

### **Editorial Board, iii**

### **Contributors, v**

### **Introduction, xv**

*By Gregory H. Branham, Jeffrey S. Dover, Shilpi Khetarpal, Smita R. Ramanadham, and Allan E. Wulc*

### **Preface: For Aesthetic Surgeons, by Aesthetic Surgeons, xvii**

*By Gregory H. Branham, Jeffrey S. Dover, Shilpi Khetarpal, Smita R. Ramanadham, and Allan E. Wulc*

### **Muscle Toning and Strengthening Through Electromagnetic Stimulation and Direct Current, 1**

*By Courtney Gwinn, Leah Spring, Elizabeth Tanzi, and Jeffrey S. Dover*

- Introduction, 1
- Electromagnetic muscle stimulation, 2
- Evidence, 3
- Electromagnetic muscle stimulation for gluteal toning, 4
- Electromagnetic muscle stimulation plus cryolipolysis, 4
- Direct current, 4
  - Pathophysiology, 4*
  - Evidence, 5*
- Summary, 5
- Clinics care points, 6
- Relevant disclosures, 6

### **Laser Treatment of Scars, 9**

*By Ladan Afifi and Sara R. Hogan*

- Introduction, 9
- Scar characteristics, 9
  - Color, 9*
  - Topography, 11*

*Contractures, 13*

*Maturity, 13*

Scar subtypes, 14

*Acne, 14*

*Surgical Scars, 14*

*Burns and Traumatic Scars, 16*

*Scars Caused by Skin Disease or Lesions, 17*

Evaluation of patients, 17

Approach, 19

Considerations, 19

*Laser Energy and Treatment Zone Density, 19*

*Higher Skin Phototypes, 20*

Summary, 20

Clinics care points, 21

Disclosure, 21

### **Radiofrequency for Fat Removal and Skin Tightening of the Body, 25**

*By Erez Dayan, Joseph Marte, and Spero Theodorou*

- ▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Preoperative steps, 25

*Analysis, 25*

Operative steps, 26

Postoperative care, 27

Summary, 27

Clinics care points, 28

Disclosure, 28

### **Laser-Assisted Drug Delivery: Where Do We Stand Now?, 29**

*By Carolyn M. Stull, Jeffrey S. Dover, and Omer Ibrahim*

- ▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Introduction: nature of the problem, 29

Surgical technique, 30

*Preoperative Planning, 30*  
*Preparation and Patient Positioning, 31*  
*Procedural Approach, Step 1, Step 2, and so Forth (Including Video), 31*  
*Immediate Postprocedural Care, 32*

Clinical results in the literature, 32

*Dysplasia, 32*  
*Scars, 32*  
*Anesthetics, 33*  
*Hyperhidrosis, 33*  
*Aesthetics, 33*  
*Melasma, 33*  
*Alopecia, 34*

Potential risks and complications, 34

*Local Cutaneous Reactions, 34*  
*Systemic Reactions and Toxicity, 34*

Clinics care points, 35

Summary, 35

Disclosure, 35

## **Social Media/Electronic Media and Aesthetic Medicine, 39**

*By Hannah Kopelman, Jacqueline Watchmaker, Ross Kopelman, Daniel Callaghan, and David Kim*

Introduction, 39

Social media basics, 39

The terms, 40

The platforms, 40

Impact of social media on aesthetic medicine, 41

*Social Media's Impact on Trends in Aesthetic Medicine, 41*

*Social Media Have Brought Awareness to and Acceptance of Cosmetic Procedures, 42*

