

INSALL-SCOTT

膝关节外科学

SURGERY *of the* KNEE

第3版

主译 吕厚山

上卷

人民卫生出版社

INSALL · SCOTT

膝关节外科学

SURGERY *of the* KNEE

第 3 版

上 卷

原 著	John N. Insall, MD				
	W. Norman Scott, MD				
主 译	吕厚山				
副主译	张 洪				
秘 书	关振鹏	周一新	陈 坚	黄德勇	
审 校	冯传汉	吕厚山	张 洪	陈 坚	
	关振鹏	黄德勇	王 宁	蒋 毅	
	李 虎	白楚杰			

人民卫生出版社

Surgery of the Knee, 3e

John N. Insall, MD & W. Norman Scott, MD

ISBN: 0-443-06545-4

Copyright © 2001 by Elsevier. All rights reserved.

Authorized simplified Chinese translation edition published by the proprietor.

ISBN: 981-259-112-5

Copyright © 2006 by Elsevier (Singapore) Pte Ltd. All rights reserved.

Elsevier (Singapore) Pte Ltd.

3 Killiney Road

#08-01 Winsland House I

Singapore 239519

Tel: (65) 6349-0200

Fax: (65) 6733-1817

First Published 2006

2006 年初版

Printed in China by People's Medical Publishing House under special agreement with Elsevier (Singapore) Pte Ltd.

This edition is authorized for sale in China only, excluding Hong Kong SAR and Taiwan. Unauthorized export of this edition is a violation of the Copyright Act. Violation of this law is subject to civil and criminal penalties.

本书中文简体版由人民卫生出版社与 Elsevier (Singapore) Pte Ltd 在中国大陆境内合作出版, 本版仅限在中国大陆境内 (不包括香港特别行政区及台湾) 出版及销售。未经许可之出口, 视为违反版权法, 将受到法律制裁。

图书在版编目 (CIP) 数据

膝关节外科学 (上、下卷) / 吕厚山主译. —北京:
人民卫生出版社, 2006.1

ISBN 7-117-06936-8

I. 膝... II. 吕... III. 膝关节—外科学 IV. R687.4

中国版本图书馆 CIP 数据核字 (2005) 第 069818 号

ISBN 7-117-06936-8



9 787117 069366 >

图字: 01-2004-5434

膝 关 节 外 科 学

(上、下卷)

主 译: 吕 厚 山

出版发行: 人民卫生出版社(中继线 67616688)

地 址: (100078)北京市丰台区方庄芳群园3区3号楼

网 址: <http://www.pmph.com>

E - mail: pmph@pmph.com

邮购电话: 010-67605754

印 刷: 北京中科印刷有限公司

经 销: 新华书店

开 本: 889 × 1194 1/16 印张 (上、下卷): 124.75

字数 (上、下卷): 4 036 千字

版 次: 2006 年 1 月第 1 版 2006 年 1 月第 1 版第 1 次印刷

标准书号: ISBN 7-117-06936-8/R · 6937

定价 (上、下卷): 685.00 元

著作权所有, 请勿擅自用本书制作各类出版物, 违者必究

(凡属印装质量问题请与本社销售部联系退换)

译 者

(以姓氏笔画为序)

王 宁 (北京大学人民医院)
王玉琨 (北京积水潭医院)
冯 艺 (北京大学人民医院)
艾 京 (北京大学人民医院)
关振鹏 (北京大学人民医院)
刘 帆 (北京大学人民医院)
吕厚山 (北京大学人民医院)
孙铁铮 (北京大学人民医院)
曲华毅 (北京大学人民医院)
张昊华 (北京积水潭医院)
张建立 (北京积水潭医院)
张 洪 (北京积水潭医院)
张 斌 (北京大学人民医院)
李 虎 (北京大学人民医院)
杨 刚 (北京大学人民医院)
杨明辉 (北京积水潭医院)
陈 坚 (北京大学人民医院)
周一新 (北京积水潭医院)
周 强 (北京大学人民医院)

周殿阁 (北京大学人民医院)
林剑浩 (北京大学人民医院)
武 勇 (北京积水潭医院)
金群华 (宁夏医学院附属第一医院)
姜 军 (北京大学人民医院)
柯 岩 (北京大学人民医院)
赵金霞 (北京大学人民医院)
倪 磊 (北京大学人民医院)
唐 竞 (北京积水潭医院)
袁 宁 (北京积水潭医院)
郭 卫 (北京大学人民医院)
寇伯龙 (北京大学人民医院)
黄 野 (北京积水潭医院)
黄德勇 (北京积水潭医院)
傅 刚 (北京积水潭医院)
蒋 毅 (北京积水潭医院)
鲁 明 (北京大学人民医院)
燕太强 (北京大学人民医院)
魏 威 (北京大学人民医院)

