

Dr Ronal Sekel OAM

Orthopaedic Surgeon



Specific Expertise

Hip and knee replacement surgery
Revision hip and knee replacement surgery
Biomedical engineering
Prosthesis design

Current Positions

Independent Medical Examiner
Senior Orthopaedic Surgeon, St George Private Hospital
Member Arthroplasty Society of Australia
Member, AOA Medicolegal Society
Member, Medicolegal Society of NSW
Voluntary Fire Fighter, NSW Rural Fire Brigade

Previous Positions

- Royal Australasian College of Surgeons representative to the Red Cross Blood Bank Committee (RACOS) with a specific interest in introducing auto transfusion techniques in Australia (1993 to 1998)
- Founding Chairman and Chief Researcher of Portland Orthopaedics Ltd, a joint replacement research, development company.
- Education Programme Convener for The St George Hospital Orthopaedics Skills Laboratory – an undergraduate and post-graduate teaching facility in orthopaedics
- Warden of Clinical Studies of the Pacific Islands Orthopaedic Training Programme
- President, Australasian Orthopaedic Trauma Society
- Director of an aircraft charter and commuter company, organising the aerial health retrieval service and coordinating with the Air Ambulance
- Surgical Programme Convener, International Rheumatology Conference (APLAR) 1985 with 7,000 delegates
- Representative of the Australian Orthopaedic Association to the Commonwealth of Australia's Committee on "Surgically Implanted Prostheses and Homograft Items List"
- Inaugural Director, New South Wales Bone Bank

Publications

Flexor Tendon Repair in 'No Man's Land' – An Experimental Study
The Hand (Volume 9, Number 2) 1977

Calcium Infusion in Painful Paget's disease of the Bone
The Lancet (Volume 1, Number 7799) 1973

Tc-99m MDP, Gallium-67 and TC-99m White Cell Scanning in Detection of Infected Orthopaedic Implants

P Monaghan, R McLean, G Larcos, R Smart, N Lyons, R Sekel – The St George Hospital

The Journal of Nuclear Medicine (Volume 30, Number 5) May 1989 (page 754)

Proceedings of the 36th Annual Meeting – Abstract Number 107

Multi-Focal Low Grade Osteomyelitis in an Adolescent

R McLean and R Sekel

Newsletter of Australian and New Zealand Society of Nuclear Medicine (Volume 22, Number 1) March 1991 (page 12)



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Leeds-Keio versus Autologous Reconstruction of the Ovine Anterior Cruciate Ligament

G J Rogers, K Schindhelm, B K Milthorpe, P J Hall, C R Howlett, R Sekel, J Goldberg and W Viglione

The Journal of Bone and Joint Surgery (Volume 72B, Number 6)

November 1990 (page 1103)

Proceedings of 49th Annual Scientific Meeting of Australian Orthopaedic Association, Canberra, September 1989

Autograft and Leeds-Keio Reconstructions of the Ovine Anterior Cruciate Ligament

K Schindhelm, G Rogers, B Milthorpe, P J Hall, C R Howlett, R Sekel, J Goldberg and W Viglione

Clinical Orthopaedic and Related Research (Number 267) June 1991 (pages 278 to 293)

Candida Albicans Infection of the Spine

R Sekel, A Loeffler and Y Mattan, The St George Hospital

The Journal of Bone and Joint Surgery (Volume 74B) 1992 (page 39)

Proceedings of Australian and New Zealand Orthopaedic Associations, Christchurch, August 1991

Arachnoiditis After Epidural Depo-Medrol: Case Report

R Sekel

The Journal of Bone and Joint Surgery (Volume 74B) 1992 (page 79)

Proceedings of Spine Society of Australia, Canberra 4 and 5 June 1991

Total Hip Arthroplasty Complicated by Malignant Fibrous Histiocytoma: Case Reports

M Solomon and R Sekel

The Journal of Arthroplasty (Volume 7, Number 4) December 1992 (page 549)

Morse Tapers

Mark Nabarro, S P Tan and R Sekel

The Journal of Bone and Joint Surgery (Volume 76B) 1994

Orthopaedic Proceedings – Supplement 11 and 111

Australian Orthopaedic Association, Adelaide, September 1993

Supracondylar fractures above a total knee arthroplasty. A novel use of the Huckstepp nail

