotomy, 132, 135
crestal, 172f
with diameter 2.8–3 mm, 152f

Ovulation, 7

Overdentures
implant-supported, 256–57, 259, 261f
mandibular, 261f
maxillary, 259
implant-supported, bar-retained, 72f

Oxidative stress, 5

P. gingivalis, 5
elevated antibody titer and, 23
PAL. See Periapical index
Palatal, 76f
Panoramic radiographs, 206
Panoramic reformat, 85f, 86, 91, 101f, 104f
Panoramic slice
cleared, 93f
reformatted, 86, 91
Panorex film, 83, 83f, 104f
PAOO. See Periodontally accelerated osteogenic orthodontics
Paracrine, 51
Paroxysmal positional vertigo, 174, 176
Partial-thickness flap, 39f, 40f, 162
Pathogenesis
arthritis, 27–28
cardiovascular disease, 19–20
endothelial dysfunction, 24–25
of rheumatoid arthritis, microbial, 30
Pathophysiology, 29

PDGF. See Platelet-derived growth factor
PDI. See Prosthetic-driven implantology
Periapical index (PAI), 236
Periapical radiograph, 206
conventional compared to digital, 83, 83f

Periodontally accelerated orthodontic tooth movement, 195–201
Periodontally accelerated osteogenic orthodontics (PAOO), 195
Periodontal treatment, 15
diabetes and, 12
diabetes mellitus type 1 and, 14–15
diabetes mellitus type 2 and, 12–14
rheumatoid arthritis and, 30–31

Peroxy radicals, 5
Persistent periapical lesion, 229f
Physical activity, 4
Physical models, 209
of maxilla, 209f
Physiologic adaption, 75
bite collapse with, 77f
Piezocision, 195–201, 197f
after, 200f
advantages, 198–99
complete, 198f
effect on bone, 196
equipment, 196
gingival recession and, 199f
indications for use of, 196
interproximal incisions, 196, 196f, 197f
possible complications, 198
postoperative care, 198
prior to, 200f
surgical sheet, 199f
technique, 196–98

Piezoelectric
corticotomy, 197f
method to remove implant, 135

Piezoelectric tips, 127–28, 128f, 129f, 130f, 131f, 132f

Piezoelectric instruments
access and, 135, 144
osseous surgery use of, 41f

Piezoelectric surgery (PS), 179

Piezosurgery
atraumatic extractions, 127–44
chin graft incision with, 182f
flap elevation and, 195
implant removal and, 135
indications, 128, 132
osteotomy and, 132, 135
postoperative treatment and healing period, 174, 176
for ridge expansion, 166, 168–69, 169f, 170f, 171f, 172f, 173–74, 173f, 176
for ridge splitting, 161, 161f
standard technique compared with, 127–28, 129f, 130f, 131f, 132f

Piezotome, 197f
BS1 tip, 196

Pikos Bur Kit, 188f

Platelet-driven activation, 20, 25

Platelet-derived growth factor (PDGF), 51, 52, 52t, 54–56
Septae, 146–47
Serial tomography, 84f
Serum amyloid A protein, 21
Serum C-reactive protein, 5
SHC. See Src homology and collagen protein
Sinus. See also Maxillary sinus
cavity, 157f
filing surgery, 154–55
Sinus lift. See also IntraLift
balloon sinus elevation, 156, 157f, 158
implant after, 76f
internal, 220f, 221f
partial or full balloon, 145–47
with rhBMP-2, 217f
Sinus pathologies
internal approach to treating, 147, 147t
lateral approach to treatment of, 145–47, 146t
Sjögren syndrome, 31
Slice increment, 84
Slice thickness, 89f
Sockets
extraction, 118f
healing rates, 107
incisors, 109f
mandibular bicuspids/molars, 109f
mandibular incisors-, 109f
maxillary molars, 109f
site anatomy, 107–16, 110f
Soft tissue, 250f
contours, 72f, 249–50, 251f, 252f
CT scan and, 85
dimensions, 212–13
grafting, 189f, 195
regeneration, 121f, 122f
Src homology and collagen protein
(SHC), 55
Static surgical guide, 208–10
Stereolithography, 209
Stroke, 22
Submandibular gland concavity, 100f
Sulcular incision, 181f
Superoxide anions, 5
Superoxide dismutases, 6
Surface contours, limiting, 97
Surgical operating microscope, 232f, 235–36, 240
Surgical technique, considerations
affecting, 38
Sutures, 153f, 157f, 167f
Systemic acceleratory phenomenon
(SAP), 185
Systemic inflammation, 4, 5, 14
Tardieu Scannoguides, 208
TCP. See Tri-calcium phosphate
Template

