

# Index

Note: page numbers in *italics* refer to figures, those in **bold** refer to tables

- A $\alpha$  fibers **39**, 41
  - A $\beta$  fibers **39**, 41
    - trigeminal nerve sensory nucleus 44
  - A $\delta$  fibers **39**, 41
    - dorsal horn entry 44
    - nociception 42
  - abdomen, liposuction indications 452–3
  - Ablative Affirm Carbon Dioxide resurfacing **396**, 402
  - ABS nail tips 216, 217
  - acetaminophen 287
  - acetone
    - artificial nail removal 219
    - nail polish remover 213
  - acids, strong 56–7
  - acne
    - adhesive pads 492
    - alpha-hydroxyacids 490
    - antimicrobials 491
    - benzoyl peroxide 489–90, 491
    - beta-hydroxyacids 490–1
    - cleansing 488–9
    - cleansing brushes 492
    - cleansing cloths 491–2
    - electronic heating device 492
    - essential oils 492
    - gluconolactone 491
    - isotretinoin 493
    - lactobionic acid 491
    - mechanical treatments 492
    - microdermabrasion 420–1
    - mild cleansing 84–5, 86
    - nicotinamide 493
    - oral vitamins 492–3
    - over-the-counter treatments 488–93
    - polyhydroxyacids 491
    - retinoids 491
    - salicylic acid 490–1
    - scarring 426–7
    - scrubs 492
    - soaps 488–9
    - sulfur 491
    - syndet treatment 488–9
    - triclosan/triclocarban 491
    - vitamin A 493
  - acneiform eruptions 57
  - acrylates 217
  - actinic keratoses, chemical peel 390, 391
  - activator protein 1 (AP-1) 16, 17, 19
    - activation
      - by phenolic compounds 283
      - by retinoic acid receptors 483
    - corticosteroid mechanism of action 286, 287
    - MAP kinase signaling pathway 302
    - microdermabrasion effects 419
  - Active and Deep FX Lumenis fractionated carbon dioxide laser 396–8, 399, 400
    - procedures/technique 407
  - adhesive pads 492
  - advanced glycation endproducts (AGEs) 339
  - adverse reactions
    - antiperspirants 154–5
    - artificial nails 219–20
    - calcium hydroxylapatite hand recontouring 477
    - collagen fillers 369–72
    - cosmetics 55
    - deodorants 154–5
    - hair permanent waving 245, 245, **246**
    - nail cosmetic prostheses 219–20
    - nail grooming 203–4
  - aerosol sprays, sunscreen vehicles 147
  - afferent nerves, synapses 43–4
  - African hair 35, 264
    - pseudofolliculitis barbae 162
    - styling aids 263–4
  - African–American skin
    - aging 31–2
    - ashy skin 92
    - self-perceived sensitive skin 24–5
    - UV irradiation 18
  - aging
    - African-American skin 31–2
    - Asian skin 31–2
    - brow ptosis 31
    - Caucasian skin 31–2
    - chronic 13–14
    - cytokines 304–5
    - ethnic skin 31–2
    - face evaluation 362
    - facial tissue sagging 32
  - free radical theory 312–13
  - growth factors 304–5
  - hair 237–8
  - hands 473–9
  - Hispanic skin 32
  - inflammatory process 286
  - pathophysiology 409
  - physiology 302–5
  - reversal 304–6
  - see also* antiaging products; photoaging; wrinkles
- alcohol
    - hand sanitizers 108, 111
    - waterless cleansers 104
  - aldobionic acids 328
  - alexandrite laser, long pulsed 435
  - alkalis, strong 57
  - alkaloids, plant 272
  - allergens 56–60
    - IgE antibodies 60
    - self-perceived sensitive skin **23**
  - allergic contact dermatitis 55–6
    - irritant contact dermatitis differential diagnosis 56
  - allergy/allergic reactions 58–60
    - antibacterials 111
    - bovine collagen 366
    - collagen fillers 60, 370–1
    - fragrances 111
    - hair dyes 59, 234
    - nail cosmetics 203, 204
    - sensitive skin 23
    - UV cured nail lacquer 212
  - Alloderm **364**, 365
  - aloe 275–6
  - alpha-hydroxyacids (AHA) 327, 328, 329
    - acne treatment 490
    - antiaging 483, **486**
    - antioxidant 329
    - chemical peels 377–8
    - peels 332–3, 500–1
    - rosacea 500–1
    - water binding 329
  - aluminium compounds, antiperspirants 152, 153
  - aluminium oxide, microdermabrasion 418
  - Alzheimer's disease 154

- amino acids  
 definition 292  
 hair 238  
 protein chain 293  
 side chains 292, 293
- 5-aminolevulinic acid (5-ALA) 436
- ammonium thioglycolate 250–1
- anaesthetics, injectable 59
- anagen phase of hair growth 157, 236, 433
- anesthesia  
 dermabrasion 428, 429  
 fractionated carbon dioxide laser  
 resurfacing pretreatment 407  
 liposuction 450  
 neck 466–7  
 polylactic acid fillers 373
- angiogenesis 19
- antiaging products  
 antioxidants 484–6  
 botanicals **274**  
 coenzyme Q10 485, **486**  
 cytokines 304–5, 307  
 ferulic acid with vitamins C and E 485, **486**  
 genistein 486  
 hyaluronic acid fillers 352–5, **474**  
 hydroxyacids 332, 483, **486**  
 alpha-lipoic acid 485, **486**  
 retinoic acid 483, **486**  
 retinoids 483–4  
 selenium 485, **486**  
 vitamin C 484, **486**  
 with vitamin E 484–5  
 vitamin E 484, **486**  
*see also* botulinum *entries*; calcium hydroxylapatite; fillers; growth factors
- antiaging regimen 480–6  
 cleansing 480–1  
 exfoliation 481, 482  
 protection 481–3  
 sunscreens/UV light protection 481–3  
 treatments 483–6  
 vitamin C 325  
*see also* photoaging
- antibacterials  
 allergy 111  
 cleansers 480–1, 491  
 soap bars 79
- antibiotics, rosacea treatment 499–500
- antidandruff materials 117
- antifungal agents, nail lacquer 209
- anti-inflammatory agents 284–90  
 botanicals 289  
 cosmeceutical actives 289  
 topically applied 11
- anti-inflammatory techniques, LED photomodulation 446–8
- antimicrobial agents  
 acne treatment 491  
 resistance 111–12
- antioxidants 8, 281–4  
 antiaging 484–6  
 body washes 90  
 cell signaling pathways 282  
 enzymes 8  
 free radical damage protection 282  
 hydroxyacids 329–30  
 lipsticks 188  
 oral 281  
 partition coefficient value 284  
 peptides 294  
 photoaging prevention 19–20  
 potency assessment 282  
 retinoids 312–13  
 skin health **336**  
 skin penetration 284  
 topical 11, 281  
 formulation 283–4  
 sun protection 482–3  
 topical formulation protection 52–3, 54  
 UV damage protection 337  
 combinations 338  
 product 53  
 vitamin C 281, 282, 283, 324  
 vitamin E 281, 282, 283, 325  
 topical formulation 284
- antiperspirants 150–5  
 actives 152  
 adverse effects 154–5  
 aluminium compounds 152, 153  
 breast cancer 154–5  
 chemistry 153  
 crystal products 153  
 definition 152  
 delivery systems 153–4  
 formulation 153  
 sweating control 155  
 Wetness Inhibiting Performance 153
- antiwrinkle performance, facial foundation effect measurement 173
- apocrine glands 150, 151, 152
- apoptosis  
 photoaging 32  
 UV-induced 7–8
- aquaporins 135–6, 137
- arbutin 272
- arms, liposuction indications 454–5
- aromatic hydroxyacids 328–9
- arrector pili muscle 157
- Artecoll 366, 367
- Artefill 366, 367
- ascorbic acid *see* vitamin C
- ascorbyl phosphates 325
- ashy skin, African–Americans 92
- Asian hair 33–5, 264
- Asian skin 18  
 aging 31–2  
 self-perceived sensitive skin 24, 25
- aspartate proteases 7
- aspirin 287
- astaxanthin 338
- atopic dermatitis  
 body washes 92, 94  
 facial 128  
 mild cleansing 84, 85  
 moisturizer use 128  
 topical corticosteroids 128
- Autologene **364**, 365
- avobenzene 147, 148  
 sunscreen 481, 482
- azelaic acid 500, 501
- B cells, corticosteroid prolonged use 287
- bar cleansers 77–87, **104**
- barrier function  
 microdermabrasion 418  
 panthenol effects 323  
 repair 506  
*see also* epidermal barrier
- behenyl alcohol 126
- benzoyl peroxide 489–90, 491
- beta-hydroxyacids (BHA) 327–8, 329  
 acne treatment 490–1  
 antiaging 483, **486**  
 antioxidant 329  
 water binding 329
- betaines, facial cleansers 97
- bionic acids 328, 329
- biotin, brittle nails 203
- black henna tattoos 234
- black skin  
 dermis 31  
 dyspigmentation 33  
 hyperpigmentation 33  
 irritant contact dermatitis 30  
 photoaging 33  
 transepidermal water loss 30  
 UVA protective factor 29  
 UVB protective factor 29  
*see also* African–American skin
- blade shaving *see* shaving, blade
- bleaches  
 allergic reactions 59  
*see also* hair bleaches
- blepharopigmentation 194
- body washes 88–94  
 antioxidants 90  
 ashy skin 92  
 atopic dermatitis 92, 94  
 chelating agents 90  
 cleansing ability 90  
 color 90  
 components 89–90  
 consumer understanding 90–1

