

Index

Aarskog syndrome 114, 120 abfraction 60 abrasion of teeth 60 see also enamel demineralization and erosion acetylsalicylic acid 48 achondroplasia 42, 105-6, 114, 148-9 acromegaly 43-4, 183, 184 actinomycosis 244, 248-9 activator appliance 220 acute necrotizing ulcerative gingivitis (ANUG) 244, 245 acute suppurative parotitis (ASP) 246-7 Addison's disease 50, 192 adenoid cystic carcinomas 327-30 adenoidectomies 201-3 adenoids 196-7 anomalies 197-201 investigations 222-7 removal 201-3 adhesives, biomimetic 375-6 adolescence 77 diet and food choices 89 adrenal disorders, general 192 adrenal insufficiency 183, 192 aerobic infections, affecting oral cavity 243-5 agenesis see dental agenesis airway imaging 198-9, 222 airway obstruction ENT referrals 197-201 impact on facial length 199-201 measurement and evaluation 198-9 otolaryngology 201-3 see also obstructive sleep apnea (OSA) alcohol use 6 see also fetal alcohol syndrome allergens 47, 373 allergic disorders 47 allografts 389, 403-18 see also alveolar bone grafts alopecia totalis 9, 11 alveolar bone grafts 162-3, 401-2 contraindications 415-16 future research needs 418 harvesting methods 406-8 post-surgery evaluations 411-12 surgical protocols 408-11 transmucal penetration and cell rejuvenation 412-15 use of stem cell technologies 401-18

alveolar bone modelling 169-70, 171, 394-6 with stem cell technologies 401-18 alveolar cleft closures 162-3 alveolar drift 169-70 amelo-onchohypohydrotic dysplasia 113 amelogenesis imperfecta 60-2, 109, 112, American Board of Clinical Geneticists (ABMG) 110-11 hemolytic 47 sickle cell 47-8 angiomas, facial 39 Angle, Edward Hartley 2, 380 ankylosis of teeth 303-5 anorexia nervosa 60, 89 impact on orthodontic treatment 88 antidepressants 87 antipsychotics 87 antiviral agents 47 ANUG see acute necrotizing ulcerative gingivitis (ANUG) anxieties over treatment, underlying causes Apert syndrome 42, 113-14, 143-8 apexification techniques 293-5 apnea 214 see also obstructive sleep apnea appearance concerns 69-70 appliances (general considerations) cariogenic problems 286 pulpal reactions 286-8 see also biomedical engineering; individual named appliances; materials science application service provider (ASP) solutions appointment scheduling, IT software 16 archwires coatings 371–2 mechanical properties 369-72 nonmetallic 368-9 surface properties 366-8 archwire-bracket friction studies 366-8 asthma 46 attention deficit hyperactivity disorder (ADHD) 77 attractiveness 72-3 ethno-cultural differences 75-6

physical basis 73 quantitative analysis 74-5 audiological tests 206-7 autoimmune diseases 6-7, 39-40, 49, 114, 254-5 autoimmune polyendocrinopathy 114 autotransplantation 300-3 azotemia 47 bacterial infections 241-8 management principles 397-8 within oral cavity 243-5, 397-400 basal cell carcinoma (nevoid) 42, 112, 113-14, 123 Binder syndrome see maxillonasal dysplasia bio-Oss 389 bioglass materials 389 biological status of patient 5-9 biomaterials 383-4 design requirements 383 see also tissue engineering biomedical engineering background and past research 366 - 73archwire-bracket friction 366-8 fabrication of nonmetallic archwires 368-9 force measurements 372 mechanical properties of archwires 369 - 72use of finite element analysis 372 - 3current studies and potential applications 373-7 biomimetic adhesives 375-6 brackets with force measurement centres 375 self-cleaning materials 376-7 self-healing materials 374-5 shape memory polymers 373-4 see also tissue engineering biomedical engineers 366 bisphosphonate treatment, jaw necrosis 174 blastomycosis 259 bleeding disorders 49, 50 bleeding index 398 Bloch-Sulzberger syndrome see

incontinentia pigmenti

blood transfusions 49





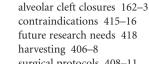


perceptual basis 73-4

 \bigoplus

body dysmorphia 79

bone grafts 389



harvesting 406-8 surgical protocols 408-11 post-surgery evaluations 411-12 transmucosal penetration (TMP)

412 - 18

using stem cell technologies 401-18 bone health, nutrient requirements 88 bone loss

prevention through infection control 397-400

see also root resorption bone marrow 381-3

bone metabolism

and orthodontic tooth movement

173 - 4regulation 7-9

bone modelling 168-70, 393-4

bone 'morphing' 394-7

bone morphogenetic proteins (BMPs) 377, 385-8

bone remodelling 170-5, 394-6 clinical implications 172-5

definitions 170

key stages 170-1

mechanic forces 175-7

bone strain 175-7

bone-anchored maxillary protraction

systems 161-2

bony lesions 52

borderline personality disorders 78 braces see brackets and banding

brackets and banding

ceramic 372-3

impact on oral hygiene 88

mechanical properties of archwires

369-72

nonmetallic archwires 368-9

self-ligating 367

surface coatings 371-2

surface properties 366-8

use of modelling analysis in design

with force measurement centres 375

brain abscess 261-2

breathing problems 197–200

Broadbent Bolton templates 345

'brown tumours' 47

bruxism 60

Buckley syndrome 113

bulimia nervosa 60, 89

burning mouth syndrome 45, 242

calcified deposits, pulpal tissue 287

calcitonin 184-5

calcium

and bone mass 88

deficiencies 43, 88, 173-4

homeostasis imbalances 6

calcium hydroxide 294

cAMP see cyclic adenosine monophoshate (cAMP)

