

Cosmetic Dermatology

Products & Procedures



Edited by ZOE DIANA DRAELOS

 WILEY-BLACKWELL

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EDITED BY

Zoe Diana Draelos MD

Consulting Professor
Department of Dermatology
Duke University School of Medicine
Durham, North Carolina
USA

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The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK
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Contributors

Eric S. Abrutyn MS

Founder
TPC2 Advisors Ltd. Inc.
Chiriqui, Republic of Panama

Murad Alam MD, MSCI

Associate Professor of Dermatology and Otolaryngology
Chief of Cutaneous and Aesthetic Surgery
Department of Dermatology
Feinberg School of Medicine
Northwestern University
Chicago, IL, USA

K.P. Ananthapadmanabhan PhD

Senior Principal Scientist
Unilever HPC R&D
Trumbull, CT, USA

Yohini Appa PhD

Senior Director of Scientific Affairs,
Johnson & Johnson
New Brunswick, NJ, USA

Duncan Aust PhD

Senior Vice President of Research and Development
DFB Branded Pharmaceuticals
Fort Worth, TX, USA

Nidhi Avashia MD

Department of Dermatology and Cutaneous Surgery
University of Miami Miller School of Medicine
Miami, FL, USA

Kenneth R. Beer MD, PA

Palm Beach Esthetic, Dermatology & Laser Center
West Palm Beach, FL, USA
and
Clinical Voluntary Assistant Professor of Dermatology
University of Miami
Miami, FL, USA

Joseph Bikowski MD, FAAD

Clinical Assistant Professor, Dermatology
Ohio State University
Columbus, OH, USA
and
Bikowski Skin Care Center
Sewickley, PA, USA

Donald L. Bissett PhD

Beth Jewell-Motz
Procter & Gamble Co.
Sharon Woods Technical Center
Cincinnati, OH, USA

Frédéric Bonté PhD

Director of Scientific Communication
LVMH Recherche
Saint Jean de Braye, France

Anne Bouloc MD, PhD

Vichy International Medical Director
Cosmetique Active International
Asnières, France

Ute Breitenbach PhD

Beiersdorf AG
Hamburg, Germany

Harold Bryant PhD

Assistant Vice President
L'Oréal Institute for Ethnic Hair and Skin Research
Chicago, IL, USA

Paul H. Bryson PhD

Director of Research and Development
OPI Products Inc.
North Hollywood
Los Angeles, CA, USA

Doug Burke PhD

Senior Scientist
Phamanex Global Research and Development
Provo, UT, USA

Karen E. Burke MD, PhD

Assistant Clinical Professor, Dermatology
The Mount Sinai Medical Center
Rivercourt
New York, NY, USA

Kimberly J. Butterwick MD

Dermatology/Cosmetic Laser Associates of La Jolla, Inc.
San Diego, CA, USA

Hervé Cantin

LVMH Recherche
Saint Jean de Braye, France

Ana Paula Avancini Caramori MD

Department of Dermatology
Complexo Hospitalar Santa Casa de Porto Alegre
Porto Alegre, Brazil

Duane Charbonneau PhD

Global Microbiology
Procter & Gamble Co.
Health Sciences Institute
Mason, OH, USA

Rawat Charoensawad MD

Director, Rawat Clinic and
Clinical Consultant, Biophile Training Center
Bangkok, Thailand

David E. Cohen, MD, MPH

Vice Chairman for Clinical Affairs
Director of Allergic, Occupational, and Environmental Dermatology
New York University School of Medicine
Department of Dermatology
New York, NY, USA

Joel L. Cohen MD

About Skin Dermatology
Englewood, CO, USA
and
Department of Dermatology
University of Colorado
Englewood, CO, USA

Marc Cornell

Director
L'Oréal Research
Clark, NJ, USA

Felicia Dixon PhD

Manager
L'Oréal Institute for Ethnic Hair and Skin Research
Chicago, IL, USA

Jeff C. Donovan MD, PhD

Division of Dermatology
University of Toronto
Toronto, Canada

Jeffrey S. Dover MD, FRCPC, FRCP (Glasgow)