译 者 序

记得3年前,人民卫生出版社姬放主任找我征求翻译《膝关节外科学》是否有价值的时候,我曾毫不犹豫地对她说道:“这绝对是一本有价值的好书。如果能够翻译出版,一定会对我国膝关节外科事业的发展产生巨大的推动作用。”姬放主任是一位具有豪爽风格、说干就干的人。不久她就告诉我:出版社讨论决定购买此书的翻译权,并希望我们组织一个有志于翻译此书的班子。后来由于这本书原来的出版社被另一家出版社合并,版权费一下子增加了许多。她又找我商量,这本书是否值得花这么多钱来购买翻译权时,我犹豫了,这种犹豫并不是因为该书本身的价值,更深的层面是对自己的组织能力没有信心。花那么多钱买来的版权,如果翻译不好,不能被广大同行所接受,不仅仅是浪费了出版社的经费,更重要的是败坏了这本膝关节外科学领域的“圣经”般名著的声誉,责任太大了。但如果此书不能被译成中文同我国广大同行见面,这对我们同样是一个损失。听说后来经过出版社的多方努力,版权费又恢复到原来的水平,姬放主任再次找我,我再次与北京积水潭医院张洪教授和我们关节病研究所的几位年轻同道一起讨论,特别是征求了我的老师冯传汉教授的意见,大家几乎都异口同声地支持翻译出版此书。就这样,我怀着既兴奋又担心的心情开始了这项工作。

参与翻译工作的医师们,都是在关节外科领域里有长期工作经验的中青年医师。根据他们既往工作的经验和兴趣,分配了每个人的翻译章节,对其中个别拿不准的章节,我们拿出几节请冯传汉教授斟酌。大家都知道冯传汉教授是一位非常认真的学者,每送上

一节,冯老师都要反复推敲修改,看着上面密密麻麻的修改字迹,我的心情是非常矛盾的。高兴的是,冯老师的业务和英文的功底是人所敬仰的,经过他的斧正,这个章节就可以放心了;但心痛的是让91岁高龄的冯老师这么操劳,心里有愧啊!今天,在我们读这本书的时候,我们不仅要学习书中的知识,分享大师们的经验,指导我们的工作;同时,还要学习冯传汉老师认真为人做事的精神。他总是鼓励后人勇挑重担,又身体力行帮助后人。当你遇到问题去向他求教时,他总是那么认真、及时地帮助你,能够在这样的老师指导下工作,这是我们终生的幸福。

承担翻译工作的中青年医师们不仅是临床工作的骨干,也是家里的“掌门人”。他们都是牺牲自己那点有限的休息时间来完成这项工作的,字里行间浸透着他们的心血和汗水。由于每个人的中英文水平不尽相同,工作经验和体会也有差别,谬误之处实在难免,在恳请读者谅解的同时,更希望大家能将不当及谬误之处及时指出,只有这样才能保持这本名著的真实面貌,以使再印时得以及时修正。

在这里,我要特别感谢关振鹏副教授,他在这本书的翻译过程中,在校对、补漏、催稿等方面默默地帮助我做了大量的工作。有个别被人遗漏的章节,又是他承担了补译的工作。可以说,没有他的帮助,我很难顺利地完成此项重任。

如果说航海离不开航标的话,我想《膝关节外科学》就是膝关节外科事业的一盏耀眼的引航明灯。相信读者们一定能感觉到在分享书中经验之后,对自己事业的巨大帮助。

吕厚山

北京大学人民医院
北京大学关节病研究所
2005年6月14日

➤ 英文版序言

25年前,患有膝关节疼痛的青少年,在制动不能缓解症状并继发肌肉萎缩和渐增无力的情况下,常实施了完全不必要的开放性半月板切除手术。有些病人术前还做过确诊率很低的膝关节造影。

术后,如果症状持续,残留的另侧半月板则被认定为致病根源,于是上述的治疗再被不成功地重复一次。随着半月板切除术的失败,人们则认为髌骨是导致一系列膝关节问题的“罪魁祸首”。遗憾的是,没有一种保守疗法或是手术能较彻底地解决膝关节问题。人们先后采用近端、远端再对线(位)手术治疗各种各样的“软骨软化症”。如果诊断有前交叉韧带损伤,治疗方式更是种类繁多,从任其自然发展直到关节内、外联合重建。用现代眼光来看,能从上述治疗方法中获得康复,诚然是对病人和医者共同努力的赞扬,但同时也有几分告诫,即避免手术治疗。