R Sekel and AS Newman

The Journal of Arthroplasty 1994 Aug;9(4):445-7

An Unusual Cause of Thigh Pain after Total Hip Arthroplasty – Fasciata Herniae

J E D Higgs, A Chong, P Haertsch, R Sekel and A Leicester

The Journal of Arthroplasty (Volume 10, Number 2) 1995

Clinical Coding Study

J Callen, J McDonald and R Sekel

The University of Sydney, Faculty of Health Sciences

Current Topics in Health Sciences,

Wear and Friction Properties of a Novel Carbon Alloy Surface

M J Kenny, L S Weilunski, M D Scott, R A Clissold, L Williamson and R Sekel

The Journal of Bone and Joint Surgery (BR) 1995: 77B Supplement 1



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Orthopaedic Proceedings

Measurement of Periprosthetic Bone Density in Hip Arthroplasty using Dual-Energy X-ray Absorptiometry: Reproducibility of Measurements
R C Smart, S Barbagalla, G L Slater, R S Kuo, S P Butler, R P Drummond and R Sekel
The Journal of Arthroplasty (Volume 11, Number 4) June 1996

Hip Fracture in Elderly Men: Prognostic Factors and Outcomes
T H Diamond, S W Thornley, R Sekel and P Smerdely
Medical Journal of Australia (Volume 167, Number 8) October 1997
(pages 412 to 415)

Hip Fracture in Elderly Men: The Importance of Subclinical Vitamin D Deficiency and Hypogonadism
T H Diamond, P Smerdely, N Kormas, R Sekel, T Vu and P Day
Medical Journal of Australia (Volume 169, Number 3) August 1998 (pages 138 to 141)

Familial Slipped Capital Femoral Epiphysis: A Report and Considerations in Management
A Diwan, T Diamond, R Clarke, M Patel, G Murrell and R Sekel
The Australian and New Zealand Journal of Surgery (Volume 68) 1998
(pages 647 to 649)

Uncemented Hip Replacement Stem Fixation: A New Design Trend
R Sekel
APLAR Journal of Rheumatology (Volume 2, Number 3) 3 January 1999
(pages 276 to 278)

Hip Replacement System Inspired by Lounge Chair
R Sekel interviewed by Leanda Coleman
Australian Innovation Magazine Volume 3 March-May 2001
(Pages 15 to 17)

Osteotomy of the Knee – Is there a Seat at the Table?
John A.L. Hart, Ron Sekel
The Journal of Arthroplasty Vol 17 No 4 Suppl 1 2002

The Engineering Design of the Margron Femoral Hip Prosthesis System
Richard B Frost, Ronald Sekel & Leonid Kandel
Journal of Engineering Design Vol 14 No 2 June 2003
(Pages 115 to 127)

Textbook: Modulare Revisionsendoprothetik des Hueftgelenks
Hip Revision Concepts (Pg 25-32)
R Sekel, R W Eberle, B Miles
Clinical Results of the Portland Orthopaedics Margron Modular Hip System
(Pg 242-247)
R Sekel, R W Eberle
2004

Uncemented Total Hip Replacement Stem Loosening after Long Term Compressive Stress Application: A Simulated FEA Study of Cortical Bone Remodeling
D Jung, S Tsutsumi, R Nakai, K Ikeuchi, R Sekel
JSME International Journal, Series C, Vol 47, No 4, 2004



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(Pg 1079-1085)

Accelerated Corrosion Evaluation of Modular Implants: An In-Vitro Biomechanical Study

R M Gillies, R C Appleyard, P Wingrove, D Barker, R Sekel
Proceedings of the International Federation for Medical
And Biological Engineering
Volume 12, 2005

Co-deposition of a Bisphosphonate with Hydroxyapatite for Improved Implant Fixation

K E McLeod, S Kumar, G I Anderson, N Dutta,
R St C Smart, N H Voelcker, R Sekel
Proceedings of the International Federation for Medical & Biological
Engineering (Singapore)
Volume 12, Article 2B3-08 December 2004

Absorption of a Bisphosphonate onto Hydroxyapatite Using a Novel Co-deposition Technique for Bone Growth Enhancement

K McLeod, S Kumar, G Anderson, N Dutta, R Smart, N Voelcker, R Sekel
J. Biomed. Mater. Res 79A, 271 – 281 2006

XPS and Bioactivity Study of the Bisphosphonate Pamidronate Absorbed onto Plasma Sprayed Hydroxyapatite Coatings

K McLeod, S Kumar, R St C Smart, N Dutta, N Voelcker, G Anderson, R Sekel
Appl. Surface Science 253, 2644-2651 2006

Distal Femoral Stem Tip Resection for Thigh Pain Complicating the Uncemented Total Hip Arthroplasty: Five Patients followed-up at 6-10 Years