Associate Clinical Professor of Dermatology
Yale University School of Medicine,
Adjunct Professor of Dermatology
Dartmouth Medical School,
SkinCare Physicians
Chestnut Hill, MA, USA

Zoe D. Draelos MD

Consulting Professor
Department of Dermatology
Duke University School of Medicine
Durham, NC, USA

Kenneth L. Edelson MD, FAACS

Clinical Instructor, Department of Dermatology
Mount Sinai School of Medicine
Attending Physician, Dermatology, The Mount Sinai Hospital
New York, NY, USA and
Private Practice
Cosmetic, Dermatologic and Laser Surgery
New York, NY, USA

Angela Ellington

Assistant Vice President
L'Oréal Institute for Ethnic Hair and Skin Research
Chicago, IL, USA

Keith Ertel MS, PhD

Principal Scientist
Procter & Gamble Co.
Cincinnati, OH, USA

Steven R. Feldman MD, PhD

Center for Dermatology Research
Departments of Dermatology, Pathology, and Public Health Sciences
Wake Forest University School of Medicine
Winston-Salem, NC, USA

Richard E. Fitzpatrick MD

Founder, Chair, Scientific Advisory Board
SkinMedica, Inc.
Carlsbad, CA, USA
and
Associate Clinical Professor
Division of Dermatology
UCSD School of Medicine
San Diego, CA, USA

Heather Focht MA

Section Head
Procter & Gamble Co.
Cincinnati, OH, USA

Peter Foltis MS

Director of Scientific Affairs and Skin Care
L'Oréal USA
Clark, NJ, USA

Scott R. Freeman MD

Dermatology Resident
University of Colorado at Denver and Health Sciences Center
Denver, CO, USA

Contributors

Bryan B. Fuller PhD

Founder, CEO
Therametics
and
Adjunct Professor of Biochemistry and Molecular Biology
University of Oklahoma Health Sciences Center
Oklahoma City, OK, USA

Angelike Galdi MS

L'Oréal USA
Clark, NJ, USA

Roy Geronemus MD

Laser & Skin Surgery Center of New York
New York, NY, USA
and
New York University Medical Center
New York, NY, USA

John Gilley

Principal Researcher
Procter & Gamble Cosmetics
Hunt Valley, MD, USA

David J. Goldberg MD

Clinical Professor and Director of Laser Research
Department of Dermatology at the Mount Sinai School of Medicine
New York, NY, USA
and
Director, Skin Laser & Surgery Specialists of New York and New Jersey
New York, NY, USA

Mitchel P. Goldman MD

Volunteer Clinical Professor of Dermatology/Medicine
University of California, San Diego and
Dermatology/Cosmetic Dermatology Associates of La Jolla, Inc.
San Diego, CA, USA

Robert Goodman

Thomas J. Stephens & Associates Inc.
Dallas Research Center
Carrollton, TX, USA

Emmy M. Graber MD

SkinCare Physicians
Chestnut Hill, MA, USA

Corinne Granger MD

Director of Instrumental Cosmetics
L'Oréal Research
Asnières, France

Barbara A. Green RPh, MS

VP Clinical Affairs, NeoStrata Company, Inc.
Princeton, NJ, USA

Pearl Grimes MD

Director
Vitiligo and Pigmentation Institute of Southern California
Los Angeles, CA, USA
and
Clinical Professor
Division of Dermatology
David Geffen School of Medicine
University of California–Los Angeles
Los Angeles, CA, USA

Sylvie Guichard

Make Up Scientific Communication Director
L'Oréal Recherche
Chevilly-Larue, France

Rebat M. Halder MD

Professor and Chair
Department of Dermatology
Howard University College of Medicine
Washington, DC, USA

C. William Hanke MD, MPH, FACP

Professor of Dermatology
University of Iowa
Carver College of Medicine
Iowa City, IA, USA
and
Clinical Professor of Otolaryngology-Head and Neck Surgery
Indiana University School of Medicine
Indianapolis, IN, USA

Christopher Harmon MD

Total Skin and Beauty Dermatology Center
Birmingham, AL, USA

Erik Hasenoehrl PhD

Procter & Gamble Co.
Ivorydale Technical Center
Cincinnati, OH, USA

Jillian Havey

Department of Dermatology
Feinberg School of Medicine
Northwestern University
Chicago, IL, USA