不幸的是,许多膝关节疾患最终发展成非甾体抗炎药治疗无效的创伤后关节炎,从而需要接受截骨治疗。今天看来,许多膝部截骨手术可能没有适应证,然而当时并无其他手术可供选择。当前,随着临床诊断、影像技术、康复方式的进步及对之深刻的理解,排除了许多不必要的手术。关节镜技术使关节软骨病变、韧带损伤的诊断及治疗发生了革命性的更新。与此同时,全膝关节置换在缓解疼痛与改善活动能力方面,取得了无与伦比的成功。

我深信,对前25年的回顾,在一定程度上提示我们如何审视经典教科书在医学继续教育中所起的作用。现在,我们进入了数字时代,由于数字千年的到来,因此在我们努力提高教育带给病人新突破性治疗的时候,更加难以容忍模拟信号出版物的匮乏与落后。有鉴于此,我们试图编撰两卷兼容并包并带有彩页的教科书,以弥合模拟信号与数码信号出版间的差距。在结合以前两部膝关节专著——《Surgery of the Knee》、《The Knee》——的基础上,我们再次邀集国内、国际享誉膝关节外科领域专家所论述之大成。

本书由11篇、95章构成。第一篇为基础科学部分,阐述了膝关节解剖、解剖变异、影像学与手术入路等内容。

在膝关节生物力学部分(第二篇),Michael Free-

man博士通过一系列深入的MRI对照研究,切实提高了我们对膝关节运动的认识。该部分的其他内容强调了膝关节生物力学的基础原则和膝关节与正常或异常步态的关系。

膝关节外科专业建立伊始,关节软骨缺损的修复就引起了骨科医生的注视,当前热情似乎空前高涨。因此,本书几乎囊括了国际上相关方面知名创始者处理软骨缺损的技术。从欧洲到美国,基于学者们所打下的基础,有望在未来岁月中取得临床应用的成功。

本书的作者多达150多位,难以一一枚举其精特之处。要指出的是,本书的若干章节极具创新性。如:第41章(前交叉韧带重建翻修术:作者的观点)向读者一步一步地展现了多位专家处理这一骨科手术难题的珍贵心得。

娱乐性运动近年来倍受重视,儿童膝关节问题也显得越来越突出。第64章至第68章为读者提供了向儿童骨科专家学习骨骼系统的正常生长与发育、先天畸形、骨骺骨折、儿童前交叉韧带损伤的处理等内容的机会。

本书的近四分之一篇幅用于论述人工膝关节置换及其他手术选择。鉴于人工膝关节置换术的良好疗效,如此安排是有必要的。但是,我们不能忘记截骨术的重要作用,感谢Hanssen与Poilvache两位医生,他们向读者介绍了欧洲与美洲学者有关的观点与展望。本书对人工膝关节的假体设计、置换方法、血栓性静脉炎与皮肤愈合等问题(第七篇),感染及需行翻修术的并发症等都有详细论述。正如前交叉韧带的翻修一样,人工全膝关节翻修术用了六节来讨论。作者们提供的多种解决问题的途径和“诀窍”是无价的。

能与我的导师、合作者,更重要的是朋友们共同协力出版此巨著,我深感荣幸。Insall医生先前关于膝关节外科各个领域的著作达到了难以逾越的高度。对我来讲,过去的两年中能在他的指导下继续我的“住院医师训练”更是无比珍贵的机会。

最后,谨代表所有作者,殷切期望读者们能从本书得到启发,积极学习,认真分析观察到的诸多现象,细心思考膝关节外科领域内的各种问题,为本学科作出贡献,造福于广大患者。

➤ 英文版前言

从根本上说，由于《膝关节外科学》第3版融合了 Norman Scott 博士编著的《膝关节》的内容，所以本书第3版不同于第1版和第2版。这种变化给我们灌输了新的思想，也许能使本书更加与新时期的进展息息相关。我们特别增加了“作者的观点”章节，介绍许多知名专家的手术经验；还有 Henry Clarke 博士编写的“膝关节解剖学”新章节。