## Index

- exfoliation aids 90
- fragrances 90
- in-use performance 90–2
- moisturization from 91–2, 93
- moisturizing 88–91
- people benefitting 92, 93, 94
- regular 88
- skin benefit agents 89–90
- specialty 89
- surfactants 89
- syndets 89
- types 88–9
- water content 89
- bombesin 295
- botanicals 269–79
  - antiaging **274**
  - anti-inflammatory 289
  - emollients **274**
  - lighteners **276**
  - photoprotection **276**
  - studied 273
  - tighteners **276**
- Botox 342
  - advantages 343
  - complications 350–1
  - contraindications **344**
  - disadvantages 343
  - indications 343–4
  - injection techniques 344, 345, 346–9
    - lower face treatment 348–9
      - side-effects 350–1
    - midface treatment 347
  - precautions **344**
  - product stability 343
  - treatment sites 344, **345**, 346–9
    - upper face treatment 344, **345**, 346–7
      - side-effects 350
- botulinum neurotoxin type A (BoNTA) 342–3
  - filler combination 349, **350**
  - immunogenicity 350
  - upper face treatment 344, **345**, 346–7
- botulinum neurotoxin type B (BoNTB) 342
- botulinum toxin 299, 342–51
  - allergic reactions 60
  - fractionated carbon dioxide laser resurfacing pretreatment 407
  - marginal mandibular branch of facial nerve damage 470
  - mechanism of action 343
  - physical characteristics 343
- brain
  - activation with self-perceived sensitive skin 25
  - thalamocortical afferents 44, 45
- breast cancer, antiperspirants 154–5
- breasts, liposuction 456
- brighteners **276**
- bromelain 276
- brow lift, lateral 347
- brow ptosis 31
- bruising
  - Botox 349–50
  - collagen fillers 370
- buffer salts, hair permanent waving 242
- bunny lines 347–8
- buttocks, liposuction indications 453–4
- butyl methoxy dibenzoyl methane (BMDM) 147, 148
- caffeine 276–7
- calcineurin inhibitors 288
  - eczema treatment 502
- calcitonin gene-related peptide (CGRP) 294–5
- calcium gradient, stratum corneum 9
- calcium hydroxylapatite 356–60
  - anaesthesia 359
  - areas for correction 357
  - complications 359
  - hand recontouring 473–9
    - adverse events 477
    - injection technique 474–7
    - lidocaine 474–5, 478–9
    - post-injection hand massage 475–6
    - post-treatment care 476–7
    - results 477, 478
  - indications 356–7, 358, 359
  - microspheres 356, 357, 474
  - pharmacology 356
  - physical properties 356
  - techniques 356–7, 358, 359
- camouflage makeup 176–83
  - application 176–8
  - color matching 177
  - definition 176
  - goals 176
  - indications for 179
  - melasma 180
  - neutralizers 177
  - periorbital hyperpigmentation 179
  - postsurgical scars 179
  - quality of life 182–3
  - removal 178
  - skin matching 177
  - telangiectasia 182
  - texture abnormalities 177
  - vascular malformation 181
  - vitiligo 179, 180
- camouflage therapists 181–2
- camphor 208
- cancer risk
  - growth factors 306
  - hair dyes 234
- capsaicin test 23–4
- carbomers 73
- carbon dioxide, solid **378**, 380
  - carbon dioxide laser resurfacing 393–408
    - fractionated 394–8, 399, 400–3, 404, 405–7
    - thermal necrosis 394
  - carnosine 294, 296
  - beta-carotene 337, 339
  - carotenoids
    - antioxidant 281
    - skin appearance improvement 338
    - UV damage protection 337
  - castor oil, lipsticks 187
  - catagen phase of hair growth 157–8, 433
  - catalase 8
  - cationic polymers, shampoo conditioning aids 116
  - Caucasian hair 33–5, 264
  - Caucasian skin
    - aging 31–2
    - self-perceived sensitive skin 24
    - UV irradiation 18, 29
  - cell signaling pathways, antioxidants 282
  - central nervous system (CNS),
    - self-perceived sensitive skin 25
  - central projections 43–4
  - ceramides
    - microdermabrasion effects 419
    - skin barrier building 103
  - cervicomental angle (CMA) 463, 464
    - reduced after liposuction 468
  - C-fibers 23, **39**, 41
    - dorsal horn entry 44
    - itch 42–3
    - nociception 42
    - pleasure sensation 43
    - self-perceived sensitive skin 25
  - chamomile, German 277, 492
  - cheilitis 186
  - chelating agents, body washes 90
  - chemical peel, microdermabrasion
    - comparison 422–3
  - chemical peels
    - advantages 380, 385
    - combination 384–5
    - complications 382
    - contraindications 385, **386**
    - depth 377, **378**
    - disadvantages 380, 385
    - fluor-hydroxy pulse peel 381
    - formulation 377–80, 384–5
    - frosting 388
    - histologic changes 377
    - indications 377, 385–6
    - long-term skin care 390
    - medium-depth 384–91
      - analgesia 387
      - complications 388, 390
      - granulation 388, 389
      - long-term skin care 390
      - patient preparation 387

- post-procedure 388
- sedation 387
- set-up 386
- technique 386, 387–8
- wound healing 388, 389
- post-care 381
- priming 380
- procedure 380–1
- scar chemical reconstruction 381–2
- superficial 377–83
- techniques 380–2, 386, 387–8
- chemical reconstruction of skin scars (CROSS) 381–2
- chemokines 285
- chest liposuction, male 456
- chin
  - Botox treatment of dimple 348
  - implants 471
- Chinese herbal medicines, toxicity 271
- chromophores 146
  - UV absorption 14
- Chrysanthellum indicum* 500
- ciclosporin 288
- citric acid 483
- clays, hair styling aids 262
- cleansers
  - allergic reactions 58
  - antiaging 480–1
  - antibacterials 480–1, 491
  - bar 77–87, **104**
  - exfoliants 481
  - foaming liquid **104**
  - formulation 480–1
  - fragrances 104
  - lipid-free 104
  - low-foam 102–5
    - mechanisms 104–5
    - mildness 103–4
    - production 103
    - types 102–4
  - non-foam 102–5
    - mechanisms 104–5
    - types 102–4
  - personal 88–94
  - preservatives 104
  - rosacea 497, **498**
  - skin barrier building ingredients 103
  - skin disease 84–5, 86
  - types **104**
  - waterless 104
  - see also* body washes; facial cleansers; hand sanitizers; hand washes; shampoos
- cleansing
  - acne 488–9
  - antiaging regimen 480–1
  - body wash ability 90
  - mechanisms 104–5
  - procedure 481
  - skin barrier damage 105
  - see also* facial cleansing
- cleansing bars 77–87
  - formulation 77–8
  - manufacturing processes 78
  - non-soap detergent 79
  - preservatives 79
  - skin structure/function impact 79–81
  - soap 78–9
  - see also* syndets/syndet bars
- cleansing brushes 492
- cleansing cloths 98–9
  - acne treatment 491–2
  - dry lathering 99
  - wet 99
- cleansing milks 98
- climbazole 117, **118**
- Clostridium botulinum* 342
- C-mechano-heat (CMH) nociceptors 42
- coacervate 116
- coal tar 118
- coenzyme Q10 (CoQ10) 284
  - antiaging 485, **486**
  - nanoemulsions 505
  - skin appearance 339
  - wound healing 340
- coffee 276–7
- coffeeberry extract 277
- cold-sensitive fibers 41, 42
- collagen
  - bovine 366
  - degradation stimulation 16
  - dermis 31
  - laser treatment 409
  - photoaging 15, 409
  - skin fibroblast 297
  - stimulation by hyaluronic acid fillers 354–5
  - synthesis by fibroblasts 16, 17
- collagen fibers, photoaging 14
- collagen fillers 361–72
  - adverse reactions 369–72
  - allergic reactions 60, 370–1
  - anaesthesia 367
  - animal-derived 365–6
  - bioengineered animal-derived 366
  - cross-hatching 367
  - facial augmentation 367–9
  - fanning 367
  - granuloma formation 371
  - hand rejuvenation 369
  - infections 371–2
  - injection techniques 366–7
  - injection-related events 370–1
  - materials 363, **364–5**, 365–6
  - nodule formation 371
  - ‘potential face’ 362–3
  - vascular compromise 371
- color
  - additives in sunless tanning products 141
  - appraisal of facial foundation 173, 174
  - body washes 90
  - coordinates 177
  - matching 177
- color charts 49
- Color Index (CI) number 209
- color stabilizers, nail lacquer 209
- color standard chips 49
- coloration, sunless tanning products 141–2
- colored cosmetics
  - camouflage techniques 176–83
  - facial foundation 167–74
- coloring agents
  - lipsticks 187, **188**
  - nail polish 208–9
- combination gels, allergic reactions 60
- comedones 57
  - benzoyl peroxide treatment 489
  - salicylic acid treatment 491
- compartment syndrome, risk with liposuction 454
- complexion 167
  - history of makeup 167–9
- Complexion Analysis Software 49–50
- conditioners (hair) 225
  - after hair relaxing 253
  - allergic reactions 58–9
  - colored hair 234
  - rinse-off 121
- conditioning polymers, hair permanent waving 242
- confocal Raman microspectroscopy (CRS) 68–9
- consumers
  - facial moisturizer testing 128
  - understanding of body washes 90–1
- contact dermatitis 55–61
  - diagnosis 60
  - skin of color 30
  - treatment 60
  - see also* allergic contact dermatitis; irritant contact dermatitis
- contact urticaria 56, 57–8
- contouring *see* skin contouring techniques
- copper, UV damage protection 338
- corneocytes 3, 5, 6
  - cohesion 7
  - desquamation 8
  - dry lips 186
  - lip labial epidermis 185
  - maturation 8
  - melanin particles 7–8
  - visualization 10
- corneodesmosomes 5, 7
  - desquamation 10
- Corneometer® 10

## Index

- corneometry 127
- cornified envelope (CE) 5, 6
  - lipid-protein cross-links 5
- cortex 44, 45
- corticosteroids
  - anti-inflammatory action 286–7
  - eczema treatment 502
  - mode of action 286
  - psoriasis 508, 509, 510
  - topical
    - allergic reactions 59
    - atopic dermatitis 128
    - contact dermatitis treatment 60
- cosmeceuticals
  - anti-inflammatory actives 289
  - botanicals 269–79
  - growth factors 302–8
  - nutrients 335–40
  - peptides 296–7, 298, 299
  - polylactic acid fillers 373–6, 474
  - product development 273–4
  - proteins 293, 299–300
  - see also anti-inflammatory agents; antioxidants; hydroxyacids; retinoids; vitamin(s)
- cosmetic(s)
  - adverse skin reactions 55
  - allergic contact reactions 11
  - hypersensitivity reactions 55–6
  - product development 10–11
  - rosacea 498–9
  - skin irritation 11
- cosmetic actives
  - composition 62–3
  - delivery assessment 68–9
  - emulsions 63
  - formulation 63–4
  - molecular weight 62–3
  - natural 500–1
  - occlusion of skin 64
  - patch formulations 67
  - penetration enhancement 64–8
  - percutaneous delivery 62–9
  - rosacea 500–1
  - skin barrier 62
  - skin partition coefficient 64
  - transepidermal delivery 62
  - vehicle effect 63–5
- cosmetic intolerance syndrome 57
- cosmetic product evaluation
  - bio-instrumentation 47–8
  - non-invasive 47–54
    - digital photography 48–51
    - methods 48
- cosmetic surgery, lips 186
- CosmoDerm 364, 365, 367
  - hands 473
- CosmoPlast 364, 365, 367, 369
  - hands 473
- creams 71–4
  - active ingredients 73
  - composition 72–3
  - definition 71
  - elevated temperature testing 74
  - oil-in-water 72–3
  - stability 74
  - sunless tanning product delivery 140–1
  - water-in-oil 73
- critical wavelength method, UVA radiation 148
- cross-linking agents 353
- crystal products, antiperspirants 153
- C-tactile afferents 43
- curcumin 282–3, 284, 289
- curl, degree of 248
- cuticle remover 200
  - irritant reactions 203–4
- cyanoacrylate monomers 217, 218, 219
- cyclomethicone 506
- cyclo-oxygenase (COX) 287
- cyclo-oxygenase 2 (COX-2) inhibitors 287–8
- Cymetra 364, 365
- cysteine proteases 7
- cytokeratins, lip labial epidermis 184–5
- cytokines 285
  - aging reversal 304–5
  - anti-aging 307
  - skin function 304–5
- dandruff 115, 116
  - therapeutic shampoos 117, 120–1
  - year-round treatment 121
- deodorants 150–5
  - adverse effects 154–5
  - delivery systems 153–4
  - odor control 153
  - soap bars 79
- depigmentation
  - niacinamide 323
  - retinaldehyde 314–15
  - retinoids 313
  - vitamin B<sub>3</sub> 323
- dermabrasion 426–31
  - advanced technique 429–30
  - advantages 427
  - complications 430–1
  - disadvantages 427
  - Fitzpatrick skin types 428
  - full-face 429–30
  - indications 426–7
  - instrumentation 428
  - mechanism of action 426
  - patient selection 427
  - postoperative wound care 430
  - preoperative consultation 427–8
  - preoperative photographs 428
  - technique 428–30
- dermatomyositis, bovine collagen 366
- dermis 4
  - collagen 31
  - grenz zone 32–3
  - hydroxyacids effects 329
  - microdermabrasion effects 420
  - photoaging 14
  - skin of color 31
- desmosomes 4, 5
- desquamation 7, 8, 124
  - assessment 9–10
  - corneodesmosomes 10
  - pathogen protection mechanism 6
- detergent bars
  - non-soap 79
  - stratum corneum interactions 80–2
- detergents, synthetic see syndets/syndet bars
- diathesis factors, sensitive skin 23
- dibutyl phthalate 208
- diclofenac 287, 288
- diet 335–40
  - deficiency 335
- digital photography
  - cosmetic product evaluation 48–50
  - terminology 50–1
- dihydroxyacetone (DHA)
  - mechanism of action 139–40
  - moisturizers 142
  - processing 140
  - stability checks 140
  - storage 140
  - structure 140
  - sunscreen addition 140
  - sunless tanning products 139
  - vitiligo camouflage 179
- dimethicone 506
- dimethyl urea, nail hardening 211
- diode laser, long pulsed 435
- diode laser 1450 nm 410, 411, 414
- dirt, facial cleansing 101
- DNA, UV damage 7, 8
- dorsal horn 44
- double-chin formation 32
- Dove bar 79
- dry ice peel 378, 380
- dry skin
  - cleanser mildness 101
  - facial 123–4
  - flaking 124
  - hydroxyacids use 330, 332
  - lactic acid treatment 133
  - lips 186
  - moisturizer use 91
  - urea treatment 133
- dryness of skin 30
  - assessment 127
- D-squames 127
- dyes see hair dyes