Catherine Heusèle

LVMH Recherche
Saint Jean de Braye, France

Maria Hordinsky MD

Professor and Chair
Department of Dermatology
University of Minnesota
Minneapolis, MN, USA

M. Amanda Jacobs MD

Senior Associate Consultant
Department of Dermatology
Mayo Clinic
Rochester, MN, USA

Anthony W. Johnson PhD

Director, Skin Clinical Science
Unilever HPC R&D
Trumbull, CT, USA

Behrooz Kasraee MD

Department of Dermatology
Geneva University Hospital
Geneva, Switzerland

Paul Kavanaugh ms

Thomas J. Stephens & Associates Inc.
Dallas Research Center
Carrollton, TX, USA

Gürkan Kaya MD, PhD

Department of Dermatology
Geneva University Hospital
Geneva, Switzerland

Dianna C. Kenneally chE

Principal Scientist
Procter & Gamble Co.
Mason, OH, USA

Misbah H. Khan MD

Fellow, Procedural Dermatology
Northwestern University and
Northwestern Memorial Hospital
Chicago, IL, USA

Chesahna Kindred MD, MBA

Clinical Research Fellow
Department of Dermatology
Howard University College of Medicine
Washington, DC, USA

Helen Knaggs PhD

Vice President
Nu Skin Global Research and Development
Provo, UT, USA

Alexandra Kowcz MS, MBA

VP, US R&D
Beiersdorf Inc.
Wilton, CT, USA

Thomas Krause PhD

Polymer Chemist
Wella/Procter & Gamble Service GmbH
Upstream Design Styling
Darmstadt, Germany

Heh Shin R. Kwak MD

Knott Street Dermatology
301 NW Knott Street
Portland, OR, USA

Olivier de Lacharrière MD, PhD

L'Oréal Recherche
Clichy, France

Jan Lephart

Senior Director
Nu Skin Global Research & Development
Provo, UT, USA

Karl Lintner MSc, PhD

Technical Advisor
Enterprise Technology/Sederma SAS
Le Perray en Yvelines
Cedex, France

Stephen Mandy MD

Volunteer Professor of Dermatology
University of Miami
Miami, FL, USA
and
Private Practice
Miami Beach, FL, USA

David McDaniel MD

Laser Skin & Vein Center of Virginia
Virginia Beach, VA, USA
and
Eastern Virginia Medical School
Virginia Beach, VA, USA

Gillian McFeat PhD

Gillette Reading Innovation Centre
Procter & Gamble Co.
Reading, UK

Francis McGlone PhD

Perception and Behaviour Group
Unilever Research & Development
Wirral, UK

Rahul C. Mehta PhD

Senior Scientific Director
SkinMedica, Inc.
Carlsbad, CA, USA

Sanjeev Midha PhD

Principal Scientist
Procter & Gamble Beauty Science
Cincinnati, OH, USA

Gary D. Monheit MD

Total Skin & Beauty Dermatology Center, PC, and
Clinical Associate Professor
Departments of Dermatology and Ophthalmology
University of Alabama at Birmingham
Birmingham, AL, USA

Dominique Moyal PhD

L'Oréal Recherche
Asnières, France

Contributors

Vic Narurkar MD, FAAD

Director
Bay Area Laser Institute
San Francisco, CA, USA
and
University of California Davis Medical School
Sacramento, CA, USA

Mark S. Nestor MD, PhD

Director
Center for Cosmetic Enhancement
Aventura, FL, USA
and
Voluntary Associate Professor of Dermatology and Cutaneous Surgery
University of Miami
Miller School of Medicine
Miami, FL, USA

Frauke Neuser PhD

Principal Scientist
Procter & Gamble Technical Centres Ltd
Rusham Park, Whitehall Lane
Egham
Surrey, UK

Keyvan Nouri MD

Professor of Dermatology and Otolaryngology
Director of Mohs, Dermatologic and Laser Surgery
Director of Surgical Training
Department of Dermatology and Cutaneous Surgery
University of Miami Miller School of Medicine
Miami, FL, USA