关于新内容与旧内容混合编写的效果：例如，Michael Freeman 博士编写了“关节炎的外科病理学”所谓的“经典”章节（关节炎的病理学毕竟是经久不变的）；他还基于最近解剖学研究的新观点，编写了关

于膝关节怎样运动的全新章节。对于大多数读者来说，我相信这是发人深思的。

另外，本书的新意还包括增加了一些彩图。我希望这会使页面增色并给读者带来阅读兴趣。

本书还进行了大刀阔斧的删节，删去了第1版中的部分内容（遗憾的是，其中大多是我自己写的），这也使本书获益匪浅。

非常荣幸能与我的老朋友和同事 Norman Scott 博士共事，正是由于他的高涨热情和倾力工作才使本书及时出版，这样确保了本书所有内容都尽可能是与时俱进的。

John N. Insall, MD

➤ 参编人员

ARMAND ABULENCIA, MD

Island Orthopaedics and Sports
Medicine,

Massapequa, NY

41: *Revision ACL Surgery: How I Do It*

PAOLO AGLIETTI, MD

Professor of Orthopaedics,
Director, First Orthopaedic Clinic,
University of Florence,
Florence, Italy

38: *Anterior Cruciate Ligament*

Reconstruction for Chronic Injuries

46: *Disorders of the Patellofemoral Joint*

80: *Meniscal-Bearing Knee Replacement*

JOSE ALICEA, MD

Assistant Clinical Professor,
Texas Tech Health Science Center,
El Paso, TX

72: *Scoring Systems and Their Validation
for the Arthritic Knee*

KYLE ANDERSON, MD

William Clay Ford Center for Athletic
Medicine,

Henry Ford Health System,

Detroit, MI

41: *Revision ACL Surgery: How I Do It*

STEVEN PAUL ARNOCKY, DVM

Wade O. Brinker Endowed Professor of
Surgery,

College of Veterinary Medicine,

Professor of Surgery (Orthopaedic),

College of Human Medicine,

College of Osteopathic Medicine,

Director, Laboratory for Comparative

Orthopaedic Research,

Michigan State University,

East Lansing, MI

23: *Healing of Knee Ligaments and
Menisci*

BERNARD R. BACH, JR., MD

Professor, Dept. of Orthopedic Surgery,
Rush Medical College,

Director, Sports Medicine Section,

Rush-Presbyterian-St. Luke's Medical

Center,

Chicago, IL

30: *Knee Laxity Testing Devices*

40: *Knee Bracing for Athletic Injuries*

CHAMP L. BAKER, JR., MD

Clinical Assistant Professor of

Orthopaedics,

Tulane University School of Medicine,

New Orleans, LA

Staff Physician,

The Hughston Clinic,

Columbus, GA

41: *Revision ACL Surgery: How I Do It*

A. BALDINI, MD

First Orthopaedic Clinic,

University of Florence,

Florence, Italy

80: *Meniscal-Bearing Knee Replacement*

SANJIV BANSAL, MD

Attending Physician,

Co-Director, Sports Medicine,

Southern Chester County Medical

Center,

West Grove, PA

31: *Sports Knee Rating Systems*

SUE D. BARBER-WESTIN, BS

Director, Clinical Studies,

Cincinnati Sportsmedicine Research and

Education Foundation,

Cincinnati, OH

42: *Newer Concepts in the Treatment of
Posterior Cruciate Ligament Ruptures*

KEITH BAUMGARTEN, MD

The Johns Hopkins University School of
Medicine,

Baltimore, MD

22: *Osteonecrosis of the Knee*

JAMES H. BEATY, MD

Professor of Orthopaedics,

Campbell Clinic,

University of Tennessee,

Pediatric Orthopaedics,

Le Bonheur Children's Medical Center,

Memphis, TN

65: *Congenital Deformities of the Knee*

JEFFREY R. BECHLER, MD

Clinical Assistant Professor of Surgery,

Robert Wood Johnson Medical School,

New Brunswick, NJ

1: *Evolution and Embryology of the Knee*

JACK M. BERT, MD

Clinical Professor,

University of Minnesota School of

Medicine,

Minneapolis, MN

18: *Arthroscopic Treatment of Degenerative
Arthritis of the Knee*

LESLIE J. BISSON, MD

Orthopedic Surgeon,

Northtown Orthopedics,

East Amherst, NY

43: *Posterior Cruciate Ligament Injuries*

ROBERT E. BOOTH, JR., MD

Chief of Orthopaedics,

Pennsylvania Hospital,

Philadelphia, PA

63: *Periprosthetic Fractures*

ROBERT B. BOURNE, MD

A.D. McLachlin Professor of

Orthopaedic Surgery,

London Health Sciences Centre,

University of Western Ontario,