- dyspigmentation 29  
 black skin 33  
 hydroxyacids 332  
*see also* hyperpigmentation;  
 hypopigmentation
- East Asian skin, UV irradiation 18
- eccrine glands 150, 151, 152
- eczema  
 etiology 502  
 facial moisturizers 128  
 hygiene 505–6  
 moisturizer use 128, 502–6  
 occupational 60  
 regimens 502–6  
 syndet use 505–6
- elastic fibers, photoaging 32
- elastic recovery time 31
- elasticity of skin 31  
 nutrient effects 339
- elastosis 32
- elevated temperature testing 74
- emollients 11, 73  
 botanicals **274**  
 cleansers 97  
 facial moisturizers 125, 126–7  
 hair styling aids 259, **260**  
 moisturizers 125
- emulsification, emollient/lathering  
 cleansers 97
- emulsifiers/emulsifying agents 71  
 cationic 72  
 creams 72  
 facial foundation 169  
 moisturizers 131  
 facial 125
- emulsions 71, 72  
 cosmetic actives 63  
 fluid facial foundation 169  
 hair 261–2, **263**  
 styling aids 259  
 moisturizers 504, 505  
 multivesicular **504**, 505  
 oil-in-water 73, 104, 131  
 sunscreen vehicles 147  
 water-in-oil 73, 131
- enhanced glycerol derivatives 136–7
- enkephalin 295
- environmental factors  
 irritants 57  
 sensitive skin 23
- environmental toxins, stratum corneum  
 protective function 7
- epidermal barrier 3–11  
 antimicrobial 6  
 building ingredients in cleansers 103  
 cosmetic product development 10–11  
 damage in cleansing 105  
 disruption 6  
 functions 5–8, 124  
 regulation 9  
 herbal product penetration 271–2  
 homeostasis 7, 8–9  
 immune protection 6  
 mechanical 6  
 microdermabrasion 418  
 oxidative stress 8  
 permeability 5–6  
 restoration by cosmetics 10–11  
 self-perceived sensitive skin 25  
 structural components 3, 4, 5  
 study methods 9–10  
 topical products 10  
 UV barrier 7–8  
 water evaporation 5–6
- epidermal nerves 25
- epidermis  
 hydroxyacids effects 329  
 photoaging 32–3  
 skin of color 29  
 thickening with retinoids 483–4  
 thickness measurement 10
- erbium:glass 1540 nm laser **410**, **411**,  
 413–14
- Er:YAG lasers 394  
 fractionated 396
- erythema  
 intense pulsed light laser 446  
 laser-assisted hair removal complication  
 437  
 UV-induced 447
- essential oils, acne treatment 492
- ethnic skin *see* skin of color
- ethyl acetate, nail polish remover  
 213
- etodolac 287
- eumelanin 27, 229
- eutectic blends 64
- Evolence® filler **365**, 366, 367
- exfoliants/exfoliation aids  
 body washes 90  
 chemical 481  
 mechanical 481
- exfoliation  
 antiaging 481, 482  
 facial cleansers 95, 96, 101
- extensibility of skin 31
- extracellular matrix (ECM), degradation  
 effects of UV irradiation 19
- extremozymes 300
- eye(s)  
 microdermabrasion side-effects 424  
 protection against laser beams 434
- eye cosmetics 190–6  
 history 190–1  
 microbiological contamination protection  
 195  
 safety/regulatory consideration 195
- virtual modeling 196  
*see also* mascara
- eyebrow ptosis with Botox treatment 349
- eyelashes  
 ailments 191  
 curling 195  
 digital simulation 196  
 extensions 194  
 false 193  
 growth stimulation 194, 196  
 perming 194  
 physiology 191  
 tinting 193–4  
 transplantation 194  
*see also* mascara
- eyelids  
 nail cosmetic allergic reactions 204  
 ptosis with Botox treatment 349–50  
 rejuvenation 441  
 tattooing 194
- eyeliners 194–5
- eyeshadow 194, 195
- face  
 ageing evaluation 362  
 full-face volume restoration 471  
 tapering of lower 470
- facial augmentation, collagen fillers 367–9
- facial cleansers 95–101  
 exfoliation 95, 96, 101  
 function 96–7  
 makeup removal 98, 101  
 mildness 101  
 pH 96  
 scrubs 98  
 selection 99–101  
 solvents 97  
 surfactants 96, 97  
 types 97–9
- facial cleansing  
 chemistry 96–7  
 dirt 101  
 form 100  
 friction 97  
 history 95–6  
 physical 97  
 ritual 100  
 skin problems 100–1  
 surfactants 96, 97
- facial foundation 167–74  
 antiwrinkle performance measurement  
 173  
 application 171–2  
 color appraisal 173, 174  
 color creation 170  
 compact 169–70  
 coverage 170–1  
 design 172  
 fillers 171, 172

## Index

- fluid 169
- formulation 169–71, 172
- history 167–9
- iron oxides 170
- manufacturing development 169
- moisturizing effect measurement 173
- performance 172–3
- pigments 170–1
- powders 170
- product categories **171**
- silicone oils 169
- facial moisturizers 123–8
  - dihydroxyacetone content 142
  - formulation 125
  - inflammatory dermatoses 128
  - ingredients 126–7
  - testing 127–8
- facial nerve, marginal mandibular branch 463–4
  - damage during liposuction 469–70
- facial skin
  - cell differentiation/maturation 124
  - dry 123–4
  - water content 124
- facial tissue sagging 32
- fast adapting (FA) receptors 39
- fat transfer, autologous 471
  - hand recontouring 473, **474**
- fern, golden 277
- ferulic acid with vitamins C and E 485, **486**
- feverfew 277
- fibroblasts
  - collagen I 297
  - collagen synthesis 16, 17
  - growth factor source 307
  - inflammatory mediator release 285
  - microdermabrasion 420
  - UV radiation effects 17
- fillers
  - allergic reactions 60
  - botulinum neurotoxin type A
    - combination 349, **350**
  - calcium hydroxylapatite 356–7, 358, 359–60
  - collagen 60, 361–72
  - facial foundation 171, 172
  - following radiofrequency treatment 441
  - hand 473
  - hyaluronic acid 352–5
    - persistence 354–5
  - polylactic acid 373–6
- fish oils, skin health **336**
- Fitzpatrick skin types, dermabrasion 428
- flaking, dry skin 124
- flavonoids 272
  - skin health **336**
  - topical 325–6
  - UV damage protection 338
- fluor-hydroxy pulse peel 381
- flushing
  - response to vitamin B<sub>3</sub> 323
  - rosacea 500
- foaming liquid cleansers **104**
- follicular inflammation 121
- follicular plugging 57
- foot, moisturization of skin 130–1
- foot moisturizers 130–8
  - commercially available **132**
  - lactate efficacy 133–4, 135
  - urea efficacy 133–4, 135
- forearm controlled application test (FCAT), soap and syndet bars 83, 84
- forehead
  - Botox treatment 344, 345, 346
  - brow ptosis 31
  - lateral brow lift 347
- foreign body reactions 56
- formaldehyde 211–12
  - allergy 58, 211
- formalin 211
- fractionated carbon dioxide laser
  - resurfacing 394–8, 399, 400–3, 404, 405–7
    - Ablative Affirm Carbon Dioxide resurfacing **396**, 402
    - Active and Deep FX Lumenis 396–8, 399, 400
    - anaesthetic 407
    - botulinum toxin neuromodulator 407
    - complications 407
    - Fractionated Pearl **396**, 406–7
    - Fraxil Re:Pair **396**, 398, 400
    - Lux 2940 **396**, 406
    - MedArt FrX **396**, 401–2
    - Mixto SX Slim Evolution **396**, 400–1
    - Mosaic Lutronic eCO<sub>2</sub> **396**, 402–3
    - Paxel **396**, 406
    - Pixel 2940 **396**, 405–6
    - Pixel Carbon Dioxide **396**, 401
    - postoperative treatment 407
    - preoperative treatment 407
    - procedures 407
    - Sciton ProFractional resurfacing **396**, 403, 404, 405
    - SmartXide DOT resurfacing **396**, 402
    - technique 407
  - Fractionated Pearl (Cutera) resurfacing **396**, 406–7
- fragrances
  - allergic reactions 58
  - allergy 111
  - body washes 90
  - cleansers 104
  - facial moisturizers 127
  - lipsticks 188
- Frankfurt plane 464
- Franz cell 68, 284
- Fraxil Re:Pair (Reliant) **396**, 398, 400
- free radical scavengers
  - retinoids 313
  - see also* antioxidants
- free radicals 281–2
  - aging theory 312–13
  - antioxidant protection against damage 282
- friction, facial cleansing 97
- gallic acid 328–9
- gel fillers 56
- gels/gelees
  - hair 258–9, 261, **263**
  - sunless tanning products 141
- genistein 486
- Gentlewaves<sup>®</sup> photomodulation 445, 446
- German chamomile 277, 492
- Ginseng, delivery 271
- glabella, Botox treatment 342, 344, 345, 346
- glabrous skin 38, 39
  - low threshold mechanoreceptors 41
  - structure 40
- gluconolactone 483, 491
- glutathione 294
- glycation 339
- glycerin
  - cleanser humectant 103
  - keratinocyte maturation 128
  - moisturizer humectant 125, 126
- glycerol 7
- glycerol monothioglycolate 242
- glycolic acid
  - acne treatment 490
  - antiaging 483
  - medium depth peel 384–5
    - microdermabrasion comparison 423
  - rosacea 501
- glycols 73
- glycosaminoglycans (GAGs) 319–20, 331
- glyoxal, nail hardening 211
- Goeckerman treatment for psoriasis 511
- golden fern 277
- golden mean 363
- granulation
  - medium depth chemical peel 388, 389
  - nail 204, 204
  - wound healing 303
- granuloma formation, collagen fillers 371
- grape products 277
- green tea, skin appearance 339
- grenz zone 32–3
- growth factors 302–8
  - aging reversal 304–5
  - delivery methods 307–8