cancer

associated conditions 120-1

childhood conditions 100

candida-associated lesions 256, 257-8

candidiasis 256, 257, 258

canine protected occlusion (CPO) 477

canine tooth, impaction 57

canker sore 242

cardiovascular disease 46

caries see dental caries

cariogenecity of foods 86-7

Carney complex 44

Carpenter syndrome 113

case documentation software 17 casein phosphopeptide 306

cellular signaling molecules 5

cementum, regeneration 388-9 centric occlusion 62, 63

centric shifts 62, 63

cephalometry 222

assessment of growth 105-7

online analysis 21

software comparisons 22

3D systems 21

cerebral palsy patients 490-2

cervical abrasion 60

cervical fracture 295-6

cervical spine fusion 62, 63

Chediak-Higashi syndrome 113, 117

cheese 87

cherubism 113, 117-18

chewing gum 87

sugar-free 306

child and adolescent development

importance of nutrition 86

childhood obesity 88-9

chondroectodermal dysplasia 113-14,

119

Class II malocclusions

congenital disorders 42

deficiency states and malnutrition 43

Class III malocclusions

causes and associated conditions 42, 53

prevalence 343

cleft lip and palate appliances, infants

157-62

clefts of lip and palate (CLP) 40

associated conditions 113-14, 127-8

etiology 153-4

healthcare burden 143

interdisciplinary team care 154-6

ENT disciplines 156, 209

genetics 155-6

nursing and social work 155

obstetrics 154-5

orthodontics 155

pediatrics 155

psychology 156

routine dental care 156

speech pathology 156

surgery 155

orthodontic management 156-65

birth to 7 years 157-62

from 8 to 15 years 162-4

from 16 to 20 years 164-5

prevalence 154

relapse risk and retention appliances

cleidocranial dysplasia 113-14, 118-19

clinical examination

basic procedures 38-9

dentition evaluations 53-60

occlusion and TMJ assessments 60-2, 332-5, 471

periodontal status 52-3

soft tissue anomalies 50-2

clinical geneticists 109-11

professional development 110-11

referrals 111-12

clinical genetics

inheritance 40 investigations and referrals 111-15

see also congenital orofacial deformities

coagulation disorders 49

Coffin-Lowry syndrome 113-14, 117 Cola drinks 88

collagen

synthesis 88

use in tissue engineering 383

color changes

dentition 58, 59-60

oral mucosa 50-1

communication skills, improvement

strategies 93-4

compliance issues see patient compliance compressive stressors 175

computer malware (software) 28-32

computer-aided diagnosis 17-22

concrescence 55

conductive hearing loss 204-9

eustachian tube dysfunction 205-7 maxillary expansion 207-9

otitis media 204-5, 207

condylar fractures 103 cone-beam computed tomography (CBCT)