Chief, Adult Reconstruction Clinical

Teaching Unit,

London Health Sciences Centre,

London, Ontario, Canada

81: *Patellar Replacement in Total Knee
Arthroplasty*

MARC F. BRASSARD, MD

Staff Physician,

Orthopedic and Sports Medicine,

Maryland Hip and Knee Center,

Annapolis, MD

87: *Complications of Total Knee*

Arthroplasty

88: *Revision of Aseptic Failed Total Knee
Arthroplasty*

K. K. BRIGGS, MBA

Director for Clinical Research,

Steadman Hawkins Sports Medicine

Foundation,

Vail, CO

16: *Débridement and Microfracture ("Pick
Technique") for Full-Thickness Articular
Cartilage Defects*

THOMAS E. BROWN, MD

Clinical Instructor,

University of Virginia School of

Medicine,

Orthopaedic Surgeon,

University of Virginia Hospital,

Charlottesville, VA

62: *Fractures of the Patella*

PETER G. BULLOUGH, MD

Professor of Pathology,

Weill Medical College of Cornell

University,

New York Presbyterian Hospital,

Director of Laboratory Medicine,

Hospital for Special Surgery,

Attending Pathologist,

The New York Hospital,

New York, NY

23: *Healing of Knee Ligaments and
Menisci*

MARK L. BURMAN, MD

Assistant Professor of Surgery,

Division of Orthopedic Surgery,

McGill University,

Montreal, Quebec, Canada

67: *Physal Fractures About the Knee*

ALBERT H. BURSTEIN, PHD

Senior Scientist Emeritus,

Hospital for Special Surgery,

New York, NY

8: *Basic Biomechanics*

ROBERTO BUZZI, MD

Assistant in Orthopaedics,
First Orthopaedic Clinic,
University of Florence,
Florence, Italy
46: Disorders of the Patellofemoral Joint

BERNARD R. CAHILL, MD

Clinical Professor,
University of Illinois College of
Medicine,
Peoria, IL
*19: Treatment of Juvenile Osteochondritis
of the Knee*

JOHN J. CALLAGHAN, MD

Professor, Dept. of Orthopaedics,
Professor, Dept. of Bioengineering,
University of Iowa College of Medicine,
University of Iowa Hospital and Clinics,
Iowa City, IA
*92: Knee Arthrodesis and Resection
Arthroplasty*

S. TERRY CANALE, MD

Professor of Orthopaedics,
Chief of Staff,
Campbell Clinic,
University of Tennessee,
Memphis, TN
65: Congenital Deformities of the Knee

W. DILWORTH CANNON, JR., MD

Professor of Clinical Orthopaedic
Surgery,
Director of Sports Medicine,
University of California,
San Francisco, CA
25: Arthroscopic Meniscal Repair

WILLIAM G. CLANCY, JR., MD

Clinical Professor of Orthopedics,
University of Alabama,
Fellowship Director,
American Sports Medicine Institute,
Orthopedic Surgeon,
Healthsouth Medical Center,
Birmingham, AL
43: Posterior Cruciate Ligament Injuries

HENRY D. CLARKE, MD

Attending Orthopaedic Surgeon,
Insall Scott Kelly Institute for
Orthopaedics and Sports Medicine,
Beth Israel Medical Center,
New York, NY
2: Anatomy
3: Anatomic Aberrations
*73: Historical Development, Classification,
and Characteristics of Knee Prostheses*

CLIFFORD W. COLWELL, MD

Clinical Professor,
Dept. of Orthopaedics and
Rehabilitation,
School of Medicine,
University of California, San Diego,
Adjunct Professor,

Dept. of Basic Science and Clinical
Research,

The Scripps Research Institute,
Director, Musculoskeletal Centers of
Excellence, Scripps Clinic,
Head, Division of Orthopaedic Surgery,
Scripps Clinic,
La Jolla, CA
83: Thrombophlebitis in Knee Arthroplasty

LAWRENCE S. CROSSETT, MD

Division of Adult Reconstruction,
Dept. of Orthopaedic Surgery,
University of Pittsburgh Medical Center,
Pittsburgh, PA
*89: Extensor Mechanism Disruption After
Total Knee Arthroplasty*