- natural 306–7  
product quality 308  
risks 306  
skincare 304–5  
stem cell 307  
synthetic 307  
wound healing 303–4
- hair 33–5, 222–5  
African 263, 264  
aging 237–8  
biology 157–9  
bonds 248  
care of colored 233  
chemical structure 238–9  
color 224, 227  
  natural 229–30  
cortex 224  
curl 244  
  degree of 248  
  retention 258  
curliness spectrum 33, 34–5  
cuticle 223, 236, 237  
ethnic types 264  
eyelashes 191  
fiber 222–4, 236  
  water hydrophilicity 237  
geometry 236–7  
graying 229  
grooming 224–5  
growth 236, 433  
  anagen phase 157, 236, 433  
  catagen phase 157–8, 433  
  telogen phase 158, 433  
hydration 158, 161  
keratin 34, 35, 224  
loss 121  
medulla 224  
melanin 224, 229, 230  
peptide application 297, 298, 299  
physiology 222–4, 236, 256  
pigmentation 229–30  
properties 158–9  
racial differences 33–4  
shaft 157  
shape 33  
  stabilization 257  
shedding 236  
split ends 238  
structure 33–4, 248  
  stabilization 257  
terminal 33, 433  
thermal behavior 237  
water interaction 237  
waving 239, 240  
weathering 238  
wet setting 258
- hair bleaches 229, 232  
allergic reactions 59
- chemistry 230  
growth cycle 157–8
- hair cosmetics 222  
*see also* conditioners (hair); hair dyes;  
shampoos
- hair creams 261–2
- hair dyes 227–35  
advantages 231–2  
allergic reactions 59, 234  
application 232–3  
cancer risk 234  
care of colored hair 233  
chemistry 229–31  
couplers 231  
definition 227  
demi-permanent 228, 229, 232  
disadvantages 232  
fiber damage 233  
formulation 231, **232**, 233  
hair structure 233–4  
occupational safety 234  
oxidative dye formation 230–1  
permanent 59, 228–9, 232  
  chemistry 230–1  
  precursors 230  
  product types 227–9  
  regulation 234  
  safety 234  
  semi-permanent 228  
  sensitization 233, 234  
  skin sensitivity test 233, 234  
  temporary 228
- hair emulsions 261–2, **263**
- hair follicles 157, 222, 223–4  
biology 432–3  
innervation 158  
keratins 222, 223–4  
melanocytes 229  
peptide application 298
- hair gels 258–9, 261, **263**
- hair mousses 258–9, 261, **263**
- hair permanent waving 236–46  
acidic 243  
adverse reactions 245, 245, **246**  
alkaline perms 243  
alkalizing additives 242  
buffer salts 242  
carriers 242  
complexing agents 242  
conditioning polymers 242  
disulfide cleaving 239, 240  
ingredients 240–3  
neutral 243  
neutralizers 243  
opacifiers 243  
practise 243–4  
products 240–3  
reducing agents 240–1  
regulatory aspects 243
- safety 244–5  
solubilizing agents 243  
solutions 239  
steps **241**  
sulfite 243  
surfactants 242  
thermal waves 243  
thickeners 243  
types 240–3
- hair pomades 261–2
- hair relaxers 251–5  
application 253  
effects 253–4
- hair removal 156  
laser-assisted 432–7  
*see also* shaving
- hair setting lotions 258–9, 261
- hair spray gels 261, **263**
- hair straightening 248–55  
hydroxides 251–2  
reducing agents 250–1  
relaxers 251–5  
sulfites 251  
terminology **252**  
thermal processing 249–50  
thiol with heat 255
- hair styling 256–65  
consultations 264–5
- hair styling aids 258  
African hair 263–4  
applications 259–64  
clays 262  
curl retention 258  
definition 256  
emollients 259, **260**  
emulsions 259  
film-forming active ingredients 259  
formulations 258–9  
polymer formulations 258–9  
product forms 259–64  
silicone 262–3  
silicone pump sprays 262–3  
silicone serums 262–3  
smoothness improvement 257  
technologic developments 265  
uses 259–64  
volume improvement 257  
wax formulations 259  
waxes **260**, 262, **263**
- hairdressers, occupational hand eczema 60
- hairsprays 258–9, 259–61, **263**  
aerosol 259–60, 261  
formulation 260–1  
propellants 260–1  
pump 260  
spot welds 260
- hairy skin 38, 39, 41  
structure 40



## Index

- hand(s)
    - aging 473–9
    - microbiota 106–7, 110
    - moisturization of skin 130–1
    - pH 108
    - physiology 473
    - polylactic acid fillers 375
    - rejuvenation with collagen fillers 369
    - skin damage 108
    - volume restoration 473
    - washing 108
  - hand flora 107
    - resident 110
  - hand hygiene 107–8
    - compliance 108
    - effectiveness in community 110–11
    - guidelines 107–8
    - hospital epidemiology nosocomial studies 111
    - nail cosmetics 206
  - hand moisturizers 130–8
    - commercially available **132**
    - lactate efficacy 133, 134
    - urea efficacy 133, 134
  - hand recontouring
    - autologous fat 473, **474**
    - calcium hydroxylapatite 473–9
      - adverse events 477
      - injection technique 474–7
      - lidocaine 474–5, 478–9
      - post-injection hand massage 475–6
      - post-treatment care 476–7
      - results 477, 478
  - hand sanitizers 106–12
    - alcohol-based 108
      - safety 111
    - efficacy 108–10
    - formulations 112
    - safety 111–12
    - skin irritation 111
  - hand washes 106–12
    - efficacy 108–10
    - formulations 112
    - safety 111–12
    - skin irritation 111
    - in vitro* measurement 108–9
    - in vivo* models 109
  - headache, Botox treatment side-effect 350
  - heating device, electronic 492
  - heliodermatitis 14
  - henna, allergic reaction 59
  - herbal extracts 270
  - herb-based products 269–79
    - active ingredients 270
    - cross-reactivity with other herbs 271
    - delivery of therapeutic concentration 271
    - effectiveness 271–2
    - extraction methods 270
    - mechanism of action 272
    - quality control 270–1
    - regulation 269
    - safety 271
    - secondary metabolites 272, 273
    - variability 270
  - herbs
    - esthetic utility 273–9
    - wildcrafting 270
  - herpes simplex virus (HSV)
    - antiviral prophylaxis 427–8
    - dermabrasion 427–8, 431
    - pretreatment for medium-depth chemical peel 387
  - hips, liposuction indications 453–4
  - Hispanic skin
    - aging 32
    - self-perceived sensitive skin 24, 25
  - homeostasis, epidermal barrier 7, 8–9
  - homogenous gels, allergic reactions 60
  - humectants 73
    - cleansers 103
    - facial moisturizers 125, 126
    - moisturizers 125, 131, **132**
  - hyaluronic acid fillers 352–5, **474**
    - chemical composition 352–3
    - collagen stimulation 354–5
    - complications 354
    - concentration 353
    - cross-linking 353
    - indications 353
    - injection techniques 354
    - persistence 354–5
    - properties 352–3
  - hyaluronan 313–14, 315
  - hydration of hair 158, 161
  - hydration of skin 6–7, 9, 124
    - measurement 10
    - microdermabrasion 418
    - panthenol effects 323
    - surface 124
  - hydrocortisone, psoriasis 508, 509, 510
  - hydrogen peroxide 230, 231
    - allergic reaction 59
    - hair structure alteration 232
    - regulatory aspects 243
  - hydrophilic substances, delivery through sweat glands 62
  - hydroquinone, allergic reactions 58
  - hydroxide hair straighteners 251–2
  - hydroxyacids 327–33
    - antiaging 483, **486**
    - antioxidant 329–30
    - biological properties 329–30
    - chemical peels 377–8
    - clinical uses 330, 331, 332–3
    - efficacy 483
    - gel matrix formation 329
  - groups 327–9
  - matrix metalloproteinase inhibition 330
  - natural occurrence 327–9
  - physicochemical properties 329–30
  - sensory responses 330
  - skin effects 330, **331**
  - sun sensitivity 330
  - topical drug synergy 333
  - water binding 329
  - wrinkle treatment 332, 333
- hyperhidrosis 155
    - Botox use for palmar 342
  - hyperkeratinization, hydroxyacids use 330, 332
  - hyperpigmentation
    - black skin 33
    - dermabrasion postoperative 431
    - laser-assisted hair removal complication 437
    - microdermabrasion 421
      - side-effects 424
    - periorbital 179
    - postinflammatory 29
  - hypersensitivity reactions 55–6
    - collagen fillers 370–1
    - diagnosis 60
    - immediate (type I) 56, 58
  - hyponychium 198–9
  - hypopigmentation
    - dermabrasion postoperative 431
    - laser-assisted hair removal complication 437
    - postinflammatory 29
  - ibuprofen 287
  - immune protection, epidermal barrier 6
  - immuno-allergologic pattern of sensitive skin 23
  - immunoglobulin E (IgE) antibodies, allergens 60
  - immunomodulators 288–9
  - immunosuppressants 60
  - immunosuppression 20
  - indomethacin 287
    - nano-encapsulated 66
  - induration, neck liposuction 468
  - infections/infectious diseases
    - artificial nails 220
    - collagen fillers 371–2
    - epidemiology 106
    - epidermal barrier for pathogens 6
    - hand hygiene efficacy 111
    - nails 204–5, 205
      - staining 220
    - transmission 106
  - inflammation
    - acute 284, 285
    - chronic 284, 285–6