cone-rod dystrophy 114 congenital orofacial deformities 132-50

classification of anomalies 133

management of conditions

achondroplasia 148-9

craniofacial microsomia 133-40

craniosynostoses 143-8 fetal alcohol syndrome 150

holoprosencephalic disorders 149-50

Teacher-Collins syndrome 140-3

velocardiofacial syndrome 143

psychological impact 132-3

connective tissue dysplasias 125-7 consent issues see patient consent

'contact splitting' 375

coronary artery disease 46





Index



dental caries 53-5, 56 cortical perforations 173 dietary recommendations 84-6 corticosteroids 173 in adulthood 87 see also deficiency states and corticotomies 173 cariogenic diets 86-7 malnutrition; nutrition cosmetic dentistry definitions 86 dietary supplements 86 gingival reshaping 430-1 interdisciplinary approaches 284-6 differential scanning calorimetry (DSC) see also individual orthodontic post-treatment remineralization 306 369-72 difficult patients interventions protective diets 87 Costen's syndrome 470 resin infiltration 306-7 body dysmorphia 79 CPAP therapy 228 dental casts, infants 157-8 borderline personality 79-80 craniofacial growth and development 4-5, dental dysplasias, associated conditions and narcissistic personalities 79-80 syndromes 113-14 and patient compliance 78-80 assessment methods and analysis dental eruption failures 121-2 perfectionist personalities 78–9 104-6 associated conditions 113, 121-2 search engine information 80 timing of orthodontic treatment 103-6 dental implants 444-68 DiGeorge syndrome see velocardiofacial see also tooth morphogenesis anchorage considerations 177-9, 444-5 syndrome craniofacial growth and development bone responses 177-9 digital photography 17-18, 19-20 anomalies 40-3, 96-107, 209 case presentations 445-63 outsourcing 20 specific growth-related problems 98-100 for forced eruptions 461-3 predicted post-treatment profiles 21-2, trauma-related issues 100-3 for holding molars vertical 445-6 digital radiography 18-21 craniofacial microsomia 122, 133-40 for intrusion of molars 446-8 etiology 133-5 and surgical placement of dilacerations see root dilacerations management 135-7 microimplants 463-7 diode lasers 424 orthodontic treatments 137-40 innovations 2 discoloration craniofacial trauma 100-3 post-surgery complications 467 oral mucosa 51 emergency orthodontic treatments success rates 466 teeth 58, 59-60 292-305 timing considerations 466-7 distraction osteogenesis 305 craniosynostoses 114, 123-4, 143-8 dental pulp 286 Don Quixote (Cervantes) 70 etiology 143-5 chamber narrowing 47 Down syndrome 40, 52, 113-14, management 145 exposure risks 293 117 necrosis 293-4 orthodontic interventions 492-7 orthodontic treatments 145-8 Crohn disease 47 preservation in young patients 293 dream interpretations, tooth loss 70 Cross syndrome 113 problems associated with orthodontic drug users 46 Crouzon syndrome 42, 114, 143-8, 149 treatments 286-8 dry mouth see xerostomia crowding of teeth 53, 56, 58 regeneration technologies 388-9 DUTCHCLEFT trial 158-9 crown fractures 292-3 tooth morphogenesis 382-3 dwarfism 113 cryptococcosis 259 dynamic mechanical analysis (DMA) dentin dysplasia 113 CT data and DICOM 17-18 dentinogenesis imperfecta 60 studies 369-72 Cvek pulpotomy technique 293 dentition examinations 53-60 dyskeratosis congenita 113 cyclic adenosine monophospate (cAMP) chronological age and maturation 53 dysostosis see cleidocranial dysplasia dental caries 53-5 dysphagia, family history 112 7-9 disorders of eruption 58-60 dysplasias see connective tissue dysplasias; cysts, jaw 62, 64 numbers of teeth 53 cytomegalovirus infections 253-4 dental dysplasias pigmentation and discolorations 58, data management, overview 16-17 59-60 E-models 18, 20-1 data recovery 29-32 shape anomalies 55-8 ear pain 209-10 data security 17, 28 size anomalies 55 early-onset periodontitis 113, 115-16 ear, nose and throat (ENT) specialists encryption systems 33-4 depression, post surgery 361 malware problems 28-9 dermatitis 47 195-211 passwords and digital signatures 17 development of craniofacial structures see anatomical associations 195-6 recovery measures and solutions 29-32 craniofacial growth and common anomalies 196-7 data storage 28 development joint concerns (ENT-orthodontic) De Lange syndrome 113 development stages (general) see child and 197 - 211debonding 305 adolescent development airway obstruction 197-204 deficiency states and malnutrition 43 diabetes mellitus 6-7, 44-5, 89, 183, cleft lip and palate patients 156, impact on orthodontic treatment 5-6, 191 - 287-8 diagnosis 37-64 conductive hearing loss 204-9 maternal 86 approaches and collaborations 4, 37-8 craniofacial anomalies 209-10 see also nutrition temporomandibular dysfunction computer-aided systems 17-22 template-guided 345 210-11 delayed tooth eruption 113 see also dental eruption failures 'diet' cf. 'nutrition' 83-4 key areas of interaction 196 dens invaginatus 55 dietary problems eating disorders 60, 88-9 dental agenesis 53, 54 cariogenic foods 86-7 ectodermal dysplasias 113, 115 associated conditions 114 see also eating disorders; obesity ectomesenchymal progenitor cells 382





education see orthodontic education Ehlers Danlos syndrome 113-14, 116, 125 18-P syndrome 114 Ekman-Westborg-Julin syndrome 113 elastic limit 371 elastic modulus 371 electronic data management 28-35 electronic fund transfer (EFT) 16-17 electronic patient record (EPR) 17 Ellis-van Creveld syndrome see chondroectodermal dysplasia email 25 appointment reminders 16 encryption 33 HIPAA compliance 33 embryological defects 40, 41-2 emergency treatments 292-305 emotional well-being post-surgery changes 360-4 treatment motivation levels 71 enamel agenesis 113 enamel demineralization and erosion 60 gastrointestinal diseases 47 post-trauma remineralization techniques prevention regimes 285-6 treatment-induced 280-2 white spot lesions 284-6 enamel hypoplasia 40, 47 enamel matrix derivatives (EMDs) 386-8 encryption systems 33-4 endocarditis 46 endocrine anomalies 41, 43-5, 182-93 growth hormone deficiency (GHD) 182 - 4endocrine system, impact on tooth movement 6-9, 182 endodontic treatments, interdisciplinary approaches 284 ENT specialists see ear, nose and throat (ENT) specialists enterococci infections 243-4 Enterococcus faecalis 243-4 enterovirus 251, 256 enzyme deficiencies 47 epidermolysis bullosa 113 epidural nevus syndrome 102 epiglottitis 244, 248 epilepsy 45 epithelial ovarian cancer, and hypodontia Epstein-Barr virus 253-4 eruption disorders primary failures 58-60, 121-2 see also delayed tooth eruption; forced eruptions erythematous spots 50 erythroplakia 50-1 erythropoiesis, extramedullary 48 eustachian tube dysfunction 205-7 examination see clinical examination external fixing devices 106