L Kandel, M Kandel, R Sekel
Hip International Journal 2006:16 210-214

Fastidious Organisms, The Importance of Blood Culture Bottles

C.Reitz, R.Sekel
Australian Orthopaedic Association, National Meeting, 2012

Mycobacterium Bovis Periprosthetic Infection of the hip following intravesical BCG Therapy for Bladder Carcinoma

L Aitchison, V Jayenetti, R Sekel
Australasian Medical Journal October 2015

Current Research
Project

Development of a new technique for Anterior Cruciate Ligament Repair



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Previous Research
Projects and Grants

FDA 510(k) Certification granted for Equator Plus Cup System & M-Cor Total Hip Replacement System	
TGA Certification granted for DTC Total Hip Replacement System (+ M-Cor Total Hip Replacement System)	2006
Manufacturing Innovation Excellence Award, April Innovation in Engineering Design and Manufacture	
Revision Margron hip replacement system developed and manufactured	1999
Winner , Australian Design Award for Engineering	1998
Successful Development of Hydroxyapatite Plasma Spray Process in conjunction with CSIRO, Division of Applied Physics – Dr Tony Farmer	1992
First Margron Total Hip Replacement Inserted	1997
Development of a new hip replacement – new design femoral and neck component	1991 – 1992
The abrasion testing, construction, preclinical testing in animal models of ion-implanted carbon composite cup, ball and stem prosthetic devices with initial emphasis on hip joints for subsequent human implant and evaluation in conjunction with the CSIRO (Division of Applied Physics), University of New South Wales (Centre for Biomedical Engineering) and The St George Hospital Industry Research and Development Board – New Technologies Grant 15028 (\$454,700)	1988 – 1992
Kangaroo tail tendon as replacement for the anterior cruciate ligament using 40 sheep in conjunction with Dr Klaus Schindhelm, University of New South Wales, Biomedical Engineering Department	1978 – 1987
Microscopic flexor tendon sheath transfer in clean-cut flexor tendons in monkeys, in conjunction with Dr Earl Owen, Prince of Wales Hospital and University of New South Wales	1977



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Lectures and
Conferences

Surgical Convener, International Rheumatology Conference, University of Sydney	1985
Thoracic Outlet Syndrome Guest Lecturer, British Cervical Spine Society Meeting Nottingham, England	1990
A New Design Femoral Stem Prosthesis – The St George Margron Hip	1991
Candida Albicans Infection of the Spine R Sekel, A Loeffler and Y Mattan	
Australian Orthopaedic Association and New Zealand Orthopaedic Association Meeting Christchurch, New Zealand	
Total Knee Replacement – The Operation Who Deserves Total Knee Replacement Results/Complications in Total Knee Replacement Infection in Total Knee Replacement The Patella in Total Knee Replacement Revision Total Knee Replacement Invited guest and keynote speaker, Chinese Orthopaedic Association Annual Conference	1992
Who Deserves Total Knee Replacement? Results and Complications of Total Knee Replacement Revision Total Knee Replacement The Patella in Total Knee Replacement Invited guest lecturer, Puna Indian Rheumatology Association	1993
Poster: A New Biomaterial – Diamond-like Coating of Graphite Carbon R Sekel, I Pollack and K Schindhelm 53rd Annual Scientific Meeting, Australian Orthopaedic Association, Adelaide	1993
A New Biomaterial Thoracic Outlet Syndrome Israeli Orthopaedic Association Annual Conference	1993
Poster: Plasma Spray Coating of Hydroxyapatite in Orthopaedics	1994
Australian Society for Biomaterials The St George Margron Total Hip Replacement System Poster: The St George Margron Total Hip Replacement Stem – A Double Thread/Tapered Cone SICOT Sydney	1999
Stem Shortening in Total Hip Replacement The Sweet Spot The Engineering Design Concepts of Stem Arthroplasty Society of Australia Closed Scientific Meeting, Noosa	1999