- follicular 121
- foreign body reactions 56
- photoaging 14
- pigmentation effects 29
- prescription medicines 286–90
- process 284–6
- proteolytic enzyme release 302
- reactive oxygen species release 302
- inflammatory mediators 285
- inflammatory responses, immune
  - cell-mediated 285
- informed consent
  - Jessner's solution medium depth peel 386
  - liposuction 458
- infrared light devices **410, 411**, 414–15
- injectables, allergic reactions 60
- integrins 16
- intense pulsed light (IPL), rosacea
  - treatment 500
- intense pulsed light (IPL) laser **410, 411**, 412
  - erythema 446
  - hair removal 436, 437
- intensity-modulation radiation treatments (IMRT) 446–7
- intercellular adhesion molecules (ICAM) 285
- inter-corneocyte lipids 5
- interleukins, skin damage 302
- iontophoresis 68
- iron oxides, facial foundation 170
- irritant contact dermatitis 55
  - allergic contact dermatitis differential diagnosis 56
  - keratolytics 510
  - skin of color 30
- irritants 56–7
  - environmental factors 57
  - skin barrier function assessment 127–8
- irritation
  - antiperspirants 154
  - benzoyl peroxide-induced 490
  - cosmetics 11
  - deodorants 154
  - hand washes/sanitizers 111
  - keratolytics 510
  - nail cosmetics 203–4
  - panthenol protective effects 323
  - retinoid induction 310, 321
  - shaving 158
  - subjective 57
  - vitamin A 321
- Isologen **364**, 365
- isopropyl alcohol, waterless cleansers 104
- isotretinoin 493
- itch 42–3
- Jessner's solution 378–9
  - medium depth peel 384, **385**, 389, 390, 391
  - informed consent 386
  - microdermabrasion comparison 423
  - technique 386
- jowling 32
- jowls 463
  - liposuction 467, 468
  - indications 455–6
- jugular vein, external 464
- Juvéderm filler 353
- keratin
  - hair 34, 35, 224
  - hair cuticle 223
  - hair follicles 222, 223–4
  - nail granulations 204, 204
  - nail plate 199
- keratin chain interactions 257
- keratinocytes 3, 5
  - differentiation 8
  - epidermal barrier disruption 6
  - facial skin 123
  - glycerin in maturation 128
  - growth factor source 307
  - immune function 6
  - inflammatory mediator release 285
  - psoriasis 507, 508
  - UV radiation effects 17
  - pigmentation induction 28
- keratohyalin granules 5
- keratolysis
  - epidermal 483
  - exfoliants 481
- keratolytics
  - contact dermatitis 510
  - irritation 510
  - psoriasis 508, 509, 509–10, 511
- keratoses, hydroxyacids 332
- ketoconazole 117, **118**
- ketoprofen 287
- kinetin 307
- kytorphin 295, 299
- labeling, sunless tanning products 141
- lactic acid
  - acne treatment 490
  - antiaging 483
  - dry skin treatment 133
  - psoriasis 508, 509, 509
  - see also* sodium lactate
- lactic acid stinging test 23, **25**
- lactobionic acid 329–30, 483, 491
- lamellar granules (bodies) 5
- Langerhans cells 4, 6
  - photoaging 32
- lanolin, moisturizer occlusive 126
- lanugo 433
- laser techniques
  - fractionated 394–8, 399, 400–3, 404, 405–7
  - liposuction 459–60
  - non-ablative 409–16
  - types 409, **410**, 410–15
  - see also* carbon dioxide laser resurfacing
- laser-assisted hair removal 432–7
  - complications 436–7
  - concepts 433
  - eye protection 434
  - postoperative management 436
  - preoperative management 433–4
  - radiofrequency combinations 436
  - techniques 434–6
- laser-assisted liposuction 459–60
- latex, contact urticaria 58
- lathering facial cleansers 97
- lecithin 72
- LED photomodulation 444–8
  - anti-inflammatory actions 446–8
  - clinical applications 445–6
  - retina protection 447
- leukocytes, inflammatory process 285
- levator labii superioris alequae nasi (LLSAN) 348
- licochalcone A 500
- lidocaine, calcium hydroxylapatite hand
  - recontouring 474–5, 478–9
- light energy device, bipolar radiofrequency 441–2
- light therapy, rosacea 500
- lighteners
  - botanicals **276**
  - vitamin C 324
- lip(s) 184–6
  - aging 185–6
  - cheilitis 186
  - cosmetic surgery 186
  - dermis 185
  - dryness 186
  - histology 185
  - hyaluronic acid fillers 353
  - labial epidermis 184–5
  - lamina propria 185
  - pigmentation 186
  - sensitivity to environment 185
  - topology 185
  - vermillion zone 184, 185
  - see also* lipstick
- lip brilliances 188
- lip glosses 188
- lipid(s)
  - desquamation 8
  - facial moisturizer emollients 126–7
  - hair 238
  - inter-corneocyte 5
  - nail plate 200

## Index

- pH effects 82
- sebaceous 115
- soap bar use 80
- stratum corneum 82
- surfactant interactions 105
- synthesis 8
- topically applied 11
- UV damage protection 338
- lipid peroxidation 281–2
- lipid-free cleansers 104
- alpha-lipoic acid 485, **486**
- liporeceptors 9
- liposomes 271
  - moisturizers 504–5
  - penetration enhancement 65
- liposuction 450–60
  - advantages 451
  - complications 451–2, 458–9
  - disadvantages 451–2
  - endpoint determination 457
  - equipment 457–8
  - fanning 467
  - feathering 468
  - history 450
  - indications 452–6
  - informed consent 458
  - intraoperative phase calculations 458–9
  - jowls 467, 468
    - indications 455–6
  - laser-assisted 459–60
  - neck 463–71
    - indications 455–6
  - operating technique 457
  - postoperative phase complications 459
  - preoperative phase complications 458
  - skin contour 451
  - skin physiology 451
  - tumescent local anesthesia 450, 451–2
    - neck 466–7
    - technique 456–7
  - tunneling 468
- lipstick 184, 186–8
  - active ingredients 188
  - antioxidants 187–8
  - formulation 186–8
  - oils 187
  - pigments 187
  - preservatives 187–8
  - texturing agents 187
- liver X receptor (LXR) 9
- local anaesthetics, allergic reactions 59
- long pulsed alexandrite laser 435
- long pulsed diode laser 435
- long pulsed ruby laser 434–5
- lotions 71–4
  - definition 71
  - sunless tanning product delivery 140–1
- low density lipoprotein (LDL), free radical damage 282
- low threshold mechanoreceptors (LTMs) 39, 41
- lutein 337, 339
- Lux 2940 (Palomar) resurfacing **396**, 406
- lycopene 337, 339
- lymphoma, immunomodulator association 288
- makeup
  - history 167–9
  - removal
    - facial cleanser selection 101
    - toners 98
  - shades 172
  - skin color 172
  - see also* eye cosmetics; facial foundation; lipstick
- Malassezia* 115, 117
- maltobionic acid 329
- skin effects **331**
- structure 329
- wrinkle treatment 333
- mandibular border redefinition 349
- manicure 201–2, 202
  - practice 206
- marginal mandibular branch of facial nerve 463–4
  - damage during liposuction 469–70
- mascara 190–1, 191–3
  - application 195, 196
  - applicator technology 192–3, 194, 196
  - composition 192
- masks, peel-off/wash-off 481
- masseter muscle, hypertrophy 349
- mast cells, skin of color 30
- matrikines 295, 297, 298, 299
- matrix metalloproteinases (MMPs) 19
  - activation 483
  - collagen degradation stimulation 16
  - inflammatory process 286
  - inhibition by hydroxyacids 330
  - LED photomodulation 444–5
  - skin damage 302
  - sunscreen regimens 127
- mechanoreceptive afferents 39, 41
- MedArt FrX laser resurfacing **396**, 401–2
- Meissner corpuscles 39, 41
- meladine, hair removal 436
- melanin 7–8, 27
  - hair cortex 224, 229, 230
  - laser-assisted hair removal 433
  - oxidative degradation 230
  - photoprotection in skin of color 33
  - postinflammatory hyperpigmentation 29
- melanocortin-1 receptor (MC1R) 28
- melanocytes 4, 27–8
  - hair follicles 229
- melanocyte-stimulating hormone (MSH) 295
- alpha-melanocyte-stimulating hormone (MSH) 28
- melanogenesis 28, 295
- melanosomes 27–8
- melasma, camouflage makeup 180
- Merkel disks 39, 41
- mesolabial fold, hyaluronic acid fillers 353
- mesotherapy, growth factor delivery 307–8
- methacrylate polymers
  - artificial nails 215–16
  - nail resins 208
- methyl ethyl ketone (MEK)
  - artificial nail removal 219
  - nail polish remover 213
- methyl methacrylate monomers 220
- methylacrylates 217
- methylene glycol, allergy 211
- metronidazole 500
- mexoryl sunscreen 481, 482
- microbial resistance 111–12
- microdermabrasion 418–24
  - advantages 423–4
  - chemical peel comparison 422–3
  - complications 424
  - contraindications 420
  - dermis effects 420
  - disadvantages 423–4
  - histopathologic changes 418–19
  - indications 420–2
  - molecular effects 419
  - procedure 418
  - side-effects 424
  - skin physiologic changes 418
  - trichloroacetic acid combination 421
- microdermabrasion units 418, **419**
- microdialysis 68, 69
- microemulsions 271
- microneedles 67–8
- microvasculature of skin 15
- milk thistle 277–8
- minerals, skin health **336**
- mists, no-rub 142
- mitochondrial ATP, photodynamic therapy 447–8
- mitogen-activated protein (MAP) kinase signaling pathway 302
- Mixto SX Slim Evolution **396**, 400–1
- Mohs surgery, dermabrasion 427, 429
- moisturization of skin 6–7
  - body washes 91–2, 93
  - cosmetic products 10–11
  - facial foundation effect measurement 173
  - foot 130–1
  - hand 130–1
  - sunless tanning products 142
  - ultrastructural effects 133

- moisturizers 10–11  
 after shaving 162  
 allergic reactions 58  
 aquaporins 135–6, 137  
 body washes 89–91  
 delivery systems 503–5  
 dihydroxyacetone content 142  
 dry skin 91  
 eczema treatment 502–6  
 emulsifiers 125, 131  
 emulsions 504  
 enhanced glycerol derivatives 136–7  
 facial 123–8, 142  
 foot 130–8  
 formulation 131  
 hand 130–8  
 liposomes 504–5  
 mechanism of action 502–3  
 multivesicular emulsions **504**, 505  
 nanoemulsions **504**, 505  
 next-generation 135–7  
 niosomes 504, 505  
 nutrient effects 339  
 ointments 504  
 psoriasis 508, **509**, 509–10  
 rosacea 497, **498**  
 serums 504  
 sunscreen containing 506  
 technology 131  
 treatment 505–6  
*see also* sunless tanning products;  
 sunscreens  
 monocytes, inflammatory process 285  
 Mosaic Lutronic eCO<sub>2</sub> resurfacing **396**,  
 402–3  
 mucilages 272  
 multivesicular emulsions **504**, 505  
 mushrooms 278  
 myristoyl-nicotinate 323
- nail(s) 197–205  
 acrylic extensions **200**, 215–16  
 artificial (*see* nail cosmetic prostheses)  
 brittleness 200, 201, 202, 203  
 buffing 203  
 calcium content 199  
 care 202–3  
 composition 199–200  
 cuticle remover **200**  
 irritant reactions 203–4  
 discoloration **198**, 204, 209  
 dyschromia **198**  
 dystrophy 203  
 filing 202–3  
 flexibility 200, 201, 202, 203  
 grooming 201–2, 202–4  
 hardening 210–11  
 infections 204–5, 205  
 artificial nails 220  
 keratin granulations 204, 204  
 manicure 202, 202  
 painting 207  
 pedicure 202  
 physiology 199–200, 201, 202  
 plasticizers 200  
 signs **198**  
 staining 209  
 infections 220  
 thickness 202  
 trauma 203  
 trimming 202–3  
 nail basecoats 208  
 nail bed 199  
 changes **198**  
 nail cosmetic prostheses 215–20  
 adverse reactions 219–20  
 equipment **218**  
 infections 220  
 liquid and powder systems 215–16,  
 217  
 nail damage 220  
 nail surface preparation 216  
 nail wraps **216**, 217–19  
 rebalancing 219  
 removal 219  
 training for technicians 220  
 UV gels 216–17  
 nail cosmetics **200**  
 allergic reactions 59, 203, 204  
 application 206  
 colored 206–12 (*see also* nail polish)  
 hygiene 206  
 irritant reactions 203–4  
 procedures 204  
 safe use **205**  
 nail folds 197–8  
 nail hardener **200**, 206, **207**, 210–11  
 nail matrix 197, 198  
 nail plate 197, 199  
 lipids 200  
 surface filing 203  
 thinning 204  
 water content 200  
 nail polish (lacquer) **200**, 206–7, 206–12  
 antifungal agents 209  
 brittle nails 203  
 color stabilizers 209  
 colorants 208–9  
 ingredients 206–8, **209**  
 plasticizers 208  
 preservatives 209–10  
 solvents 208  
 thixotropic agents 209  
 UV curable **207**, 212, 213  
 yellow staining 204  
 nail polish remover **200**, 212–13  
 irritant reactions 203–4  
 nail resins 208  
 nail surface dehydrators 216  
 adhesion promoters 216  
 nail topcoats 208, 209  
 nail unit  
 anatomy 197–9  
 breaks in integrity 204  
 lines 198  
 nail wraps **216**, 217–19  
 nanocapsules 66  
 nanoemulsions 271, **504**, 505  
 nanosomes 271  
 naproxen 287  
 nasolabial fold  
 collagen filler injection 368  
 hyaluronic acid fillers 353  
 softening 348  
 natural actives 500–1  
*see also* cosmetic actives  
 natural moisturizing factor (NMF) 5, 6–7,  
 131, 133, 503  
 amino acids 292  
 composition 131  
 epidermal barrier 9  
 Nd:YAG 1064 nm laser  
 hair removal 435  
 Q-switched **410**, **411**, 413  
 Nd:YAG 1320 nm laser **410**, **411**, 412  
 neck  
 anatomy 463–4  
 liposuction 463–71  
 advanced/ancillary techniques 470–1  
 anesthesia 466–7  
 complications 468–70  
 consultation 463  
 ethical considerations 464  
 fat augmentation 471  
 French tape application 468  
 indications 455–6  
 induration 468  
 overresection 470  
 patient selection 464–5  
 physical examination 463  
 postoperative course 468  
 preoperative markings 466, 467, 468  
 procedure 466–8  
 standard operative techniques 467–8  
 submental fold development 470  
 tapering of lower face 470  
 skin retraction 468  
 neuropeptides 294–5, 299  
 neutralizers, camouflage makeup 177  
 Neutrogena soap bar 78–9  
 neutrophils, inflammatory process 285  
 niacinamide (nicotinamide) 321  
 depigmentation 323  
 formulation 323  
 mechanisms of action 322–3  
 structure 322  
 topical effects 323