eye malformations 112

Fabry disease 113-14, 119 face masks 164 facial asymmetry 114, 122-3 functional 124 see also hemifacial microsomia facial esthetics 1-4 facial hyperplasia 55 facial orthopedics see surgically-facilitated orthodontic therapy (SFOT) facial palsies 136 facial regeneration technologies 385-8 facial wrap imaging 17-19 familial adenomatous polyposis 50, 113, and cancer 120-1 familial intestinal polyposis 50 fat (dietary) 85 fears, of tooth loss 70 fetal alcohol syndrome 113, 150 fetal face syndrome 114 fetal hydantoin syndrome 113 fiber composite archwires 369 fiberotomies 291 fibrous dysplasia 183, 190-1 file transfer protocol 25 financial records, maintenance software 16 - 17flap surgery 409-11, 467 flossing 397 fluoride 285-6 caries infiltration treatments 306 protective role 87 fluorosis 58, 59 folic acid 86 food choices during treatment 88 general dietary recommendations 84-6 see also nutrition forced eruptions 461-3 Fordyce granules 51 fragile X syndrome 114, 123 frenectomies 435-7, 438-9 FRESH goal prioritising 336, 338 Friedman grading 224 frontonasal dysplasia 114 functional appliances see functional therapy functional occlusion, and TMD 477 functional therapy, in craniofacial microsomia 138-9 fungal infections 256-62 GAPO syndrome 113 Gardner syndrome 50, 113, 119 and cancer 120-1 gastritis 47 gastrointestinal conditions 46-7

Gaucher disease 113

'geckel' adhesives 375

genetic inheritance 40

genetic tests 111

see also clinical genetics; congenital

 \bigoplus

orofacial deformities

geneticists see clinical geneticists

GHD see growth hormone deficiency (GHD) gigantism 43-4, 183, 184 gingival enlargement 398-400 gingival fibromatosis (hyperplasia) 45, 113, 121-2 gingival 'rebound' 395, 430-2 gingival reshaping 430-1 gingivectomies 399 laser use 429-30 gingivitis, acute necrotizing ulcerative 244, gingivoplasties, laser use 429-30 glass ionomer cements (GICs) 286 globodontia 112 gnathology 470-1 goals of treatment, decision-making processes 336 Goldenhar syndrome 42, 113-14 see also hemifacial microsomia gonorrhea 244, 249 GORD 47, 60 Gore-Tex materials 389 Gorlin syndrome 42, 112, 113-14, 123 Gorlin, Dr. Robert J. 110 grafting technologies (overview) 388-9 see also bone grafts; stem cell science grafts see bone grafts 'ground glass' jaw lesions 47 growth charts 12, 104 growth delays 41, 43-4 growth and development see craniofacial growth and development; physical growth (stature); tooth morphogenesis growth hormone deficiency (GHD) 182-4 growth hormone excess 43-4, 184 growth hormone therapy 105, 183-4 Hajdu-Cheney syndrome 113-14, 116 Hallermann-Streiff syndrome 113, 125 hand, foot and mouth disease 251, 256 Hashimoto thyroiditis 6-7

healthy eating guidelines 84-5 heavy metal poisoning 51 HED 114 Helicobacter pylori infection 262 hemangiomas 50-1, 102 hematological disorders 47-9 hematopoietic stem cells (HSCs) 381 hemifacial hypertrophy 55 hemifacial microsomia 122, 133-40 etiology 133-5 management 135-7 orthodontic treatments 137-40 hemihypertrophy 114 hemophilia 49 hepatitis virus 46-7, 251, 256 Herbst appliance 228 herpangina 255-6 herpesvirus infections 250-2 herpetic gingivostomatitis 250-2 Hertwig's epithelial root sheath 382







HFTC 114 HIPAA compliance 33 histiocytosis 101 histoplasmosis 259 history of orthodontics 2-4 history-taking see medical history HIV infection 39-40, 49, 254-5 hMSCs see human mesenchymal stem cells (hMSC) holoprosencephalic disorders 149-50 hormonal control see endocrine system HTTP 25-6 human mesenchymal stem cells (hMSC) 401, 403-18 human papillomavirus infections 251, 254 Hurler syndrome 113 Hurler-Scheie syndrome 113 hydroxyapatite 379 hypercementosis 58 hyperimmunoglobulinemia E 113 hyperparathyroidism 47 hyperparathyroidism-jaw tumor syndrome 183, 185–6 hypertelorism-hypospadias syndrome 114 hypertension 46 hypertrichosis lanuginosa 113 hypodontia 53, 54, 55 and cancer 120-1 see also syndromic hypodontia hypophosphatasia 58, 113, 115, 186-7 hypothalamic - pituitary - adrenal axis 9 hypothyroidism 44, 185

I-cell disease 113 imagery see digital photography; digital radiography immunodeficiency 6-7 immunosuppressive therapy 46 implants see dental implants incontinentia pigmenti 113, 119 infant orthodontics, for clefts of lip and palate 157-62 infection management principles 397-8 probing 3998 infections 240-63 bacterial 241-8 fungal 256-62 impact on craniofacial development impact on oral and dental health 46-7 impact on outcomes of orthodontic interventions 394-400 oral cavity as source 261-2 parasitic 260-1 viral 250-6 infective endocarditis 46, 261 inflammation 5 inflammatory bowel diseases 47 information technology for diagnosis and treatment 17-22 for electronic data management 29 for practice management 16-17 security and safeguards 30-2