FRED D. CUSHNER, MD

Assistant Clinical Professor of
Orthopaedic Surgery,
Albert Einstein College of Medicine of
Yeshiva University,
Bronx, NY
Attending Orthopaedic Surgeon,
Beth Israel Medical Center,
Director of Insall Scott Kelly Institute
for Orthopaedics and Sports
Medicine,
Beth Israel Medical Center,
New York, NY
2: Anatomy
24: Arthroscopic Meniscal Resection
*34: Anterior Cruciate Ligament
Reconstruction With Bone-Patella
Tendon-Bone Autograft: Indications,
Technique, Complications, and
Management*
*59: Soft-Tissue Considerations About the
Knee: Prevention and Treatment of
Problems*

A. LEE DELLON, MD

Professor of Plastic Surgery and
Neurosurgery,
The Johns Hopkins University School of
Medicine,
Director, Institute of Peripheral Nerve
Surgery,
Baltimore, MD
*85: Partial Denervation for the Treatment
of Painful Neuromata Complicating
Total Knee Replacement*

DOUGLAS A. DENNIS, MD

Professor, Colorado School of Mines,
Golden, CO
Assistant Clinical Professor,
Dept. of Orthopaedic Surgery,
UCHSC,
Medical Director,
Rose Institute for Joint Replacement,
Clinical Director,
Rocky Mountain Musculoskeletal
Research Laboratory,
Denver, CO
*78: Fluoroscopic Analysis of Total Knee
Replacement*
*93: Revision Knee Arthroplasty: How I Do
It*

DAVID R. DIDUCH, MD

Assistant Professor of Orthopaedic
Surgery,
University of Virginia,
Charlottesville, VA
62: Fractures of the Patella

LAWRENCE D. DORR, MD

Director, The Bone and Joint Institute,
Good Samaritan Hospital,
Los Angeles, CA
*93: Revision Knee Arthroplasty: How I Do
It*

CLIVE P. DUNCAN, MD

Dept. of Orthopaedics,
Vancouver Hospital and Health
Sciences Centre,
Vancouver, British Columbia, Canada
91: Cement Spacers in Knee Surgery

MARK E. EASLEY, MD

Assistant Professor,
Division of Orthopaedic Surgery,
Duke University Medical Center,
Durham, NC
24: Arthroscopic Meniscal Resection
*48: Quadriceps and Patellar Tendon
Disruptions*
*74: Surgical Techniques and
Instrumentation in Total Knee
Arthroplasty*
80: Meniscal-Bearing Knee Replacement

MALCOLM L. ECKER, MD

Associate Professor of Orthopaedic
Surgery,
University of Pennsylvania School of
Medicine,
Attending Surgeon,
University of Pennsylvania Hospital,
Associate Surgeon,
Children's Hospital of Philadelphia,
Philadelphia, PA
21: Spontaneous Osteonecrosis

GERALD A. ENGH, MD

Associate Clinical Professor,
University of Maryland Medical School,
Baltimore, MD
Staff Physician,
Mt. Vernon Hospital,
President, Anderson Orthopaedic
Research Institute,
Alexandria, VA
*93: Revision Knee Arthroplasty: How I Do
It*

PHILIP M. FARIS, MD

St. Frances Hospital— Mooresville,
Center for Hip and Knee Surgery,
Mooresville, IN
*82: Transfusion Considerations in Total
Knee Arthroplasty*

DERMOT R. FITZGIBBON, MD

Assistant Professor,
University of Washington School of
Medicine,

Attending Anesthesiologist,
Pain Service,
University of Washington Medical
Center,
Seattle, WA
57: *Pain Management in Knee Surgery*

ANDREW G. FRANKS, JR., MD
Associate Professor,
New York University School of
Medicine,
Chief of Connective Tissue Disease
Section,
Charles C. Harris Skin and Cancer
Center,
Attending Rheumatologist,
Hospital for Joint Diseases,
New York University Medical Center,
New York, NY
49: *Inflammatory Arthritis of the Knee*

M. A. R. FREEMAN, MD
Professor, School of Engineering
Sciences,
Southampton University, Hampshire,
UK
Honorary Consultant Orthopaedic
Surgeon,
The Barts and The London NHS Trust,
London, UK
10: *The Shapes and Relative Movements of
the Femur and Tibia in the Unloaded
Cadaveric Knee: A Study Using MRI as
an Anatomical Tool*
69: *Surgical Pathology of Arthritis*

