

Table of Contents

Foreword by Prof Dr Ksenija Suvorova	VI
Foreword and Acknowledgements	VII
Table of Contents	IX
List of abbreviations	X
Chemical formulae – Representation	X
1 Introduction to Corneotherapy	1
1.1 Adjuvant and extended corneotherapy	2
1.2 Dermatological cosmetics	2
2 Structure of the skin	5
3 Skin diagnosis	8
3.1 Measurements	8
3.2 Measured values and subjective perceptions	9
3.3 Short- and long-term effects	10
4 Chemical and physical principles of corneotherapy	12
4.1 Requirements for bases and active agents	13
4.1.1 Base creams	13
4.1.2 Hydrophilic base gels	16
4.1.3 Hydrophobic oleogels	16
4.1.4 Lotions	17
4.2 Shelf life	19
4.2.1 Minimum shelf life	19
4.2.2 Physical changes	19
4.2.3 Chemical reactions	19
4.2.4 Microbiology	20
4.2.5 Sensory changes	20
4.2.6 Container properties	20
4.2.7 Ecology of plastics and polymers	21
4.3 Safety of skin care products	23
4.3.1 Pure substances and mixtures of substances	23
4.3.2 Hidden pollutants	23
4.3.3 Prohibited substances	23
4.3.4 Undesirable substances during storage and use	24
4.3.5 Endocrine disruptors	25
4.3.6 Nitrosamines	25
4.4 Active agents from nature	26
4.4.1 Natural or synthetic?	26
4.4.2 Natural cosmetics	27
5 Chemical and physical principles of extended corneotherapy	30
5.1 Membrane family	30
5.1.1 Phospholipids and phosphatidylcholine	31
5.1.2 Liposomes	31
5.1.3 Nanodispersions	33

5.1.4	Derma Membrane Structure (DMS)	33
5.1.5	Combinations and modular concepts	34
5.1.6	Properties of preparations containing membranes.....	35
5.1.7	Applications of membrane-containing products	36
5.2	Properties of nanodisperse systems at a glance	36
5.3	Active and auxiliary substances	39
6	Ingredients of skin care products – chemical structure classes	43
6.1	Water	43
6.1.1	Seawater	46
6.1.2	Thermal water.....	46
6.2	Acids and bases	48
6.3	Fatty acids	50
6.3.1	Essential fatty acids	51
6.3.2	Metabolism	51
6.3.3	Contrasting effects	53
6.3.4	Skin metabolism of essential fatty acids	53
6.3.5	Influence of drugs on the fatty acid metabolism	54
6.4	Hydrocarbons	55
6.4.1	Sebum	55
6.4.2	Vegetable hydrocarbons	55
6.4.3	Mineral hydrocarbons	55
6.5	Natural oils, fats and waxes	57
6.5.1	Waxes	57
6.5.2	Vegetable triglycerides	58
6.5.3	Vegetable fatty acids	58
6.5.4	Minor components of vegetable oils	59
6.5.5	Other vegetable oils	60
6.6	Terpenes	60
6.6.1	Essential oils	61
6.6.2	Vitamins and provitamins with terpene structure	61
6.6.3	Related vitamins	62
6.7	Steroids.....	62
6.7.1	Plant and animal sterols	63
6.7.2	Bile acids	63
6.7.3	Steroid hormones	63
6.7.4	Glucocorticoids	64
6.7.5	Saponins	64
6.7.6	Vitamin D ₃ (cholecalciferol)	66
6.8	Alcohols and phenols.....	66
6.8.1	Alcohols.....	67
6.8.2	Glycols.....	67
6.8.3	Phenols	69
6.8.4	Hidden alcohols	69
6.8.5	Denaturants.....	70
6.9	Aldehydes and ketones.....	72

6.10	Saccharides and polysaccharides	74
6.10.1	Mono- and oligosaccharides	74
6.10.2	Polysaccharides	74
6.10.3	Hyaluronic acid	76
6.10.4	Glycosides and their functions	78
6.11	Flavones and isoflavones	79
6.11.1	Hormonal properties	80
6.11.2	Glycosides of flavones and isoflavones	80
6.11.3	Side effects	81
6.12	Alkaloids	81
6.13	Amino acids	83
6.13.1	Physiological amino acids	83
6.13.2	Hair care	84
6.14	Peptides	84
6.14.1	Proteins	84
6.14.2	Natural peptides	84
6.14.3	Synthetic peptides	85
6.14.4	Peptides with special properties	85
6.14.5	Growth factors	85
6.14.6	Antimicrobial peptides	87
6.15	Enzymes	89
6.15.1	Effective biocatalysts	89
6.15.2	Enzyme classes	90
6.15.3	Enzymes in the network	90
6.15.4	Enzymes in cosmetics	92
6.16	Silicon compounds	92
6.16.1	Silica	92
6.16.2	Silicates	93
6.16.3	Silicones	93
6.17	Aluminium compounds	95
6.18	Trace elements	97
7	Ingredients of skin care products – by function	104
7.1	Preservatives	104
7.1.1	Jar, tube or dispenser?	105
7.1.2	Microbiology of products	106
7.1.3	Approved preservatives	106
7.1.4	Preservative chemistry	106
7.2	Emulsifiers	107
7.2.1	Emulsifiers and surfactants	108
7.2.2	Polyethylene glycols	109
7.2.3	Emulsions	111
7.3	UV filter	112
7.4	Moisturisers	116
7.4.1	Active agents	117
7.4.2	Limits of effectiveness	119