use of Internet 22-8 virtual records 32-4 infraocclusion 58-60 initial examinations 38-9 intercuspation 57 interdisciplinary approaches 4, 38 clinical examples of positive outcomes 283-307 early assessment and evaluations 284-6 to common orthodontic problems 286-92 to TMD treatments 480 working with emergency and trauma specialists 292-305 working with ENT specialists 195-211 working with pediatric dentists 267-82 interim obturators 322-3 internal derangements 477-9 Internet email 25 evidence sources 27-8 file transfer protocol (FTP) 25 HTTP 25-6 patient education 80 remote frame buffer (RFB) protocol 26 interpersonal relationships, postorthodontic interventions 361

invasive cervical resorption 290-2 jaundice 51, 58 jaw imbalances (multidisciplinary teamwork) 332-64 assessment and initial examination checklists 332-5 diagnosis 339-41 evaluating interdisciplinary records 341-4 final reviews and evaluations 361-2 general patient assessments 341 goal identification and clarification intervention pathways and final plan 347 intervention planning sequences 333 multidisciplinary reviews of presenting problem 344-5 patient consultations to explain options

postsurgery reviews and complications management 357-61 presurgery procedures 351-7 risk presentation consultations 347-50 treatment conference reports 335-6 treatment milestone charts 348 treatment plan acceptance 350-1 jaw pathologies 62, 63-4, 185-6 see also bone remodelling; prognathism; temporomandibular dysfunctions jaw radiographs 62, 63-4 Johansson-Blizzard syndrome 114

Kallmann syndrome 114 Ketcham, Albert 2 Klinefelter syndrome 42, 112, 114

 \bigoplus

Kohlschutter-Tonz syndrome 114 Koplik spots 50

Laband syndrome 113 labial bows 322, 329-30 Larsen syndrome 113 laser therapies 399, 422-42 choice of anesthetic 425-7 components 422-3 concepts and definitions 422 cf. conventional surgery 423-4 diode vs. solid-state lasers 424-5 historical perspectives 423 machine set-ups 427-9 postsurgical management 442 safety considerations 440-2 surgical applications and procedures 429-40 timing of interventions 433 tooth and mini-implant exposures 433-5 latex allergies 47 Lemierre abscess 244 Leopard syndrome 114 leprosv 249 leukemia 48-9 leukoplakia 50-1 lichen planus 51 lip taping 159 lips, crusting 50 liver dysfunction 46 long anterior facial height 114 'long face syndrome' 198-204, 344 Lowe syndrome 115 lupus erythematosus 6-7 lymphangioma, tongue 52

McCune-Allbright syndrome 44, 113 McNeil-type appliances 158 macrodontia 55 macroglossia 52 magnesium deficiency 88 malabsorption 47 malar deficiency see midface (malar) deficiency malnutrition 5-6, 43, 86, 87-8 malocclusions impact on self-esteem 106 overview of causes and associated syndromes 42, 44 treatment 'need' vs. 'demand' 70-1 see also specific conditions malware infections 28-32 mandibular advancement splints 228 mandibular deficiency 113, 343 causes and associated syndromes 42 prevalence 343 mandibular prognathism 114 mandibular retrognathism 124 mandibulofacial dysostosis (MFD) see Treacher Collins syndrome marble bone disease see osteopetrosis Marfan syndrome 113, 126-7 Maroteaux-Lamy syndrome 113





Marshall syndrome 114 Martin-Bell syndrome 114, 123 materials science background and past studies 366-73 current research areas 373-7 innovations and recent advances 2, 374 see also biomaterials matrix metalloproteinase (MMP) hydrogels maxillary expansion treatments 207-9, 220 - 1maxillary hypoplasia 123-4 maxillary incisor anomalies absent 275-9 single central incisor 114, 120, 184 maxillary incisor trauma 292 maxillectomies 324-6 maxillofacial prosthodontics, techniques and appliances 322-3 maxillonasal dysplasia 114, 123 measles 251, 254 mechanical load 175-7 mechanics of bone remodelling 175-7 median cleft lip, associated conditions 114 medical history 39-40 patient health and medical status 40-9 medical referrals 38 medications causing mouth dryness 87 impact on tooth movement 5 memory polymer materials 373-4 meningitis, chronic 262 Menke kinky hair syndrome 113 mesenchymal stem cells (MSC) 381-3, 401, 403-18 metabolic anomalies 43-5 metal allergies 47 metallurgy, innovations 2 micro-implants, surgical placement 463-7 microabrasion 306 microcracks (bone) 176 microdontia 55 microleakage complications 286 Microsoft Windows, malware infections 30 - 2midface (malar) deficiencies 160-2 associated conditions 114 orthopedic interventions 160-2 post-CLP treatments 164-6 missing teeth see dental agenesis; tooth loss mixed dentition period, cleft lip and palate orthodontics 159-60 Mobius syndrome 113 modelling see bone modelling Mohr syndrome 115 molars enlarged 112 impacted 210-11 intrusion 446-53 maintaining vertical 445-6

simultaneous intrusions 450-3

uprighting procedures 453-60

monobloc appliances 220, 234 motivational aspects of orthodontic care 69-80 communication and education 72 emotional and behavioral influencing factors 71 'need' vs. 'demand' 70-1 perception aspects 72-6 personality variables 76 quality of life issues 69-70 and treatment compliance 77-80 see also goals of treatment mouth breathing 197-200 MRI scans 62 mucosal ulceration 47 mucositis 241-2 multidisciplinary teamworking (surgical case studies) 332-64 assessment and initial examination checklists 332-5 diagnosis making 339-41 evaluating interdisciplinary records 341 - 4final reviews and evaluations 361-2 general patient assessments 341 goal identification and clarification 336-8 patient consultations to explain options postsurgery reviews and complications management 357-61 presurgery procedures 351-7 risk presentation consultations 347-50 treatment conference reports 335-6 see also interdisciplinary approaches multiple endocrine neoplasia (MEN) 44 multiple sclerosis, impact on pain responses mumps 251, 254 Murray-Puretic-Drescher syndrome 113 mycobacterial infections 249 mycoses 259-60

