



The International Journal of Prosthodontics

Management of Patients' Oral Rehabilitative Needs Across the Age Spectrum

ISSN 0893-2174 (print)
ISSN 1942-4426 (online)

Official Journal of

International College of Prosthodontists
International Society for Maxillofacial
Rehabilitation

German Society for Prosthodontics and
Dental Materials Science

Italian Academy of Prosthetic Dentistry

Editor-in-Chief

George A. Zarb
Toronto, Ontario, Canada

Assistant to the Editor

Janet deWinter
E-mail: ijp.prostho@utoronto.ca

Editorial Advisory Board

John A. Hobkirk, London, United Kingdom

Rhonda F. Jacob, Houston, Texas, USA

Iven Klineberg, Sydney, Australia

Michael MacEntee, Vancouver, BC, Canada

Regina Mericske-Stern, Bern, Switzerland

Ignace Naert, Leuven, Belgium

Winfried Walther, Karlsruhe, Germany

Ann Wennerberg, Göteborg, Sweden

Associate Editors

Tomas Albrektsson, Göteborg, Sweden

Nikolai J. Attard, Malta

Limor Avivi-Arber, Toronto, Ontario, Canada

David Bartlett, London, United Kingdom

Francesco Bassi, Torino, Italy

Nico H.J. Creugers, Nijmegen, The Netherlands

Joke Duyck, Leuven, Belgium

Emad Elsubeihi, Ajman, United Arab Emirates

Gary Goldstein, New York, New York, USA

Jamie del Rio Highsmith, Madrid, Spain

Matthias Kern, Kiel, Germany

Kiyoshi Koyano, Fukuoka, Japan

Li-Deh Lin, Taipei, Taiwan

Yoshinura Maeda, Osaka, Japan

Peter Owen, Johannesburg, South Africa

Argiris Pissiotis, Thessaloniki, Greece

Clark M. Stanford, Chicago, Illinois, USA

Victoria Franke Stenport, Göteborg, Sweden

Terry Walton, Sydney, Australia

Shane White, Los Angeles, California, USA

Yongsheng Zhou, Beijing, China

Nicola Zitzmann, Basel, Switzerland

Abstract/Book Review Editor

Steven Sadowsky, San Francisco, California, USA

Reviewers

Sara Alfadda, Riyadh, Saudi Arabia

Mario Bresciano, Turin, Italy

Senay Canay, Ankara, Turkey

Mijin Choi, New York, New York, USA

David Chvartzsaid, Toronto, Ontario, Canada

Omar El-Mowafy, Toronto, Ontario, Canada

Elham Emami, Montreal, Quebec, Canada

Aaron Fenton, Toronto, Ontario, Canada

Yoav Finer, Toronto, Ontario, Canada

Brian Fitzpatrick, Brisbane, Australia

Lily Garcia, Iowa City, Iowa, USA

Neal Garrett, Los Angeles, California, USA

Martin Gross, Tel Aviv, Israel

Marcio Lima Grossi, Porto Alegre, Brazil

Ingrid Grunert, Innsbruck, Austria

Wieslaw Hedzelek, Poznan, Poland

Yvonne Hoods-Moonsammy,
Johannesburg, South Africa

Torsten Jemt, Göteborg, Sweden

Ting Jiang, Beijing, China

Stig Karlsson, Göteborg, Sweden

Ender Kazazoglu, Istanbul, Turkey

Petros Koidis, Thessaloniki, Greece

Mats Kronstrom, Seattle, Washington, USA

Danielle Layton, Brisbane, Australia

Sunyoung Ma, Dunedin, New Zealand

Kenneth Malament, Boston, Massachusetts, USA

Maria Menini, Genoa, Italy

Caroline Nguyen, Vancouver, Canada

Ridwaan Omar, Kuwait, Middle East

Ulf Örtengren, Tromsø, Sweden

Paolo Pera, Genova, Italy

Haralampos Petridis, London, United Kingdom

Harold W. Preiskel, London, United Kingdom

Jeffrey E. Rubenstein, Seattle, Washington, USA

Thomas Salinas, Rochester, Minnesota, USA

Takahashi Sawase, Nagasaki, Japan

Marc Schmitter, Wurzburg, Germany

Sang-Wan Shin, Seoul, Korea

Ami Smidt, Jerusalem, Israel

Esam Tashkandi, Riyadh, Saudi Arabia

James Taylor, Ottawa, Ontario, Canada

Arzu Tezvergil-Mutluay, Turku, Finland

Pekka K. Vallittu, Turku, Finland

Katleen Vandamme, Leuven, Belgium

Michael Walter, Dresden, Germany

Stefan Wolfart, Aachen, Germany

Chris Wyatt, Vancouver, BC, Canada

Jiang Xinquan, Shanghai, China

Publisher

H. W. Haase

Executive Vice President

William G. Hartman

Director, Journal Publications

Lori A. Bateman

Managing Editor

Hallie Koontz

Production Manager

Diane Curran

Advertising/subscription information:

Quintessence Publishing Co, Inc

4350 Chandler Drive

Hanover Park, Illinois 60133

Telephone (630) 736-3600

Toll-free (800) 621-0387

Fax: (630) 736-3633

Advertising email: plochner@quintbook.com

Subscription email: mhartman@quintbook.com

Web site: www.quintpub.com

Subscription rates (includes online version):

Regular rate for North America is \$205 per year; institutional rate is \$555 (Canadian subscribers add applicable GST). International rate (outside North America) is \$245; \$595 institutional. International subscribers add \$40 to international rate for air mail. Student rate \$115 per year (\$155 international); verification should accompany order. Single issue \$40. Subscription may begin at any time. Please allow 6 weeks for any change of address notification to be processed. Claims for missing issues will be serviced only within 6 months of publication date. Otherwise, single copy price will be charged on missing issues.

Copyright © 2017 by Quintessence Publishing Co, Inc.

All rights reserved. No part of this journal may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information and retrieval system, without permission of the publisher through the Copyright Clearance Center. Single photocopies of single articles may be made for personal use as allowed by national copyright laws. Please contact the Copyright Clearance Center for permission requests and to pay fees: Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923 (www.copyright.com). The journal's ID number (ISSN) is 0893-2174.

The views expressed herein are those of the authors.

Information included herein is not professional advice and is not intended to replace the judgment of a practitioner with respect to particular patients, procedures, or practices. To the extent permissible under applicable laws, Quintessence Publishing Company disclaims responsibility for any injury and/or damage to persons or property as a result of any actual or alleged libelous statements, infringement of intellectual property or other proprietary or privacy rights, or from use or operation of any ideas, instructions, procedures, products, or methods contained in the material therein. The publisher and editors assume no responsibility for unsolicited manuscripts.

Advertising Policy: All advertising appearing in *The International Journal of Prosthodontics* must be approved by the editorial staff. The publication of an advertisement does not constitute on the part of the Journal or publisher a guaranty or endorsement of the quality or value of the advertised products or services or of any of the representations or the claims made by the advertisers.

The International Journal of Prosthodontics is published bimonthly by Quintessence Publishing Co, Inc, 4350 Chandler Drive, Hanover Park, Illinois 60133.

Postmaster: Send address changes to Quintessence Publishing Co, Inc, 4350 Chandler Drive, Hanover Park, Illinois 60133.

The International Journal of Prosthodontics is abstracted and/or indexed in MEDLINE/PubMed, Current Contents/Clinical Medicine, and Science Citation Index Expanded.

Manuscript submission:

www.manuscriptmanager.com/ijp

Printed in USA