*The Negative Effects of Social Media on Aesthetic Patients, 42*

Uses of social media/electronic media for aesthetic providers, 42

*Marketing and Patient Acquisition, 43*  
*Education, 43*

*Networking and Collaboration, 43*

Best practices: professionalism, privacy, and legal considerations, 44

Summary, 44

Clinics care points, 44

Disclosure, 44

## **Phenol Croton Oil Peels, 47**

*By James E. Zins and Jacob Grow*

▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Introduction, 47

Chemical peel background, 47

Anatomy/pathogenesis, 48

Patient selection, 50

Preoperative planning, 51

Technique, 51

*Safety Considerations, 51*

*Anesthesia, 51*

*General Principles of Phenol-Croton Oil Peeling, 52*

*Periorbital Region, 52*

*Perioral Region, 53*

Postoperative care, 53

Results, 53

Complications and management, 53

Summary, 56

Clinics care points, 56

Disclosure, 56

## **Stem Cells and Exosomes in Aesthetic Medicine, 59**

*By Nina Semsarzadeh, Wyatt Andrasik, and Shilpi Khetarpal*

Introduction, 59

*Stem Cells, 59*

*Exosomes, 60*

Clinical results in the literature, 60

*Stem Cells, 60*

*Exosomes, 64*

Potential complications and legal considerations, 67

Summary, 67

Clinics care points, 68

Disclosure, 68

## **Noninvasive Rhinoplasty, 71**

*By Yusuf M. Agamawi, Kasra Ziai, Jessyka G. Lighthall, and Scott G. Walen*

Introduction, 71

Anatomy, 72

Patient selection, 72

Injection filler materials, 72

Techniques, 75  
*Basic Principles*, 75  
*Nasal Subsites*, 75  
 Postprocedure care, 77  
 Complications, 77  
 Outcomes, 79  
 Summary, 80  
 Clinics care points, 80  
 Disclosure, 80

## Rejuvenation of the Chest, 83

By Sean Z. Wu, Douglas C. Wu, and Sabrina G. Fabi

▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Introduction, 83  
 Characteristics of aging chest skin, 83  
 Clinical evaluation, 83  
 Special considerations, 84  
 Injectable therapy, 84  
*Soft Tissue Augmentation*, 84  
*Neuromodulation*, 86  
*Sclerotherapy*, 86  
*Adverse Events Associated with Injection Therapy*, 86  
 Chemical peels, 87  
 Energy-based devices, 87  
*Intense Pulsed Light*, 87  
*Vascular Lasers*, 88  
*Short-Pulsed Lasers*, 88  
*Nonablative Fractional Lasers*, 89  
*Ablative Fractional Lasers*, 89  
*Photodynamic Therapy*, 90  
*Microfocused Ultrasound*, 91  
*Fractional Radiofrequency*, 91  
 Summary, 92  
 Clinics care points, 92  
 Disclosures, 92

## Combination Treatment Approach to Melasma, 97

By Emily L. Guo, Jordan V. Wang, Roy G. Geronemus, and Paul M. Friedman

Background, 97  
 Combination therapy, 98  
 Risk factor reduction, 98  
*Photoprotection*, 98

*Hormonal Therapies*, 98  
 Topical therapies, 98  
*Hydroquinone*, 98  
*Retinoids*, 99  
*Triple Combination Creams*, 99  
*Azelaic Acid*, 100  
*Kojic Acid*, 100  
*Tranexamic Acid*, 100  
 Systemic therapy, 101  
*Tranexamic Acid*, 101  
 Procedures, 102  
*Chemical Peels*, 102  
*Microneedling*, 103  
*Intense Pulsed Light*, 103  
*Q-Switched Lasers*, 103  
*Picosecond Lasers*, 103  
*Nonablative Fractional Lasers*, 104  
*Pulsed Dye Laser*, 104  
*Laser-Assisted Drug Delivery*, 105  
 Summary, 105  
 Clinics care points, 106  
 Disclosures, 106

## Cosmetic Practices in the COVID-19 Era, 109

By Shanthy Narla, Jacqueline Watchmaker, David M. Ozog, and Thomas E. Rohrer

Introduction, 109  
 The science behind transmission, masks, and ventilation, 109  
*Transmission of Severe Acute Respiratory Syndrome Coronavirus 2*, 109  
*Masks and Respirators*, 110  
*Ventilation*, 111  
*Upper Room Disinfection Using UV-C*, 111  
 Office protocols and guidelines in the COVID-19 era, 111  
*Screening of Patients and Health Care Personnel*, 111  
*Appointment Scheduling*, 112  
*Avoidance of Waiting Rooms*, 113  
*Social Distancing*, 114  
 An exposure occurs at work—now what?, 115  
*What Is Classified as an Exposure?*, 115  
*What Are the Work Restrictions and Quarantine Requirements for Asymptomatic Health Care Personnel with*