Nager acrofacial syndrome 113 Nance-Horan syndrome 113, 119 Nanog markers 382-3 nanotechnologies 377, 383-4 narcissistic personalities 79-80 nasal stents 159 nasoalveolar molding 159 natural rubber latex (NRL) allergies 47 nephrocalcinosis 113 neural crest cells 381-3 neural crest tube defects 133-4 neurofibromatosis 44, 113-14 neurological conditions, impact on pain responses 6 neuromuscular asymmetry 124 neuromuscular disorders 45 nickel allergies 47, 373 nickel-titanium archwires, mechanical properties 369-72

nonerythematous pigmentation 50 nonmetallic archwires 368-9 Noonan syndrome 114 NRL allergies see natural rubber latex (NRL) allergies NSAIDs 5, 172-3 numbers of teeth 53 nutrition 83-94 assessment of dietary habits 6 cariogenicity of foods 86-7 and child development 86 deficiency states 41, 43 dietary recommendations 84-6 impact on orthodontic outcomes 5-6, patient education 90-4 practitioner resources 94 role of orthodontists 83-4 strategies for managing 89-94 'nutrition' cf. 'diet' 83-4 obesity

adult 89 childhood 88-9 obstructive sleep apnea (OSA) 214-35 definitions 214 diagnosis and investigations 216 - 17examination charts 232-3 forms and spectrum 215-16 in adults 220-30 orthodontic management 227-8 orthognathic management 229-30 in children 218-21 orthodontic management 220-1, 235 influencing variables 217-18 prevalence 215 surgical interventions 229-30 use of orthodontic appliances 220-1, 228 occlusion centric shifts 62, 63 clinical assessment 60-2, 63 impact of temporomandibular dysfunctions 477 optimal types 477 role of canine teeth 477 Oct4 markers 382-3 ocular hypertelorism, associated conditions 114 oculo-facial-cardio-dental syndrome 55

odontogenic keratocyst 112

oligodontia see supernumerary teeth

online appointment scheduling 16

oligodontia-colorectal cancer syndrome

OPCs see osteoprogenitor cells (OPCs)