## Index

- nicotinamide 493
- nicotinate esters 321
  - formulation 323
- nicotinic acid 321
  - formulation 323
  - mechanisms of action 322–3
- niosomes
  - moisturizers 504, 505
  - penetration enhancement 65–6
- nitrocellulose, nail resins 208
- nociception 42–3
- non-steroidal anti-inflammatory drugs (NSAIDs) 287–8
- nuclear factor of activated T cells (NFAT) 288
- nuclear factor- $\kappa$ B (NF $\kappa$ B) 283
  - corticosteroid mechanism of action 286, 287
  - microdermabrasion effects 419
  - skin damage 302
- nutrients 335–40
  - appearance improvement of skin 338–9
  - dermatological disorder effects 339–40
  - moisture/elasticity of skin 339
  - UV-induced damage protection 335, **336**, 337–8
  - wound healing 339–40
- oat products 278
- occlusion of skin 64
- occlusives
  - facial moisturizers 125, 126
  - moisturizers 125, 131, **132**
- occupational hand eczema 60
- occupational safety, hair dyes 234
- octopirox 117, **118**
- odor control 153
- oils, lipsticks 187
- ointments 71–4
  - composition 73–4
  - definition 71–2
  - elevated temperature testing 74
  - moisturizers 504
  - natural 73–4
  - psoriasis 509
  - semi-solid 63
  - stability 74
- omega-3 fatty acids, skin health **336**
- onycholysis **198**, 199, 203, 204
- onychomycosis 203
- onychorrhexis **198**
- onychoschizia **198**, 204
- opacifiers, hair permanent waving 243
- optical coherence tomography (OCT) 81
- optical profilometry, wrinkles 51–2, 53
- oral supplements 335–40
- oxidative stress, epidermal barrier 8
- 4-oxoretinoids 309, 315
- oxygen radical absorbance capacity (ORAC) assay 282
- oxytalan fibers 32
- Pacinian corpuscles 39, 41
- pain fibers, dorsal horn entry 44
- pain primary afferents 44
- pain sensation 42–3
- panthenol 323–4
- pantothenic acid 323
- para-toluenediamine (pTD) 234
- paronychia **198**, 204
- patch test antigens, skin of color 30
- patch testing, contact dermatitis 60
- patches, penetration enhancement 67
- pathogens, epidermal barrier 6
- Paxel (Wavelight) resurfacing **396**, 406
- Pears soap 78
- pedicure 202
- peeling agents
  - hydroxyacids 332–3
  - see also* chemical peels
- penetration enhancement 64–8
  - devices 66–8
  - vectors 65–6
- penetration enhancers 65
- Penfield's somatosensory homunculus 45
- peptides
  - acylation 296
  - analysis 296
  - antiaging applications 296–7, 298, 299
  - antioxidant 294
  - biological functions 293–5
  - cost 296
  - definition 292–3
  - lipophilic chain attachment 295–6
  - mechanism of action 293–4
  - skin penetration 295–6
  - stability 296
  - toxicity 296
  - use in cosmetics 295–6
- percutaneous absorption 64
- percutaneous delivery of cosmetic actives 62–9
- perfume
  - lipsticks 188
  - see also* fragrances
- periocular fine lines, assessment 51–2
- perioral lines, Botox treatment 348
- periorbital injection, Botox 346–7
- peripheral nervous system 38–9, 40, 41–3
  - pain 42–3
  - pleasure sensation 43
  - temperature sensing 41–2
  - touch 38–9, 40, 41
- Perlane filler 353
- permanent hair dyes 59
- peroxisome proliferator activator receptor (PPAR) 9
- personal care products
  - antiperspirants 150–5
  - blade shaving 156–62
  - deodorants 150–5
- personal cleansers 88–94
- petrolatum
  - moisturizer occlusive 126, 506
  - ointments 73, **74**
  - white 506
- phagocytes 6
- phenolics 272, 283
- phenylalanine 293
- p*-phenylenediamine (PPD) 59, 234
- pheomelanin 27, 229
- photoaging 13–20
  - antioxidants in prevention 19–20
  - definition 13
  - dermis 14
  - epidermis 32–3
  - ethnic skin 18, 32–3
  - histopathology 32–3
  - hydroxyacids 332
  - immunosuppression 20
  - inherent defense mechanisms 20
  - mechanism 127
  - medium depth chemical peel 390
  - microdermabrasion 422
  - molecular mechanisms 15–16, 17
  - neck liposuction 465
  - pathophysiology 409
  - physiology 13–15
  - prevention 18–20, 127
  - retinoids 19, 483–4
  - reversal **486**
  - skin microvasculature 15
  - sun protection 18–19
  - UV stimulation 14–16, 17
  - vitamin E in reversal 484
  - see also* antiaging *entries*
- photodynamic therapy 447–8
  - hair removal 436
- photoepilation 432–7
- photography 48–51
  - cosmetic product evaluation 48–50
  - cross-polarized 50, 51
  - guide 51
  - polarized 50, 51
  - UV fluorescence 50–1
  - UV reflectance 50, 51
  - visible light 50
- photomodulation 444–8
- photoprotection
  - botanicals **276**
  - facial moisturizers 127
  - nutrients 335, 337–8
- photorejuvenation 444
  - LED photomodulation 445–6
- photosensitivity reactions, retinoids 57
- phototherapy, psoriasis 510–11

- photothermolysis, laser-assisted hair removal 433  
 phytokinins 307  
 phytosomes 271  
 phytosteroids 272  
 pigmentation 27–35  
   dryness of skin 30  
   hair 229–30  
   inflammation effects 29  
   lips 186  
   melanosomes 28  
   retinoid effects 313  
   *see also* depigmentation; dyspigmentation; hyperpigmentation; hypopigmentation  
 pigments  
   facial foundation 170–1  
   lipsticks 188  
 pilosebaceous unit 157  
 pimecrolimus 288  
   eczema treatment 502  
 pineapple 276  
 Pixel 2940 (Alma) resurfacing **396**, 405–6  
 Pixel Carbon Dioxide (Alma Lasers) **396**, 401  
 plant alkaloids 272  
 plant extracts, skin barrier building 103  
 plasticizers, nail lacquers 208  
 platysma muscle 463, 464  
   banding 463, 465, 468, 470  
   Botox treatment 349  
 platysmaplasty 470  
 pleasure sensation 43  
 polyhydroxyacids 328, 329  
   acne treatment 491  
   antiaging 483  
   antioxidant 329  
   rosacea 501  
   water binding 329  
 polylactic acid fillers 373–6, **474**  
   advantages 373–4  
   anaesthetic 373  
   complications 375–6  
   cross-hatching technique 374  
   disadvantages 373–4  
   fan technique 374  
   formulation 373  
   hands 375  
   injection techniques 374–5  
   tear troughs 375  
 polypeptides, cleansers 480  
 polyphenolics 283  
   skin health **336**  
 pomades 261–2  
 pomegranate 278  
 pore cleansing, toners 98  
 postinflammatory hyperpigmentation (PIH) 29  
 postinflammatory hypopigmentation 29  
 potassium alum 153  
 potassium titanyl phosphate (KTP) 532nm laser 410, 411  
 preservatives  
   allergic reactions 58  
   cleansers 104  
   cleansing bars 79  
   eye cosmetics 195  
   facial moisturizers 127  
   lipsticks 188  
   nail lacquer 209–10  
   vitamin E 325  
 prick tests 60  
 primary sensory afferents **39**, 41  
 procollagen  
   induction by trans-retinoic acid 19  
   inhibition by UV radiation 16  
 pro-opiomelanocortin 295  
*Propionibacterium acnes* 489, 492  
   UV fluorescence photography 50  
 prostaglandin analogs, eyelash growth stimulation 194  
 prostaglandin E<sub>2</sub> 283  
   NSAID mechanism of action 287–8  
   skin cancer association 288  
 protease-activated receptor-2 (PAR-2) 28  
 proteases  
   desquamation 8  
   stratum corneum 7  
 protection of skin  
   antiaging regimen 481–3  
   *see also* antiaging products; sunscreens  
 proteins  
   chain 293  
   cosmetic use 299–300  
   definition 293  
   hair 238, 239  
   hydrolysis 296  
 proteolytic enzymes 7, 299–300  
   inflammation 302  
 pseudofolliculitis barbae 162  
 psoriasis 507  
   dermatology patients 508  
   education 508  
   flares 508  
   genetics 507–8  
   Goeckerman treatment 511  
   hydrocortisone 508, 509, 510  
   keratolytics 508, 509, 509–10, 511  
   lactic acid 508, 509, 509  
   moisturizers 508, 509, 509–10  
   nail dystrophy 203  
   ointments 509  
   over-the-counter medications 508–9, 511  
   phototherapy 510–11  
   physiology 507–8  
   regimens 507–12  
   salicylic acid 508, 509, 509  
   self-treatment 508  
   stress factors 508  
   sun exposure 510  
   tanning beds 510–11  
   tar 508, 509, 510, 511  
   topical medication 508–9  
   treatment compliance 508–9  
   urea 508, 509, 509  
   UV light therapy 510–11  
 pulsed dye laser 410–12  
 pustular eruptions 57  
 PUVA (psoralen and UVA) 510  
 pycnogenol 278  
 pyramid of age 362–3  
 pyrithione zinc (PTZ) 117, **118**  
   chemical availability optimization 119  
   distribution on scalp 118–19  
   particle size 118, 119  
   types 118  
 pyruvic acid chemical peel 378  
 quality of life, camouflage makeup 182  
 quercetin 289  
  
 radiation dermatitis, LED photomodulation 446–7  
 Radiesse® filler 356  
   hands 474–9  
   indications 359  
   *see also* calcium hydroxylapatite  
 radio allergeo-sorbent tests (RASTs) 60  
 radiofrequency  
   bipolar 441–2  
   and light 441–2  
   and unipolar 442  
   and vacuum 442  
   monopolar 439–41  
   complications 440  
   eyelid rejuvenation 441  
   unipolar 442  
 radiofrequency devices  
   bipolar 439, **440**  
   monopolar 439, **440**  
   skin tightening 439–42  
 radiofrequency non-ablative resurfacing devices **410**, **411**, 415  
 Raking Light Optical Profilometry (RLOP) 48  
   wrinkle improvement detection 51–2, 53  
 razors  
   blade edge 160  
   blade spacing 160  
   cutthroat 156  
   development 157  
   double-edge 159  
   electric 157  
   geometry control 159–60  
   lubricating strips 160–1  
   safety 156