- Severe Acute Respiratory Syndrome  
Coronavirus 2 Exposure.,? 115*
- Should the Exposed Health Care Personnel  
Be Tested for COVID-19? Can  
Postexposure Testing Be Used to Allow  
Health Care Personnel to Return to Work  
Before 14 Days?., 115*
- A Health Care Worker Develops a Fever and  
Cough—What Next?, 116*
- Precautions related to specific cosmetic  
procedures and body site, 116
- Risk Stratification of Procedures, 116*
- Head and Neck Procedures, 117*
- Trunk and Extremity Procedures, 118*
- Injectables, 118*
- Laser and Energy-Based Treatments, 118*
- Electrosurgery, 118*
- Microneedling, Microdermabrasion,  
Dermaplaning, Chemical Peels, 118*
- Patient volume and aesthetic trends, 118
- Summary, 119
- Clinics care points, 119

### **Expanding Indications for Fat Transfer to the Breast Beyond Reconstruction: Natural Augmentation, Tuberos Breast Correction, Implant Exchange, 123**

*By Sarah A. Mess and Ashley N. Amalfi*

- ▶ Video content accompanies this article at  
<http://www.advancesincosmeticsurgery.com>.

- Introduction, 124
- Lipoaugmentation, 125
- Preoperative, 125*
- Harvest Sites, 126*
- Technique, 128*
- Postoperative Care, 129*
- Complications, 130*
- Correction of asymmetry/tuberos breast, 130
- Technique, 131*
- Complications, 131*
- Exchange of implant for fat, 131
- Technique, 132*
- Postoperative, 132*
- Complications, 132*
- Breast reconstruction with fat, 133

- Summary, 133
- Disclosures, 134
- Clinics care points, 134

### **Hair Restoration—Nonsurgical and Surgical Approaches, 137**

*By Farah Moustafa and Nicole Rogers*

- Introduction: nature of the problem, 137
- Nonsurgical treatments of hair restoration, 137
- Medical Therapy, 137*
- Platelet-rich plasma, 139
- Preoperative Planning, 139*
- Preparation and Patient Positioning, 140*
- Procedural Approach, 140*
- Surgical hair restoration, 140
- Preoperative Planning, 141*
- Preparation and Patient Positioning, 141*
- Procedural Approach, 141*
- Graft Placement, 145*
- Postoperative Care and Follow-up, 146*
- Complications, 148*
- Clinics care points, 150
- Disclosure, 151

### **Skin Care in the Facelift Patient, 153**

*By Kailash Kapadia, Lauren Otaguro, Haripriya Ayyala,  
and Smita Ramanadham*

- Introduction: wound healing and the aging skin,  
153
- Wound Healing, 153*
- Intrinsic Aging, 153*
- Extrinsic Aging, 154*
- Skin care agents, 154
- Cleanser, 154*
- Moisturizer, 155*
- Sunscreen, 156*
- Hydroxy Acids, 156*
- Antioxidants, 156*
- Pigment Lighteners, 156*
- The facelift patient, 157
- Preoperative Skin Care, 157*
- Postoperative Skin Care, 158*
- Skin resurfacing adjuncts for facelift patients,  
158
- Laser Resurfacing, 158*
- Chemical Peels, 158*

*Mechanical Resurfacing: Dermabrasion,  
Microdermabrasion, and Microneedling,*  
158

Summary, 159

Clinics care points, 159

Disclosure, 159

### **Augmentation Mastopexy: Challenging Dogma to Produce Long-Term Aesthetic Results,** 161

*By Bao Tram (Cassie) Nghiem, William Koenig, and  
Ashley N. Amalfi*

▶ Video content accompanies this article at  
<http://www.advancesincosmeticsurgery.com>.

Introduction, 161

Surgical technique, 162

*Patient Selection,* 162

*Surgical Markings,* 163

*Positioning and Prep,* 164

*Procedural Approach,* 164

*Immediate Postprocedural Care,* 166

Rehabilitation and recovery, 166

Clinical results in the literature, 166

Complications, 166

Management, 169

Summary, 171

Disclosure, 172

### **Reverse Abdominoplasty,** 175

*By Carrie A. Houssock*

Introduction, 175

Surgical technique, 177

*Preoperative Planning,* 177

*Preparation and Patient Positioning,* 177

*Procedural Approach,* 177

Immediate postprocedural care, 179

Rehabilitation and recovery, 179

Potential complications, risks, benefits, and  
limits, 179

*Risks and Potential Complications,* 179

Benefits, 179

Limits, 179

Summary, 179

Clinics care points, 180

Disclosure, 180

### **360° Abdominoplasty: A Circumferential Approach to Contouring of the Abdomen,** 183

*By Ashley N. Amalfi, William J. Koenig, and  
Kathryn E.H. Skibba*

▶ Video content accompanies this article at  
<http://www.advancesincosmeticsurgery.com>.