MARC J. FRIEDMAN, MD
Assistant Clinical Professor,
Division of Orthopaedics,
UCLA School of Medicine,
Los Angeles, CA
Attending Orthopedic Surgeon,
Southern California Orthopedic
Institute,
Van Nuys, CA
35: *Arthroscopic Anterior Cruciate
Reconstruction With Hamstring
Tendons: Indications, Surgical
Technique, Complications, and Their
Treatment*

FREDDIE H. FU, MD
Professor and Chairman,
Dept. of Orthopaedic Surgery,
University of Pittsburgh,
Pittsburgh, PA
58: *Gene Therapy in Treatment of Knee
Disorders*

JOHN P. FULKERSON, MD
Clinical Professor,
University of Connecticut,
Farmington, CT
47: *Surgery of the Patellofemoral Joint:
Indications, Effects, Results, and
Recommendations*

BRADLEY S. GALER, MD
Director of Clinical Studies,
Director, Program for Pain Due to
Nerve Injury,
Dept. of Pain Medicine and Palliative
Care,
Beth Israel Medical Center,
New York, NY
53: *Complex Regional Pain Syndromes,
Types I (Reflex Sympathetic Dystrophy)
and II (Causalgia)*

JOHN C. GARRETT, MD
Resurgens Orthopaedics,
St. Joseph's Hospital,
Atlanta, GA
20: *Osteochondritis Dissecans II: The Adult
Form*

BERNARD GHELMAN, MD
Professor of Radiology,
Weill Medical College of Cornell
University,
Attending Radiologist,
Hospital for Special Surgery,
New York, NY
4: *Imaging of the Knee*
94: *Bone Tumors and Tumor-Like Lesions
of the Knee*

FRANCESCO GIRON, MD
First Orthopaedic Clinic,
University of Florence,
Florence, Italy
38: *Anterior Cruciate Ligament
Reconstruction for Chronic Injuries*

E. M. GOBLE, MD
Associate Clinical Professor,
Dept. of Orthopedics,
University of Utah,
Salt Lake City, UT
27: *Meniscal Allograft Transplantation*

VIPOOL K. GORADIA, MD
Attending Physician,
Sports Medicine Specialist,
Roanoke Orthopaedic Center,
Roanoke, VA
31: *Sports Knee Rating Systems*

WILLIAM A. GRANA, MD, MPH
Professor and Chairman,
Dept. of Orthopedics,
University of Arizona,
Tucson, AZ
67: *Physal Fractures About the Knee*

EDWARD S. GROOM, PhD
Professor of Applied Mechanics,
Dept. of Aerospace Engineering and
Engineering Mechanics,
University of Cincinnati,
Director, Noyes-Giannestras
Biomechanics Laboratory,
University of Cincinnati,
Cincinnati, OH
42: *Newer Concepts in the Treatment of
Posterior Cruciate Ligament Ruptures*

FARES S. HADDAD, BSC, MCH, FRCS
Consultant Orthopaedic Surgeon,
University College London Hospitals,
London, UK
91: *Cement Spacers in Knee Surgery*

LÁSZLÓ HANGODY, MD, PHD
Uzsoki Hospital,
Orthopaedic and Trauma Dept.,
Budapest, Hungary
14: *Mosaicplasty*

ARLEN D. HANSEN, MD
Associate Professor of Orthopaedic
Surgery,
Mayo Medical School,
Rochester, MN
70: *Osteotomy About the Knee: American
Perspective*
92: *Knee Arthrodesis and Resection
Arthroplasty*

MARY E. HARDWICK, MSN
Nurse Specialist, Orthopaedic Research,
Scripps Clinic,
La Jolla, CA
83: *Thrombophlebitis in Knee Arthroplasty*

CHRISTOPHER D. HARNER, MD
Chief, Division of Sports Medicine,
Blue Cross of Western Pennsylvania
Professor of Orthopaedic Surgery,
University of Pittsburgh Medical Center,
Pittsburgh, PA
6: *Neurophysiology of the Knee*
44: *The Dislocated Knee*

STEVEN F. HARWIN, MD
Associate Clinical Professor of
Orthopaedic Surgery,
Albert Einstein College of Medicine,
Chief, Adult Reconstructive Surgery,
Dept. of Orthopaedic Surgery,
Beth Israel Medical Center,
New York, NY
93: *Revision Knee Arthroplasty: How I Do
It*

JOHN H. HEALEY, MD
Chief, Orthopaedic Surgery,
Memorial Sloan-Kettering Cancer
Center,
New York, NY
95: *Bone and Soft-Tissue Tumors Around
the Knee*