## Index

- shaving 159–61
- skin guard 161
- system 159–60
- reactive oxygen species (ROS)
  - inflammation 302
  - photochemical generation 15
  - UVA-induced 14, 15–16
- reactivity of skin, skin of color 30
- reducing agents
  - hair permanent waving 241–2
  - hair straightening 250–1
- reducing sugars, sunless tanning products 140
- reflectance confocal microscopy (RCM) 30
- remodeling of skin 303
- resorcinol, sulfur combination 491
- resorcinol peel **378**, 380
- Restylane filler 353, 354
- resurfacing
  - carbon dioxide laser 393–408
  - dermabrasion 426–31
  - following neck liposuction 471
  - microdermabrasion 418–24
  - non-ablative 409–16
  - see also* chemical peels; fractionated carbon dioxide laser resurfacing; peeling agents
- retina protection, LED photomodulation 447
- retinaldehyde 319
  - acne treatment 491
  - antiaging 484
  - antibacterial activity 312
  - cosmeceuticals 314–15
  - depigmentation 313, 314–15
  - structure 320
  - wrinkle treatment 314, 321
- retinoic acid 483, **486**
  - irritation induction 310
- all-*trans*-retinoic acid, structure 320
- retinoic acid peel 423
- retinoic acid receptors (RAR) 319, 483
- retinoic X receptors (RXR) 319, 483
- retinoid dermatitis 484
- retinoids 309–15
  - acne treatment 491
  - antiaging 483–4
  - antioxidants 312–13
  - cosmeceutical 309, 314–15
  - depigmentation 313
  - epidermal thickening 483–4
  - formulation 321
  - free radical scavengers 313
  - genomic effects 310, 312
  - hyaluronan 313–14, 315
  - intracrine proligand concept 309–10, 311, 312–13
  - irritation 310, 321
  - photoaging prevention 19, 483–4
  - photobiology 312
  - photosensitivity reactions 57
  - pigmentation effects 313
  - stability 321
  - structures 311
  - therapeutic 309
  - topical effects 320–1
  - wrinkle treatment 320–1
- retinol 309
  - acne treatment 491
  - antiaging 484
  - cosmeceuticals 313
  - stratum corneum protection 313
  - structure 320
  - topical 319
  - wrinkle treatment 320–1
  - see also* vitamin A
- retinyl esters 309, 313
  - cosmeceuticals 314
  - topical 319, 321
- retinyl palmitate 312, 313
  - acne treatment 491
  - structure 320
  - wrinkle treatment 321
- retinyl propionate
  - acne treatment 491
  - wrinkle treatment 320, 321
- rhinophyma, dermabrasion 427
- rhytidectomy 470
- rosacea
  - alpha-hydroxyacids 500–1
  - antibiotic therapy 499–500
  - azelaic acid 501
  - Chrysanthellum indicum* 500
  - cleansers 497, **498**
  - cosmetics 498–9
  - erythemotelangiectatic 495, 497
  - flare 496, 499
  - flushing 500
  - glycolic acid 501
  - licochalcone A 500
  - light therapies 500
  - mild cleansing 84–5, 86
  - moisturizers 497, **498**
  - natural actives 500–1
  - ocular 495, 497
  - over-the-counter products 496–9
  - papulopustular 495, 497, 499
  - phymatous 495, 497
  - physiology 495, 496
  - polyhydroxyacids 501
  - prescription agents 499–500
  - regimens 495–501
  - subtypes 495, 497
  - sun protection 496, 499
  - sunscreens 499
  - topical therapy 500
  - vitamin C 500
- ruby laser, long-pulsed 434–5
- Ruffini endings 39, 41
- safety
  - eye cosmetics 195
  - occupational for hair dyes 234
- salicylic acid 118, 328–9
  - acne treatment 490–1
  - antiaging 483
  - psoriasis 508, 509, 509
- salicylic acid peel **378**, 379, 382
- salicylism 379, 491
- sarcosinates, facial cleansers 97
- scalp 115, 116
  - sebaceous lipids 115
- scalp care products 118–20
- scars
  - abrasion 427
  - chemical reconstruction 381–2
  - formation with dermabrasion 431
  - microdermabrasion 421
  - postsurgical 179
- SciCon ratio 124
- Sciton ProFractional resurfacing **396**, 403, 404, 405
- scrub particles 98
- scrubs
  - acne treatment 492
  - facial cleansers 98
- Sculptra® filler 373
- sebaceous lipids, scalp 115
- sebaceous oil, cleaning of excess 100
- seborrheic dermatitis *see* dandruff
- secondary metabolites, herb-based products 272, 273
- selenium 339
  - antiaging 485, **486**
  - UV damage protection 338
- selenium sulfide 117, **118**
- L-selenomethionine 485, **486**
- self-perceived sensitive skin (SPSS) 22–5
  - barrier functions 25
  - clinical features 24–5
  - clinical signs 22
  - clinical subgroups 22–3
  - CNS involvement 25
  - diagnosis 23–4
  - epidemiology 24
  - neurogenic origin 25
  - physiologic mechanisms 25
  - provocative tests 23–4
- sensitive skin 57
  - allergy 23
  - clinical signs 22
  - clinical subgroups 22–3
  - crisis phases 22
  - diathesis factors 23
  - environmental factors 23
  - hyperreactivity 23

- immuno-allergologic pattern 23
- provocative factors 22
- severe 22
- somatosensory system 38–45
- topical factors 23
- sensitization
  - antiperspirants 154
  - deodorants 154
  - hair dyes 233, 234
- sensory axons **39**, 41
- serine proteases 7
- serums, moisturizers 504
- shampoos 115–21, 224–5
  - allergic reactions 58–9
  - attributes 118–20
  - chemical availability optimization 119
  - colored hair 234
  - conditioning 121, 225
  - conditioning aids 116
  - cosmetic 116
    - alternating with therapeutic 120
  - cosmetically-optimized 116, 120
  - effective use 120–1
  - formulation 115–18, 224–5
  - irritation prevention 119–20, 121
  - products 115–18
  - rinse-off conditioner 121
  - surfactants 116–17
  - therapeutic 116–17
    - advantages/disadvantages 120
    - benefit 121
    - cost 120
    - effective use 120–1
- shaving, blade 156–62
  - females 156–7, **162**
  - hair properties 158–9
  - irritation 158
  - males 156–62
  - moisturizer use 162
  - process 161–2
  - razors 159–61
  - rinsing skin 162
  - skin cleansing 161
  - technology 156
- shaving creams 161
- shaving gels 161
- signal transduction pathway activation 15
- silicone
  - allergic reactions 60
  - hair conditioners 225
  - hair styling aids 262–3
- silicone derivatives, moisturizer occlusive 126
- silicone oils, facial foundation 169
- skin
  - color 172
  - discoloration with collagen fillers 370
  - hairy 38, 39, 40, 41
  - hyperreactivity 23
  - pH 96, 108
  - topography 158–9
  - type and facial cleanser selection 99, **100**
- skin barrier
  - building ingredients in cleansers 103
  - damage in cleansing 105
  - see also* barrier function; epidermal barrier
- skin benefit agents 89–90
- skin cancer
  - immunomodulator association 288
  - immunosuppression 20
  - PGE-2 288
- skin contouring techniques
  - hand recontouring with calcium hydroxylapatite 473–9
  - liposuction 450–60
  - neck 463–71
- skin disease
  - nutrient effects 339–40
  - psychosocial aspects 182
- skin modulation techniques
  - laser-assisted hair removal 432–7
  - LED photomodulation 444–8
  - radiofrequency devices 439–42
- skin of color 27–35
  - aging of skin 31–2
  - contact dermatitis 30
  - dermis 31
  - dryness 30
  - epidermis 29
  - facial cosmetics 167
  - hair differences 33–4
  - makeup shades 172
  - mast cells 30
  - melanin photoprotection 33
  - melanosomes 27–8
  - patch test antigens 30
  - photoaging 18, 32–3
  - reactivity 30
  - self-perceived sensitive skin 24
  - stratum corneum 29
  - transepidermal water loss 30
  - UV irradiation 18
    - protective factors 29
  - see also* black skin; *named racial groups*; white skin
- skin partition coefficient, cosmetic actives 64
- skin problems, facial cleansing 100–1
- skin tightening
  - expectations 440
  - monopolar radiofrequency 439–41
  - patient selection 440
  - radiofrequency devices 439–42
- skincare, growth factors 304–5
- slowly adapting (SA) receptors 39
- SmartXide DOT resurfacing **396**, 402
- smile
  - downturned 351
    - Botox treatment 348, 349
  - gummy 348
- smoking, lip pigmentation 186
- soap 57, 77
  - acne treatment 488–9
  - basic 78
  - drying potential on skin 80
  - pH 81
  - superfatted 81
  - transparent 78–9
- soap bars 78–9
  - antibacterial 79
  - deodorant 79
  - market share 79
  - mildness 82–4
  - skin condition treatment 84–5, 86
  - stratum corneum interaction 80
  - superfatted 78
- sodium cocyl isethionate 505
- sodium lactate, moisturizer clinical efficacy 133–4
- sodium laureth sulfate (SLES) 103
- sodium lauryl sulfate (SLS) 103
  - damage protection 323
- soft tissue augmentation 361–2
  - allergic reactions 60
  - calcium hydroxylapatite 356–60
  - see also* fillers
- solid lipid nanoparticles (SNP) 66
- solvents
  - cosmetic actives 65
  - facial cleansers 97
  - irritants 57
  - nail lacquers 208
  - nail polish remover 213
- somatosensory cortex 44, 45
- somatosensory system
  - central projections 43–4
  - pain 42–3
  - pathways 45
  - pleasure sensation 43
  - sensitive skin 38–45
  - temperature 41–2
  - touch 38–9, 40, 41
- South Asian skin, UV irradiation 18
- South-East Asian skin, UV irradiation 18
- soy isoflavones 338–9
- spinal cord 43–4
- spinal nucleus of V 44
- spinothalamic tract 44
- stabilizers, vitamin E 325
- Staphylococcus aureus* 107
- Staphylococcus epidermidis* 107
- status cosmeticus 22
- stem cell, growth factors 307



