Symposium: ABJS Carl T. Brighton Workshop on Implant Wear and Tribocorrosion of Total Joint Replacements

Editorial Comment: ABJS Carl T. Brighton Workshop on Implant Wear and Tribocorrosion of Total Joint Replacements

Stuart B. Goodman MD, PhD, Timothy M. Wright PhD

The Carl T. Brighton Workshop on Implant Wear and Tribocorrosion of Total Joint Replacements was held on November 21 to 23, 2013 in Tampa, FL USA under the auspices of the Association of Bone and Joint Surgeons® and *Clinical Orthopaedics and Related*

Research®. Overall, the workshop provided cause for optimism that the current challenges in total joint replacement will be surmounted by ongoing research, innovation and continued outcome studies and national registry data.

Total joint replacement has demonstrated great success in relieving pain and improving function for many millions of patients. However, open questions and challenges remain in terms of defining appropriate patient selection and surgical technique, as well as in identifying the best bearing surfaces and implant designs, especially for younger more active patients.

The workshop assembled an expert group of clinicians, biologists, bioengineers, and material scientists, and tasked the participants with formulating answers to a number of key questions on implant wear and tribocorrosion. These questions were introduced by one or two experts with overview lectures, which were then followed by an open discussion. Finally, formal written answers to the questions were finalized in breakout sessions in which the appropriate expert group (Clinical, Biological,

The authors certifies that they, or any members of their immediate families, have no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article. All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request. The opinions expressed are those of the writers, and do not reflect the opinion or policy of *CORR*® or the Association of Bone and Joint Surgeons®.

S. B. Goodman MD, PhD (✉)
Department of Orthopaedic Surgery and
Bioengineering, Stanford University
Medical Center, 450 Broadway St., M/C
6342, Redwood City, CA 94063, USA
e-mail: goodbone@stanford.edu

T. M. Wright PhD
Orthopaedic Biomechanics, Hospital for
Special Surgery, New York, NY, USA

Stuart B. Goodman MD, PhD

Timothy M. Wright PhD

Symposium: ABJS Carl T. Brighton Workshop on Implant Wear and Tribocorrosion of Total Joint Replacements

Biomechanical/Materials Science) vetted and revised a manuscript draft written by the lecturers. These were presented in a final session during which expert groups further refined their answers, highlighted deficiencies in our knowledge base, and provided suggestions for future research. While most participants were seasoned laboratory and clinician scientists, the workshop also invited three young investigators whose attendance was supported by the Hip and Knee Societies, and they participated in every element of the process.

This special issue of *CORR*[®] summarizes the main findings from this workshop. Subjects highlighted include longer-term studies on the use of cross-linked polyethylene, ceramic-on-ceramic (CoC) and metal-on-metal (MoM) bearings, focusing on both successes and new problems encountered. Indeed, much of the workshop centered on issues related to surveillance, diagnosis, treatment and outcome of MoM bearings and implants with multiple modular junctions. Other bearing couples and implant designs were also discussed in detail. For example, the use of crosslinked polyethylene has

substantially decreased the incidence of wear and periprosthetic osteolysis, but some imperfectly placed implants with thin polyethylene have fractured. Hard-on-hard bearings such as MoM and CoC must be aligned with great precision, or wear will be accelerated, with potentially serious adverse consequences.

We are grateful to the Association of Bone and Joint Surgeons[®] for sponsoring this Carl T. Brighton Workshop on Implant Wear and Tribocorrosion of Total Joint Replacements, and we are proud to share the manuscripts it produced in *CORR*[®].