clear plastic vacuum-formed, 254f
denture-like, 217f
radiological, 210
TGF-β. See Transforming growth factor
Three-dimensional imaging, 206
Three-dimensional modeling, 210
Tissue inhibitor of metalloproteinases
Tissue. See also Soft tissue
bone, 179
free radicals induced, 5
grafting, 198f
grafting hard, 195
notch on buccal, 76f
punch, 213
turnover, 201
Tissue inhibitor of metalloproteinases
(TIMP), 30
Titanium mesh, 60f, 61f, 62f, 63f
removal of, 64f
TKW. See Troedhan, Kurrek & Wainwright
TKW1 tip, 147, 148, 148f, 149, 150f
TKW2 tip, 147, 148f, 149, 151f, 152f
TKW3 tip, 147, 148f, 149, 152f
TKW4 tip, 147, 148f, 149
TKW5 tip, 147, 148f, 149, 152f
hydrodynamic action, 153f
TNF-α. See Tumor necrosis factor-α
Tooth. See also Periodontally accelerated orthodontic tooth movement
composite of mean measures of, 109f
compromised, 242
dimension, mean measures of, 108f
end-stage, 242
fractured, 118f
histology near apex of, 77f
impacted, 127f, 132, 136f
extraction of, 133f, 134f
ligament of implant-bone attachment, 75, 76f
natural, support system, 75
obstructed, extraction, 140f, 141f
position and angulation within alveolar bone, 109f
sectioning of, 135, 138f, 139f, 140f, 141f, 142f, 143f, 144, 144f
tissue relationships notch on buccal, 76f
Torque wrench, for abutment screw, 255–56, 255f
Transforming growth factor (TGF-β), 51, 52, 52t
superfamily, 51, 52–53
Treatment planning, 249
for implant dentistry, 71
root canal, 242, 243
Tri-calcium phosphate (TCP), 121f, 122f
Troedhan, A., 148
Troedhan, Kurrek & Wainwright (TKW), 147
Tumor necrosis factor-α (TNF-α), 3, 5, 51–52
Tunnel dissections, 213
Tunneling, 197f
Two-stage ridge splitting, 159, 162
of mandible, 169
pre-operative CT scan prior to, 163f
Ultrasonics
endodontics use of, 232–33
tips, 127, 232f, 233f
Uncovering procedure, 223f
Upper-body obesity, 4
Urist, Marshall R., 53
U-shaped peninsula flaps, 213
Vascular endothelial growth factor
(VEGF), 51
Vascular net, of ligament space, 75
Vascular supply, 78f
VEGF. See Vascular endothelial growth factor
Vercellotti, T., 128, 195
Vertical grooving, 42, 43f
Vestibular design for incision, 181, 181f
Visceral abdominal adiposity, 4
Vitamin B, 7
Vitamin C, 7
Vitamin D, 6, 32
Wainwright, M. A., 148
Waist circumference, 4
Waist-to-hip ratio, 4
Washboard effect, 107
Whole grain, 6
Wilcko, T., 195
Wilcko, W. M., 195
Wilderman, M., 41
Wozney, J. M., 53
Zarb, G. A., 69, 70f, 254
Zemsky, J. L., 37
Zentler, A., 37
Zirconia abutment, 73f