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- Development of an Australian Designed Hydroxyapatite Coated Hip Prosthesis 2000
K A Gross, S Gulizia, T N Farmer and R Sekel
International Hydroxyapatite Conference, Melbourne
- The Double Threaded Cone Modular Hip Replacement System as a Primary Prosthesis – Three Year Follow Up 2001
- Poster: The Double Threaded Cone Modular Hip Replacement System Used as a Revision & Tumour Prosthesis
R Sekel
Asia Pacific Orthopaedic Association 13th Triennial Congress, Adelaide
- A Proximal/Distal Fixation Alternative – The Double-Threaded Cone Hip Stem 2001
R Sekel
- Osteotomy 2001: A Seat at the Table?
J Hart, R Sekel
Current Concepts in Joint Replacement
Las Vegas, Nevada, U.S.A.
- Hip Replacement Using a Double-Threaded Cone-Shaped Modular Femoral Stem 2001
R Sekel, L Kandel, R Powell, I Woodgate
SICOT/SIROT XXI World Congress
Paris, France
- The Engineering Principles of the Double-Threaded Cone Stem Hip Replacement 2001
R Sekel, R Frost, L Kandel
Monash University Material Services Engineering Materials Conference
Melbourne University
- Immediate Torsional Locking Strength of the HA Coated Double Threaded Cone Hip Stem 2002
R Sekel, R Frost, L. Kandel, R Damle
Annual Scientific Meeting of the Australian Orthopaedic Association, Melbourne
- The HA Coated Double Threaded Cone Stem Hip: A Longitudinal 5 Year DEXA Study 2002
R Debi, R Sekel
Bio ceramics 15: 15th International Symposium on Ceramics in Medicine
U.T.S., Sydney
- Strength & Modularity in the Recent Wave of Total Hip Replacements 2003
R Sekel
Invited Guest Lecturer at:
Grand Rounds St Raphaels, New Haven (associated with Yale)
Grand Rounds Institute of Bone & Joint Disorders, Phoenix
X-ray Meeting Tampa General Hospital, Tampa
Grand Rounds University of Mississippi, Mississippi



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Femoral Revision with a Double Threaded Femoral Component R Sekel, R Debi Strength & Modularity in THR R Sekel Minimal Invasive Surgery Using the Double Threaded Cone System	2003
R Sekel 7th Annual Closed Meeting of the Arthroplasty Society of Australia, Launceston	
A New Designed Acetabular Cup – Initial Strength Evaluation Using Finite Element Analysis D Y Jung, S Tsutsumi, R Sekel, R Frost, K Ikeuchi, P Wingrove IASTED International Conference on Biomechanics Rhodes, Greece	2003
Scientific Exhibit – Strength and Modularity: Engineering for Successful And Durable Modular Femoral Components for Revision THA R Sekel, P Wingrove, R Debi, B Miles, R Eberle Poster – Strength and Modularity: Engineering for Successful and Durable Modular Femoral Components in THA R Sekel, P Wingrove, R Debi, B Miles, R Eberle American Academy of Orthopaedic Surgeons San Francisco, U.S.A.	2004
Revision THA Using a Non-Cemented, Double Threaded, Cone Shaped, Modular Femoral Component R Sekel, L Kandel, R Debi, R Eberle, W Lanzer, A McPherron Primary and Revision THA in Patients with Small Femoral Morphometry R Sekel, R Eberle, M Richardson, W Lanzer, D Gibson, L Kwong, B Mallin, A Infante Minimal Invasive THR Surgery Via the Posterior Approach R Sekel, R Debi, R Kardosh Poster: Periprosthetic Bone Mineral Density Changes Following Primary THA Using a Double Threaded, Cone Shaped Femoral Component: Intermediate Follow-up Results R Sekel, L Kandel, R Debi, R Kardosh, R Eberle 11th Meeting of the Combined Orthopaedic Associations Sydney	2004
Prospective Periprosthetic BMD Changes Following Primary THA: 60 Month Follow-up Results R Sekel, R Debi, R Eberle (Scientific Exhibit & Poster) 72nd Annual American Academy of Orthopaedic Surgeons Washington, U.S.A.	2005
Accelerated Corrosion Evaluation of Modular Implants: An Invitro Biomechanical Study R Appleyard, P Wingrove, D Barker, R Sekel, R Gillies AOA Science Programme, Perth	2005
International Society for Technology in Arthroplasty 18th Annual Symposium	2005



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Kyoto, Japan

A Computational Prediction of Periprosthetic Bone-
Remodeling in Relation to Bony Ingrowth After Primary
Cementless Hip Arthroplasty

D Jung, S Tsutsumi, R Nakai, K Ikeuchi, R Sekel

Arthroplasty Society of Australia

2007

Annual Scientific Meeting

South Kingscliff

The 10 Year Results of the Margron DTC Hip System

R Sekel

Total Hip Arthroplasty in Femora with Narrow Canals

R Sekel, G Vogel

Ceramic Liner Deflection with Different Impaction Force

P Wingrove, R Sekel



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