Christian Oresajo PhD

Assistant Vice President
L'Oréal USA
Clark, NJ, USA

Irwin Palefsky

CEO
Cosmetech Laboratories Inc.
Fairfield, NJ, USA

Sreekumar Pillai PhD

Associate Principal Scientist
L'Oréal Research
Clark, NJ, USA

Crystal Porter PhD

Manager
L'Oréal Institute for Ethnic Hair and Skin Research
Chicago, IL, USA

Chad Prather MD

Total Skin and Beauty Dermatology Center
Birmingham, AL, USA

Babar K. Rao MD

Chair
Department of Dermatology
University of Medicine and Dentistry New Jersey
Robert-Wood Johnson Medical School
Somerset, NJ, USA

David Reilly PhD

One Discover
Colworth Park
Sharnbrook
Bedford, UK

Phoebe Rich MD

Oregon Dermatology and Research Center
Portland, OR, USA

Randall Roenigk MD

Robert H. Kieckhefer Professor, Chair
Department of Dermatology
Mayo Clinic
Rochester, MN, USA

Katie Rossy MD

New York Medical College
New York, NY, USA

Véronique Roulier

Make Up Development Director
L'Oréal Recherche
Chevilly-Larue, France

Rene Rust PhD

Senior Scientist, Hair and Scalp Care
Wella/Procter & Gamble Service GmbH
Darmstadt, Germany

Neil Sadick MD, FAAD, FAACS, FACPh

Clinical Professor
Weill Cornell Medical College
New York, NY, USA
and
Sadick Dermatology
New York, NY, USA

Jean H. Saurat MD

Department of Dermatology
Geneva University Hospital
Geneva, Switzerland

Ulrich Scherdin PhD

Beiersdorf AG
Hamburg, Germany

Andrea M. Schoelermann PhD

Beiersdorf AG
Hamburg, Germany

Harald Schlatter PhD

Principal Toxicologist
Procter & Gamble German Innovation Centre
Darmstadt, Germany

Douglas Schoon

Schoon Scientific and Regulatory Consulting, LLC
Dana Point, CA, USA

Annette Schwan-Jonczyk PhD

Wella/Procter & Gamble Service GmbH
Global Hair Methods
Darmstadt, Germany

James R. Schwartz PhD

Research Fellow
Procter & Gamble Beauty Science
Cincinnati, OH, USA

Gerhard Sendelbach PhD

Wella/Procter & Gamble Service GmbH
Global Hair Methods
Darmstadt, Germany

Sunil J. Sirdesai PhD

Co-Director of Research and Development
OPI Products Inc.
North Hollywood
Los Angeles, CA, USA

Olivier Sorg PhD

Department of Dermatology
Geneva University Hospital
Geneva, Switzerland

Aieska de Souza MD, MSc

New York University School of Medicine
Department of Dermatology
New York, NY, USA

Thomas J. Stephens PhD

Thomas J. Stephens & Associates Inc.
Dallas Research Center
Carrollton, TX, USA

Lindsay C. Strowd MD

Center for Dermatology Research
Department of Dermatology
Wake Forest University School of Medicine
Medical Center Boulevard
Winston-Salem, NC, USA

Diane Thiboutot MD

Pennsylvania State University College of Medicine
Milton S. Hershey Medical Center
Hershey, PA, USA

Jens J. Thiele MD, PhD

Dermatology Specialist, Inc.
Oceanside, CA, USA

Carl Thornfeldt MD, FAAD

CTDerm, PC
Fruitland, ID, USA and
Episciences, Inc.
Boise, ID, USA

Emily Tierney PhD

Mohr Surgery and Procedural Dermatology Fellow
Laser and Skin Surgery Center of Indiana
Carmel, IN, USA
and
Department of Dermatology
Boston University School of Medicine
Boston, MA, USA

Marcela Valenzuela PhD

Senior Scientist
Procter & Gamble Beauty Science
Cincinnati, OH, USA

Eugene J. Van Scott MD

Private Practice
Abington, PA, USA

Voraphol Vejjabhinanta MD

Clinical instructor
Suphannahong Dermatology Institute
Bangkok, Thailand and
Mohs, Dermatologic and Laser Surgery Fellow
Department of Dermatology and Cutaneous Surgery
University of Miami Miller School of Medicine
Miami, FL, USA