Introduction, 183

*Nature of the Problem,* 183

*Anatomic Considerations,* 183

*Lipoabdominoplasty Debate,* 184

Surgical markings, 186

Surgical technique, 187

Immediate postprocedural care, 189

Rehabilitation and recovery, 190

Managing potential complications, 190

*Local Complications,* 190

*Systemic Complications,* 193

Before and after results, 193

Clinical results in the literature, 194

Summary, 194

Clinics care points, 194

Disclosures, 194

### **Update on Secondary Facelift Surgery,** 197

*By Nicholas R. Sinclair, Demetrius M. Coombs, and  
James E. Zins*

Introduction, 197

General considerations, 197

*Patient Demographics,* 197

*Cervicofacial Analysis,* 197

*General Surgical Principles,* 198

Specific secondary deformities, 198

*Unacceptable Scarring and Hairline*

*Distortions,* 198

*Alopecia,* 198

Ear deformities, 198

*Tragal Distortion,* 198

*Pixie Ear Deformity,* 198

Cheek deformities, 199

*Lateral Sweep,* 199

*Cross-Cheek Depression (Joker Line),* 199

*Smile Block,* 199

Neck deformities, 199

*Platysmal Banding,* 199

*Residual Jowling, 199*

*Cobra Neck Deformity, 199*

*Prominent Submandibular Glands, 200*

Preparation and positioning, 200

Procedural approach, 200

*Postoperative Complications, 200*

Summary, 204

Clinics care points, 204

Disclosure, 204

## **Update on Upper Lip Lift, 207**

By Gary Linkov

▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Introduction, 207

Surgical technique, 207

*Preoperative Planning, 207*

*Prep and Patient Positioning, 208*

*Procedural Approach, 208*

*Immediate Post-Procedural Care, 213*

*Rehabilitation and Recovery, 213*

*Short-Term Healing Phase, 213*

*Long-Term Healing Phase, 213*

Potential complications, 213

Summary, 215

Clinics care points, 215

Disclosure, 215

## **Hairline Lowering: An Evolving Technique,**

217

By Kevin Ende

▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Introduction, 217

Preoperative work-up, 217

Procedure risks, 219

Surgical technique, 220

Postoperative course, 222

Summary, 223

Clinics care points, 223

Disclosure, 223

## **Update on Modalities for Reducing Preoperative and Postoperative Swelling, 225**

By Sana A. Bautista, Diana H. Kim, Elana Meer, and Sathyadeepak Ramesh

Introduction, 225

Pathophysiology of postoperative bruising and edema, 225

Postoperative bruising and swelling in nonsurgical procedures, 226

*Incidence of Postoperative Bruising and Swelling, 226*

*Mechanisms of Bruising and Swelling, 226*

*Preoperative Evaluation, 227*

*Techniques to Decrease Postoperative Swelling, 228*

Postoperative bruising and swelling in facial and periocular surgical procedures, 228

*Incidence, 228*

*Mechanisms of Bruising and Swelling, 228*

*Preoperative Evaluation, 229*

*Techniques to Decrease Postoperative Swelling, 229*

Wound healing, 230

*General Approach to Wound Healing, 231*

*Growth Factors, 231*

*Platelet Gels, 231*

*Stem Cells, 231*

*Engineered Dermal Skin Substitutes, 231*

*Vacuum-Assisted Therapy, 232*

*Botulinum Toxin, 232*

*Hyperbaric Oxygen, 232*

*Light-Emitting Diode Therapy, 232*

*Topical Tretinoin, 232*

*Low-Dose Insulin, 232*

*Thyroid Hormone 1, 232*

*Insulin-Like Growth Factor-1 and Human Growth Hormone, 233*

*Exosomes, 233*

Clinics care points, 233

Disclosure, 233