odontoma 112, 113

121

posterior 101

open bite 52 anterior 98









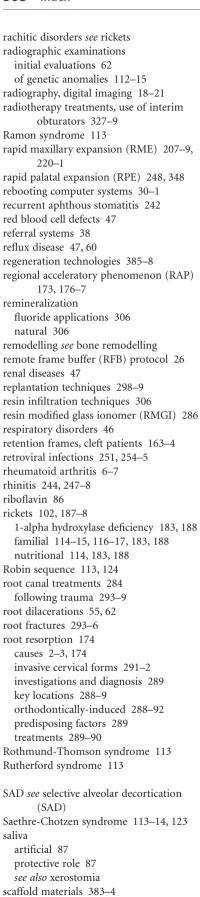
Pierre Robin complex 42 operculectomy 437 partnership working see interdisciplinary oral health approaches pituitary gland 43-4 bacterial infections 243-5 passive appliances, infant 158-9 anomalies 43-4, 184 soft tissue examinations 50-2 patient compliance 77-80 placebo trials, for TMD treatments 479 plagiocephaly 103 oral hygiene 52-3 assessing psychosocial variables 77 oral mucosa dealing with substance abuse 77-8 platelet-derived growth factor (PDGF) clinical examination 50-2 managing difficult patients 78-80 388 discolorations 51 patient consent PLGA see poly-lactic-co-glycolic acid cognitive and emotional factors 71-2 (PLGA) lesions 51-2 melanomas 51 see also patient compliance pneumonia 262 pigmentation patches 50-1 patient education poly-lactic-co-glycolic acid (PLGA) computer-assisted technologies 21-2 swellings 51-2 383-4 oro-facial-digital syndrome 113-14, 115 Internet searches 80 polyglycolic acid (PGA) 384 orthodontic appliances see appliances in nutrition 90-4 polymeric archwires 368-9 (general considerations); brackets patient records, integration 32-3 shape memory materials 373-4 and banding patients polyoxometalates (POMs) 377 orthodontic education, approaches and facial esthetics 1-4 post-surgery complications 357-61 focus 2-3 importance of biological status 5-9 posterior crossbites 272-5 orthodontically induced inflammatory root whole person approaches 4-5 practice management systems (PMS) 16 resorption (OIRR) 288 payment records 16-17 benefits 16-17 peak growth velocity 104-5 orthodontics software comparisons 16 broadening scope 4 pediatric dentistry and orthodontics pre-prosthetic treatments 313-30 history 2-4 267 - 82benefits and rationale 313-14 holistic approaches 4-5 coordinating appointments 268-70 case studies importance of biological status 5-9 early identification of problems minor tooth movement prior to public perceptions 2 270 - 2canine guidance and full mouth orthopedic interventions see surgicallyrehabilitation 320-4 responsibilities for problems 280-2 facilitated orthodontic therapy restoring form and function 272-9 orthodontic intrusion 314, 315 (SFOT) retention considerations and reviews restoration after maxillectomy for OSA see obstructive sleep apnea 279 - 80ostomyelitis 324-7 osteocyte plasticity hypothesis 175-6 pemphigus 51 restoration of maxillectomy due to osteodystrophy 47 periodontal flap surgery 291 adenoid cystic carcinoma 327-30 osteogenesis imperfecta 42, 113-14, 125-6 periodontal infection use of implants for anchorage and osteoglophonic dysplasia 113 impact on outcomes of orthodontic extrusion for site development osteoid 173 interventions 394-400 osteomyelitis 40, 262, 326 see also infections predicted post-treatment imagery 21-2, osteonecrosis, jaw 174 periodontal ligament (PDL) 24 osteopathia striata 113 stem cells 383 premature delivery 262 osteopenia, transient 174 stress studies 373 premature tooth exfoliation 115-18 osteopetrosis 113, 188-90 periodontal status 52-3 associated conditions 113, 116-18 forms 189 periodontally accelerated osteogenic premaxillary agenesis syndrome 114 osteoporosis 174 orthodontics (PAOO) 'pressure' responses 175 primary adrenal insufficiency 183, 192 osteoprogenitor cells (OPCs) 401, 405-6 case studies 403-18 otitis media 201, 204-5 described 401-2 primary failure of eruption (PFE) 58-60, otodental dysplasia 112, 113 periodontitis 398 121, 303 otolaryngology 201-3 early-onset 113, 115-16 primary herpetic gingivostomatitis 250-2 outcomes of treatment, consequences of peritonsillar abscess 244, 246 priming (laser therapies) 424-5 inadequate training 2 personality progeria 113 prognathism 184 and motivation for treatment 76 pacifiers 97-8 see also difficult patients prosthodontic treatments Paget's diesease 174 petechiae 50 following maxillectomy 327-9 pain responses, impact of underlying Pfeiffer syndrome 114 for radiation therapy 326 medical condition 6 pharyngitis, acute 245-6 protein (dietary) 85 pancreas 44-5 phosphorus, and bone mass 88 protruding jaw see prognathism PAOO see periodontally accelerated physical activity, daily guidelines 85 psychiatric disturbances 45-6 osteogenic orthodontics (PAOO) physical appearance psychosocial factors 9, 69-80 papilla flattening, use of laser 432-3 and motivation 69-70 emotional and behavioral infuencing Papillon-Lefevre syndrome 113-14, 116 perceptions of attractiveness 73-6 factors 71-2 paracoccidioidomycosis 260 physical growth (stature) function vs. quality of life 69-70 parasitic infections 260-1 delays and short stature 41, 43-4 pulp see dental pulp parathyroid hormone (PTH) 6 gigantism 43-4, 183, 184 pyknodysostosis 113 Parry-Romberg syndrome 113-14, in males 12 122 - 3physiological status of patients 5-9 quality of life issues 69-70

 \bigoplus









see also tissue engineering

scar tissue, cleft lip and palate patients
163–4 sclerosteosis 113
screw devices <i>see</i> skeletal anchorage
Seckel syndrome 113
sedation risks, with special needs children 489
seizure disorders 45
selective alveolar decortication (SAD) 401–2
self-cleaning materials 376–7
self-concept 70–1
and adolescence 77
post-surgery changes 360–1
self-healing appliance materials 374–5 self-ligating brackets 367
sex chromosome aneuplodies 42, 55,
112–15
shape memory polymers 373-4
short stature 41, 43-4
SHORT syndrome 113
sickle cell anemia 47–8
signaling molecules 384 Singleton-Merten syndrome 113–14, 116
sinus problems, post-surgery 360
sinusitis 244, 247–8
skeletal anchorage 444-68
bone responses 177–9
case presentations 445–63
forced eruption 461–3
holding molar vertical 445–6 intrusion of molars 446–8
molar uprighting 453–60
surgical placement of microimplants
463–7
interactive approaches 445
post-surgery complications 467
root damage 467 success rates 466
timing considerations 466–7
types of device 444–5
skull trauma 100–3
sleep-disordered breathing (SDB) 215-16
see also obstructive sleep apnea
smart brackets 374–5, 376
smart materials 377 'smile esthetics', gingival reshaping 430–1
SMMCI see solitary median maxillary
central incisor (SMMCI)
snack foods 85, 86, 89
sodium intake 85
soft drinks 88
soft tissue examinations 50–2 soft tissue lesions 51–2
laser excisions 439–40
software comparisons, practice
management systems (PMS) 16
solid-state lasers 425
solitary median maxillary central incisor
(SMMCI) 114, 120, 184 special needs children 485–98
access arrangements 485–6
care management principles 486–7