Sarah A. Vickery PhD

Principal Scientist
Procter & Gamble Cosmetics
Hunt Valley, MD, USA

Teresa M. Weber PhD

Director, Clinical and Scientific Affairs
Beiersdorf Inc.
Wilton, CT, USA

Robert Weiss MD

Maryland Laser Skin & Vein Institute
Hunt Valley, MD, USA
and
Johns Hopkins University School of Medicine
Baltimore, MD, USA

Steve Wood PhD

Director
Phamanex Global Research and Development
Provo, UT, USA

Peter Wyatt

Senior Engineer
Procter & Gamble Cosmetics
Hunt Valley, MD, USA

Margarita Yatskayer MS

L'Oréal Research USA
Clark, NJ, USA

Ruey J. Yu PhD, OMD

Private Practice
Chalfont, PA, USA

Foreword

Dermatology began as a medical specialty but over the last half century it has evolved to combine medical and surgical aspects of skin care. Mohs skin cancer surgery was the catalyst that propelled dermatology to become a more procedurally based specialty. The combination of an aging population, economic prosperity, and technological breakthroughs have revolutionized cosmetic aspects of dermatology in the past few years. Recent minimally invasive approaches have enhanced our ability to prevent and reverse the signs of photoaging in our patients. Dermatologists have pioneered medications, technologies, and devices in the burgeoning field of cosmetic surgery. Cutaneous lasers, light, and energy sources, the use of botulinum exotoxin, soft tissue augmentation, minimally invasive leg vein treatments, chemical peels, hair transplants, and dilute anesthesia liposuction have all been either developed or improved by dermatologists. Many scientific papers, reviews and textbooks have been published to help disseminate this new knowledge.

Recently it has become abundantly clear that unless photoaging is treated with effective skin care and photoprotection, cosmetic surgical procedures will not have their optimal outcome. Cosmeceuticals are integral to this process but, while some rigorous studies exist, much of the knowledge surrounding cosmeceuticals is hearsay and non-data based marketing information. Given increasing requests by our patients for guidance on the use of cosmeceuticals, understanding this body of information is essential to the practicing dermatologist.

In *Cosmetic Dermatology: Products and Procedures*, Zoe Draelos has compiled a truly comprehensive book that addresses the broad nature of the subspecialty. Unlike prior texts on the

subject she has included all the essential topics of skin health. The concept is one that has been long awaited and will be embraced by our dermatologic colleagues and other health care professionals who participate in the diagnosis, and treatment of the skin.

No one is better suited to edit a textbook of this scope than Dr. Zoe Draelos. She is an international authority on Cosmetic Dermatology and she has been instrumental in advancing the field of cosmeceuticals by her extensive research, writing, and teachings. This text brings together experts from industry, manufacturing, research, and dermatology and highlights the best from each of these fields.

Doctor Draelos has divided the book into four different segments. The book opens with *Basic Concepts*, which includes physiology pertinent to cosmetic dermatology, and delivery of cosmetic skin actives. This section is followed by *Hygiene Products*, which include cleansers, moisturizers, and personal care products. The section on *Adornment* includes colored facial products, nail cosmetics, and hair cosmetics. The book concludes with a section on *Antiaging*, which includes cosmeceuticals, injectable antiaging techniques, resurfacing techniques, and skin modulation techniques.

You will enjoy dipping into individual chapters or sections depending on your desires, but a full read of the book from start to finish will no doubt enhance your knowledge base and prepare you for the full spectrum of cosmetic dermatology patients.

Enjoy.

Jeffrey S. Dover
August 2009

Introduction: Definition of Cosmetic Dermatology

This text is intended to function as a compendium on the field of cosmetic dermatology. Cosmetic dermatology knowledge draws on the insight of the bench researcher, the innovation of the manufacturer, the formulation expertise of the cosmetic chemist, the art of the dermatologic surgeon, and the experience of the clinical dermatologist. These knowledge bases heretofore have been presented in separate textbooks written for specific audiences. This approach to information archival does not provide for the synthesis of knowledge required to advance the science of cosmetic dermatology.