## Index

- stinging, burning and itching (SBI) score 24
- stratum basale 4
- stratum corneum 3, 4, 5
- barrier function assessment 127
  - barrier to cosmetic actives 62
  - calcium gradient 9
  - components 4
  - detergent bar interactions 80–2
  - environmental toxin protection 7
  - facial skin 123–4
  - hydration
    - function 7
    - maintenance 126
  - hydroxyacids effects 329
  - integrity assessment 9–10
  - intercellular spaces 10
  - lipids 82
  - moisturization function 7
  - pH 9
  - proteases 7, 8
  - skin of color 29
  - soap bar interactions 80
  - surfactant interaction 80
  - topical drug penetration protection 7
  - ultrastructural details 10
  - urea 133
  - see also* desquamation
- stratum corneum chymotryptic enzyme (SCCE) 124
- stratum granulosum 4
- stratum spinosum 4
- stress, psoriasis 508
- striae, microdermabrasion 422
- submandibular glands, ptotic 470
- submandibular region 463
- submental fat 465
- submental fold, development after neck liposuction 470
- submicron delivery systems (SDS) 65
- substrate cleansers, facial 98–9
- sulfacetamide sulfur 500
- sulfites
  - hair permanent waving 243
  - hair straighteners 251
- sulfur 118, 491
- sun exposure, psoriasis 510
- sun protection
  - clothing 482–3
  - photoaging prevention 18–19
  - rosacea 496, 499
- sun protection factor (SPF) 18–19, 144, 481–2
- evaluation 147
- sunburn, NSAID use 288
- sunscreens 481–3
- regulatory status 144–5
  - sunless tanning products 140
- SunGuard 483
- sunless tanning products 139–42
- active ingredients 139
  - buffers 140
  - color additives 141
  - coloration 141–2
  - creams 140–1
  - definition 139
  - delivery vehicles 140–1
  - evaluation 142
  - formulation 140
  - gels/gelees 141
  - labeling 141
  - lotions 140–1
  - moisturization 142
  - nitrogen-containing compounds 140
  - no-rub mists 142
  - pH 140
  - product attributes 141–2
  - regulatory aspects 141
  - sunscreens 140
  - trends 142
  - UV protection 142
- sunlight, premature aging of skin 32
- sunscreens 18, 144–8, 146–7
- classification 144–5
  - development 145–7
  - efficacy evaluation 147–8
  - efficiency 146–7
  - facial moisturizers 127
  - formulation 147
  - migration over face 51
  - moisturizers 506
  - rosacea 499
  - UVA protection 144
  - vehicles 147
- superficial musculo-aponeurotic system (SMAS) 32
- superoxide dismutase (SOD) 8, 300
- supersaturation 64
- surfactants
  - body washes 89
  - cleansers 480
  - cleansing bars 77–8
  - facial cleansing 96, 97
  - groups 96
  - hair permanent waving 242
  - hair styling products 262
  - lipid interactions 105
  - low-foam cleansers 102–3
  - mild 103
  - non-foam cleansers 102–3
  - pH 96
  - shampoos 116–17
  - skin barrier damage 105
  - skin interactions 80
  - stratum corneum interaction 80
  - substrate cleansers 98
  - waterless cleansers 104
  - see also* soap; syndets/syndet bars

surgical scars, dermabrasion 427

sweat glands 150, 151, 152–3

  - hydrophilic substance delivery 62

sweating 155

  - control 155
  - physiology 151, 153

swelling
  - Botox 349–50
  - collagen fillers 370

sympathetic nerves 43

synapses, afferent nerve 43–4

syndets/syndet bars 79

  - acne treatment 488–9
  - body washes 89
  - eczema 505–6
  - mildness 82–4
  - pH 81
  - skin condition treatment 84–5, 86
  - stratum corneum interactions 80–2

synthetic polymers, cleansers 480

T cells, corticosteroid prolonged use 287

T4 endonuclease V 299–300

tacrolimus 288

  - eczema treatment 502

tactile perception, psychophysical channels 39

tactile primary afferents 43

tanning 139

  - see also* sunless tanning products

tanning beds, psoriasis treatment 510–11

tannins 272

tape stripping 68

tar, psoriasis 508, 509, 510, 511

tattooing, medical 179

tattoos, black henna 234

tea tree oil 492

tear troughs, polylactic acid fillers 375

telangiectasia, camouflage makeup 182

telogen phase of hair growth 158, 433

temperature sensing 41–2

temperature-sensitive fibers 41–2

terminal hair 33, 433

terpenes 272

texturing agents, lipsticks 187–8

thalamocortical afferents 44, 45

ThermaCool device 440

Thermafrax procedure 441

thermal primary afferents 44

thermosensitive mechanoreceptors 41–2

thickeners 73

thighs, liposuction indications 453–4

thioglycolate hair straighteners 250–1

thioglycolic acid salts 241–2, 243, 245

thiol hair straightening 250–1

  - with heat 255

thixotropic agents, nail lacquer 209

tighteners, botanicals 276

- Time and Extent Application (TEA), UV filters 145
- tissue inhibitors of metalloproteinase (TIMP), skin damage 302
- titanium dioxide 146, 481  
sunscreen 482
- TNS Recovery Complex 305–6
- tocopherol *see* vitamin E
- d-alpha-tocopherol, topical 484
- tocopherol acetate 325
- toluene, nail lacquer solvent 208
- para*-toluenediamine (pTD) 234
- toners, facial cleansers 98
- topical drugs, stratum corneum protective function 7
- topical factors, sensitive skin 23
- topical products  
antioxidant protection 52–3, 54  
epidermal barrier 10
- tosylamide/formaldehyde resin 211–12
- touch 38–9, 40, 41
- touch receptors 39
- transepidermal delivery, cosmetic actives 62
- transepidermal water loss (TEWL) 10, 124  
extremozyme protection **300**  
microdermabrasion 418  
self-perceived sensitive skin 25  
skin of color 30  
soap bar use 80  
stratum corneum barrier function assessment 127
- transforming growth factor beta (TGF-beta), collagen production 15
- transforming growth factor beta (TGF-beta)/Smad pathway 16
- trans-retinoic acid (tRA) 19
- trans-urocanic acid (tUCA) 8, 9
- trauma, nail dystrophy 203
- traumatic scars, dermabrasion 427
- tretinoin peel **378**, 380  
*see also* retinoic acid
- triangle of youth 362–3
- trichloroacetic acid **378**, 379  
depth-controlled peel 381  
medium depth peel 384–5, 389, 390, 391  
microdermabrasion comparison 423  
techniques 386, 388  
microdermabrasion combination 421
- triclocarban 491
- triclosan 491
- trigeminal nerve 44
- tropic acid 483
- tumescent local anesthesia (TLA), liposuction 450, 451–2  
neck 466–7  
technique 456–7
- turmeric 278–9
- Tyndall effect 353
- tyrosinase 28
- tyrosinase-related protein (TRP) 28
- ubiquinone *see* coenzyme Q10 (CoQ10)
- ultrasound waves, penetration enhancement 66–7
- ultraviolet A (UVA) radiation 14, 144  
critical wavelength method 148  
protection  
antiaging 481  
level determination 147–8  
protective factor in black skin 29  
reactive oxygen species induction 14, 15–16  
sunscreens 144
- ultraviolet B (UVB) radiation 14–15, 144  
antiaging protection 481  
hydroxyacids 330  
protective factor in black skin 29  
sunscreens 144
- ultraviolet C (UVC) radiation 14
- ultraviolet (UV) filters 145  
efficiency 146–7  
inorganic 146  
organic 146  
Time and Extent Application 145
- ultraviolet (UV) fluorescence photography 50–1
- ultraviolet light (UV) 144  
angiogenesis of skin 19  
erythema induction 447  
ethnic skin 18  
protective factors 29  
exposure 13, 14  
extracellular matrix degradation effects 19  
fibroblast effects 17  
keratinocyte effects 17  
pigmentation induction 28  
nutrient protection 335, **336**, 337–8  
photodamage 14–16, 17  
protection 481–3  
protective antioxidant product 53  
psoriasis therapy 510–11  
retinol absorption 314  
retinyl ester absorption 314  
skin damage protection 11  
spectrum 14–15  
vitamin E protection 325  
*see also* photoaging
- ultraviolet light (UV) barrier 7–8  
sunless tanning products 142
- ultraviolet light protection factor (UPF) 18, 483
- ultraviolet (UV) reflectance photography 50, 51
- urea  
dry skin treatment 133
- moisturizers 131  
clinical efficacy 133–4  
psoriasis 508, 509, 509  
stratum corneum 133
- urticaria, contact 56, 57–8
- UV gel nails 216–17
- vascular cell adhesion molecules (VCAM) 285
- vascular compromise, collagen fillers 371
- vascular endothelial growth factor (VEGF) 15, 19
- vascular malformation, camouflage makeup 181
- vellus hair 33
- vermillion border, collagen filler injection 368
- vibrotactile stimulation 39
- VISIA CR<sup>®</sup> system 49–50
- vitamin(s)  
oral 492–3  
topical 319–26
- vitamin A  
acne treatment 493  
formulation 321  
irritation 321  
mechanisms of action 319–20  
photodegradation 312  
stability 321  
structure 320  
topical 319–21  
UV damage protection 337  
*see also* retinol
- vitamin B<sub>3</sub> 321–3  
depigmentation 323  
forms 321  
formulation 323  
mechanisms of action 322–3  
structure 322  
topical effects 323  
wrinkle treatment 323
- vitamin B<sub>5</sub> 323–4
- vitamin C  
antiaging effects 325, 484, **486**  
antioxidant 281, 282, 283, 324  
topical formulation 284  
collagen synthesis co-factor function 484  
forms 324  
formulation 325, 484  
mechanisms of action 324–5  
photodamage mitigation 20  
rosacea treatment 500  
topical 324–5  
UV damage protection 337  
with vitamin E 484–5
- vitamin D  
skin health **336**  
topical 325

## Index

- vitamin E
  - antiaging 484, **486**
  - antioxidant 281, 282, 283, 325
    - topical formulation 284
  - formulation 325
  - isomers 484
  - photoaging reversal 484
  - skin changes 339
  - skin diseases 339–40
  - topical 325
  - UV damage protection 337
    - with vitamin C 484–5
  - wound healing 339–40
- vitamin K, topical 325
- vitamin P *see* flavonoids
- vitiligo, camouflage 179, 180
  
- warm-sensitive fibers 41, 42
- water vapor flux measurement 10
- waterless cleansers 104
- waterpacts 169–70
- waxes
  - hair styling aids 259, **260**, 262, **263**
  - lipsticks 187
  
- waxy pastes, lipsticks 187
- wetness control 152–3
- Wetness Inhibiting Performance,
  - antiperspirants 153
- white petrolatum 506
- white skin
  - dermis 31
  - irritant contact dermatitis 30
  - photoaging 33
- whitening of skin 295
- wound healing
  - dermabrasion postoperative 430
  - granulation 303
  - growth factors 303–4
  - inflammatory phase 303
  - medium depth chemical peel 388, 389
  - nutrient effects 339–40
  - physiology 302–5
  - re-epithelialization 303
- wrinkles
  - Botulinum* neurotoxin injections 299
  - facial foundation effect measurement of
    - antiwrinkle performance 173
  - formation with photoaging 33
  
- hydroxyacids 332, 333
- improvement detection 51–2, 53
- optical profilometry 51–2, 53
- peptide application 298
- Raking Light Optical Profilometry 51–2, 53
- retinaldehyde treatment 314
- retinoid treatment 320–1
- skin around lips 186
- topical product evaluation 48
- vitamin B<sub>3</sub>, treatment 323
  
- zeaxanthin 337, 339
- zinc
  - deficiency 340
  - UV damage protection 338
- zinc oxide 146
  - microdermabrasion 418
  - sunscreen 481, 482
- zinc sulfonate 492
- Zyderm II<sup>®</sup> filler 362, **364**, 365–6, 367
  - hands 473
- Zyplast<sup>®</sup> filler 362, **364**, 365–6, 367, 369
  - hands 473