1: 100 =
case studies 490–7
cerebral palsy patients 490-2
Down syndrome patients 492-7
deciding treatment plans 487–9
particular considerations 489
relapse and retention 489
sedation risks 489
peech pathology, for CLP patients 156
porotrichosis 260
SSEA3/4 markers 382–3
Staphylococcus aureus 243, 244
tatins 5
tature see physical growth (stature)
tem cell science 381-3, 392-419
background history 393-400
bone and attachment levels 393-4
bone restructuring developments
394–6
risks of infection and gingival
enlargement 397–400
contraindications 415–16
future research needs 418
key principles and processes 401-2
new technologies 400-18
for facial regeneration 385–6
see also tissue engineering
teroids 5, 39
iatrogenic root resorption 47
impact on bone remodelling 173
inhaled 46
Stickler syndrome 113-14, 127
Stillman clefts 53
tomatitis (recurrent aphthous) 242
Streptococcus mutans studies 373
ubstance misuse 46
ucking habits 97–8
ugar
cariogenicity 86–7
daily intake guidelines 85
definitions 86–7
upernumerary teeth 53–4, 56
associated conditions 113, 118–20
and cancer 120–1
uppurative parotitis 244, 246–7
urgical interventions see laser therapies;
surgically-facilitated orthodontic
therapy (SFOT)
urgical screws 177–9
see also dental implants
urgically-facilitated orthodontic therapy
(SFOT)
bone graft procedures 405–9
cleft lip and palate 160–2
midface (malar) deficiencies 160-2
post-graft/implant flap surgery 409-11,
467
replantation techniques 298-9
skeletal anchorage and dental implants
177–9, 444–63
skeletal jaw imbalance case studies
332–64
wallowing difficulties see dysphagia
ymbolism and teeth 70
•





Index



syndromic hypodontia, associated conditions 120 syphilis 39-40, 244, 249-50 systemic fluorosis 58, 59 talon cusp 55-8 taurodontism 55, 112-15 telemedicine 27 temporomandibular dysfunctions 47, 210, 470-81 background to studies 470-2 causes 471-2 characteristics of patients 472 classifications 472 controversies and role of orthodontics 472-4 key theories 473 centric relation controversy 474-7 functional occlusion 477 internal derangements and 'need to treat' 477-9 diagnosis and investigations 471 multidisciplinary treatment options 480 post-surgery complications 360 treatment controversies 479-80 temporomandibular joint (TMJ), clinical examination 60-2, 471 template-guided diagnosis 345 tensile stressors 175 'tension' responses 175 tetracycline 58, 60 thalassemia 47, 62 3D images 18-21 thumb sucking 98 thyroid disease 183, 184-5 thyroid gland 44 thyrotoxicosis, juvenile 44 thyroxine 184-5 tissue engineering 380-9 definitions 380 impact on orthodontics 384-8 key principles and processes 381-3 role of signaling molecules 384 types of scaffolds 383-4 use of biomaterials 383-4 tissue rebounding 395, 430-2 titanium oxide coatings 377 TMJ see temporomandibular joint (TMJ) clinical examination 52, 222-4 enlargements 184

tongue thrusting 97-8, 99 tongue-retainer devices 228 tonsils 196-7 anomalies 197-200 grading systems 224 investigations 222-7 removal 201-3 tooth absence see dental agenesis tooth avulsion 297-8 tooth eruption delays see delayed tooth eruption 'tooth fairy' issues 70 tooth loss complete 297-8 fears and anxieties 70 replantation and stabilization techniques 298-301 trauma-related 297-8 see also premature tooth exfoliation tooth morphogenesis 382-3 tooth movement 'with bone' see bone modelling tooth regeneration technologies 385-8 tooth shape anomalies 55-8 tooth size anomalies 55, 57 toothpastes, abrasive 60 torticollis 103 training see orthodontic education transmucal penetration (TMP) 412 - 15transplantation technologies 385-6 see also allografts trauma see craniofacial trauma Treacher Collins syndrome 42, 113, 127 etiology 140 management 140-2 orthodontic treatments 142-3 treatment consent see patient consent trichodentoosseous syndrome (TDO) 112, trichorhinophalangeal syndrome 113-14, 119-20 Trisomv-18 113, 115 tuberculosis 249 Turner syndrome 55, 112-15, 183, 192-3 2D facial photo wrap 17-19 tympanometry 207 ulcerative colitis 47 ulcers, non-healing 51, 242

van der Waals forces 375 van der Woude syndrome 114, 127-8 varicella zoster infection 252-3 vascular compression problems 287 velocardiofacial syndrome 113-14, 124-5, 143 video teleconferencing 26-7 viral hepatitis 46-7 viral infections 250-6 clinical appearances 251 oral cavity 244, 247-8, 250-6 treatments 251 virtual patient records 32-4 virus infections (software) 28-32 vitamin A, toxicity 88 vitamin B(2) 86 vitamin C, deficiencies 43, 86, 87-8 vitamin D deficiencies 43 hydroxylation pathways 6 toxicity 86 vitamin K, deficiency 88 voice over internet protocol (VoIP) 26 von Willebrand's disease 49 Waardenburg syndrome 114 Waldeyer's ring 196

web conferencing 27 white sponge nevus 51 white spot lesions, interdisciplinary treatment approaches 284-6, 'whole bone' models 403 Wi-Fi phones 26 Wildervanck-Smith syndrome 113 Wilkie oculo-facio-cardio-dental syndrome 114 Williams syndrome 113, 115 Wolf-Hirschhorn syndrome 114

X-linked hypophosphatemic rickets 114-15, 116-17, 183, 188 xerostomia 45, 87 causes 87

yeast infections 256, 257-9

zinc 86





unilateral posterior crossbites 272-5



•