The book begins with a discussion of basic concepts relating to skin physiology. The areas of skin physiology that are relevant to cosmetic dermatology include skin barrier, photoaging, sensitive skin, pigmentation issues, and sensory perceptions. All cosmetic products impact the skin barrier, it is to be hoped in a positive manner, to improve skin health. Failure of the skin to function optimally results in photoaging, sensitive skin, and pigmentation abnormalities. Damage to the skin is ultimately perceived as sensory anomalies. Skin damage can be accelerated by products that induce contact dermatitis. While the dermatologist can assess skin health visually, non-invasive methods are valuable to confirm observations or to detect slight changes in skin health that are imperceptible to the human eye.

An important part of cosmetic dermatology products is the manner in which they are presented to the skin surface. Delivery systems are key to product efficacy and include creams, ointments, aerosols, powders, and nanoparticles. Once delivered to the skin surface, those substances designed to modify the skin must penetrate with aid of penetration enhancers to ensure percutaneous delivery.

The most useful manner to evaluate products used in cosmetic dermatology is by category. The book is organized by product, based on the order in which they are used as part of a daily routine. The first daily activity is cleansing to ensure proper hygiene. A variety of cleansers are available to maintain the biofilm to include bars, liquids, non-foaming, and antibacterial varieties. They can be applied with the hands or with the aid of an implement. Specialized products to cleanse the hair are shampoos, which may be useful in prevention of scalp disease.

Following cleansing, the next step is typically moisturization. There are unique moisturizers for the face, hands, and feet. Extensions of moisturizers that contain other active

ingredients include sunscreens. Other products with a unique hygiene purpose include antiperspirants and shaving products. This completes the list of major products used to hygiene and skincare purposes.

The book then turns to colored products for adorning the body. These include colored facial cosmetics, namely facial foundations, lipsticks, and eye cosmetics. It is the artistic use of these cosmetics that can provide camouflaging for skin abnormalities of contour and color. Adornment can also be applied to the nails, in the forms of nail cosmetics and prostheses, and to the hair, in the form of hair dyes, permanent waves, and hair straightening.

From adornment, the book addresses the burgeoning category of cosmeceuticals. Cosmeceuticals can be divided into the broad categories of botanicals, antioxidants, anti-inflammatories, peptides and proteins, cellular growth factors, retinoids, exfoliants, and nutraceuticals. These agents aim to improve the appearance of aging skin through topical applications, but injectable products for rejuvenation are an equally important category in cosmetic dermatology. Injectables can be categorized as neurotoxins and fillers (hyaluronic acid, hydroxyapatite, collagen, and polylactic acid).

Finally, the surgical area of cosmetic dermatology must be addressed in terms of resurfacing techniques, skin modulation techniques, and skin contouring techniques. Resurfacing can be accomplished chemically with superficial and medium depth chemical peels or physically with microdermabrasion and dermabrasion. The newest area of resurfacing involves the use of lasers, both ablative and non-ablative. Other rejuvenative devices than collagen and pigmentation include intense pulsed light, radiofrequency, and diodes. These techniques can be combined with liposuction of the body and face to recontour the adipose tissue underlying the skin.

The book closes with a discussion of how cosmetic dermatology can be implemented as part of a treatment regimen for aging skin, acne, rosacea, psoriasis, and eczema. In order to allow effective synthesis of the wide range of information included in this text, each chapter has been organized with a template to create a standardized presentation. The chapters open with basic concepts pertinent to each area. From these key points, the authors have developed their information to define the topic, discuss unique attributes, advantages and disadvantages, and indications.

Introduction

It is my hope that this book will provide a standard textbook for the broad field of cosmetic dermatology. In the past, cosmetic dermatology has been considered a medical and surgical afterthought in dermatology residency programs and continuing medical education sessions. Perhaps this was in part because of the lack of a textbook defining the knowl-

edge base. This is no longer the case. Cosmetic dermatology has become a field unto itself.

Zoe D. Draelos
May 2009