7.5	Antioxidants	120
7.5.1	Body's own radicals	120
7.5.2	Exogenous radicals	121
7.5.3	Endogenous antioxidants	121
7.5.4	Exogenous antioxidants	122
7.5.5	Autoxidation	122
7.5.6	Vitamin C and E as radical scavengers	122
7.5.7	Antioxidants in skin care products	123
7.6	Vitamins and provitamins	124
7.6.1	Vitamin A and retinoids	125
7.6.2	Vitamins at a glance	126
7.7	Fragrances	128
7.7.1	Scent perception	128
7.7.2	Natural and synthetic fragrances	129
7.7.3	Body notes	129
7.7.4	Perfumes	132
7.8	Plant extracts	133
7.9	Cosmeceuticals	134
7.9.1	Cosmeceuticals – the criteria	135
7.9.2	Examples of cosmeceuticals	135
7.10	Food supplements	136
7.10.1	Active agents – topical and oral?	137
7.10.2	Spicy substances in food and cosmetics	138
8	Forms of application and uses	144
9	Preparative treatments	147
9.1	Skin cleansing	147
9.1.1	Detergent components	148
9.1.2	Cleansers for sensitive skin	148
9.2	Baths	149
9.2.1	Foam baths	149
9.2.2	Salt baths	149
9.2.3	Therapeutic baths	150
9.2.4	Skin care baths	150
9.2.5	Aromatherapy	150
9.3	Peeling	151
9.3.1	Mechanical peels	151
9.3.2	Chemical peeling	151
9.3.3	Enzyme peeling	152
9.3.4	Laser and microdermabrasion	152
9.3.5	Practical advice	152
9.3.6	Peeling methods at a glance	153
9.4	Toning the skin	154
9.5	Masks and packs	154
9.6	Massages	156
9.7	Final care and home care	158

10 Decorative cosmetics for problem skin 159

10.1 Camouflage..... 159

10.2 Make-up for problem skin 160

10.3 Lipsticks..... 161

10.4 Mascara..... 161

10.5 Powders 161

10.6 Self-tanners 163

11 Apparative treatments 166

11.1 Laser and IPL..... 167

11.2 Ultrasound 169

11.3 Radio frequency..... 170

11.4 Iontophoresis 170

11.5 Dermaroller 171

11.6 Devices and preparations: Synergies at a glance 171

12 Specific care instructions..... 176

12.1 Care of the hands..... 176

12.1.1 Hand cream formulations 177

12.1.2 Further tips for hand care 178

12.2 Anti-pollution..... 179

12.3 Body care..... 180

12.4 Facial care and combination skin 181

12.5 Eye care 183

12.6 Lip care 186

12.7 Foot care..... 188

12.8 Baby and infant care 190

12.9 Intimate care..... 192

12.10 Sweat and body odour 194

12.11 Men’s cosmetics..... 196

12.12 Hair removal 197

12.13 Hair growth 199

12.14 Overdoing skin care 201

13 Anti-aging preparations 205

14 Medical wellness preparations 209

15 Skin alterations and their corneotherapeutic treatment..... 211

15.1 Hormone-related changes..... 211

15.1.1 Puberty 211

15.1.2 Monthly period 213

15.1.3 Pregnancy 213

15.1.4 Climacteric and menopause 215

15.2 Skin barrier disorders..... 216

15.2.1 Neurodermatitis – atopic dermatitis 216

15.2.2 Perianal barrier disorders..... 218

15.2.3 Pressure ulcer 218

15.3 Cornification disorders..... 218

15.3.1 Acne..... 219

15.3.2 Psoriasis 222

15.3.3 Actinic keratosis 224

15.4 Connective tissue disorders..... 225

15.4.1 Atrophic skin 225

15.4.2 Stretch marks..... 225

15.4.3 Cellulite 225

15.4.4 Scleroderma 229

15.5 Rosacea and couperose 229

15.6 Scars..... 231

15.7 Pigmentation disorders..... 232

15.7.1 Brightening agents 233

15.7.2 Tranexamic acid – against pigmentation spots and redness..... 234

15.7.3 Vitiligo..... 235

15.7.4 Other hypopigmentations 236

15.8 Irritations..... 236

15.9 Inflammations 237

15.10 Allergies 239

15.11 Dermatoses – Eczema 240

15.12 Perioral dermatitis 241

15.13 Itching..... 242

15.14 Light-damaged skin 244

15.14.1 Prevention 244

15.14.2 Sunburn 244

15.14.3 Photosensitisation and phototoxicity..... 245

15.14.4 Endogenous light damage..... 246

15.15 Cancer therapies – Pre- and aftercare 246

15.15.1 Surgery..... 247

15.15.2 Radiotherapy 247

15.15.3 Chemotherapy..... 248

15.15.4 Immunotherapy..... 249

15.16 Aesthetic surgeries – Pre- and aftercare 249

15.17 Drug side effects 250

15.18 Multiple chemical sensitivity (MCS) 254

15.19 Nerve irritation 255

15.20 Food intolerances 257

16 Skin microbiome and infections 262

16.1 Bacterial infections 262

16.2 Fungal infections 262

16.3 Viral infections 264

16.4 Disinfection 266

16.5 Physical balances 266

16.6 Adapted skin care 267

17 Problem skin or medical indication? 269

17.1 Pharmaceutical base creams 269

17.2 Identical active agents 271

17.3 Adjuvant corneotherapy 272

17.4 Magisterial recipes 272

17.5 Medical devices 277

17.6 Placebos 279

17.7 Summary 279

Supplementary literature 281

Trademarks 282

Index 283

The author 293