DAVID L. HELFET, MD
Professor of Orthopaedic Surgery,
Weill Medical College of Cornell
University,
Director, Orthopaedic Trauma Service,
Hospital for Special Surgery,
New York Presbyterian Hospital,
New York, NY
60: *Supracondylar and Distal Femoral
Fractures*
61: *Tibial Plateau Fractures*

TIMOTHY M. HOSEA, MD

Clinical Assistant Professor of Surgery,
Robert Wood Johnson Medical School,
New Brunswick, NJ
1: *Evolution and Embryology of the Knee*

JOHNNY HUARD, PHD

Assistant Professor,
Director, Growth and Development
Laboratory,
Dept. of Orthopaedic Surgery and
Molecular Genetics and
Biochemistry,
Children's Hospital of Pittsburgh,
Pittsburgh, PA
58: *Gene Therapy in Treatment of Knee Disorders*

DAVID S. HUNGERFORD, MD

Professor of Orthopaedic Surgery,
The Johns Hopkins University School of
Medicine,
Chief, Division of Arthritis Surgery,
Good Samaritan Hospital,
Baltimore, MD
22: *Osteonecrosis of the Knee*
28: *Nonoperative Treatment of Knee Arthritis*
85: *Partial Denervation for the Treatment of Painful Neuromata Complicating Total Knee Replacement*

MARC W. HUNGERFORD, MD

Assistant Professor of Orthopaedic
Surgery,
Division of Arthritis Surgery,
The Johns Hopkins University School of
Medicine,
Baltimore, MD
28: *Nonoperative Treatment of Knee Arthritis*

ERNST B. HUNZIKER, MD

Institute Director,
M.E. Müller Institute for Biomechanics,
University of Bern,
Bern, Switzerland
12: *Articular Cartilage Biology and Biomechanics*

PETER A. INDELICATO, MD

Professor,
University of Florida,
Head Team Physician,
University Athletic Association,
Gainesville, FL
32: *Medial and Lateral Ligament Injuries of the Knee*

JOHN N. INSALL, MD

Clinical Professor of Orthopaedic
Surgery,
Albert Einstein College of Medicine,
Bronx, NY
Director, Insall Scott Kelly Institute for
Orthopaedics and Sports Medicine,
Beth Israel Medical Center,
New York, NY

2: *Anatomy*

3: *Anatomic Aberrations*

46: *Disorders of the Patellofemoral Joint*

73: *Historic Development, Classification, and Characteristics of Knee Prostheses*

74: *Surgical Techniques and Instrumentation in Total Knee Arthroplasty*

77: *Total Knee Arthroplasty With Posterior Cruciate Ligament Substitution Designs*

80: *Meniscal-Bearing Knee Replacement*

87: *Complications of Total Knee Arthroplasty*

88: *Revision of Aseptic Failed Total Knee Arthroplasty*

H. IWAKI, MD

Instructor,
Dept. of Orthopaedic Surgery,
Osaka City University Medical School,
Osaka, Japan
10: *The Shapes and Relative Movements of the Femur and Tibia in the Unloaded Cadaveric Knee: A Study Using MRI as an Anatomical Tool*

DON JOHNSON, MD

Clinical Assistant Professor of
Orthopedic Surgery,
University of Ottawa,
Director, Sports Medicine Clinic,
Carleton University,
Ottawa, Ontario, Canada
36: *Anterior Cruciate Ligament Reconstruction With Semitendinosus*

S. M. KANE, MD

Assistant Professor
Division of Sports Medicine,
Dept. of Orthopaedics: Rehabilitation,
University of Texas
Medical Branch at Galveston,
Galveston, TX
27: *Meniscal Allograft Transplantation*

BERTRAND P. KAPER, MD

Clinical Fellow,
The University of Western Ontario,
London, Ontario, Canada
Clinical Fellow, Adult Reconstruction,
London Health Sciences Centre,
London, Ontario, Canada
81: *Patellar Replacement in Total Knee Arthroplasty*

E. MICHAEL KEATING, MD

St. Frances Hospital — Mooresville,
Center for Hip and Ankle Surgery,
Mooresville, IN
82: *Transfusion Considerations in Total Knee Arthroplasty*

MICHAEL A. KELLY, MD

Assistant Clinical Professor of
Orthopaedic Surgery,
Albert Einstein College of Medicine,
Bronx, NY
Head, Sports Medicine Dept. of
Orthopaedics,

Director, Insall Scott Kelly Institute for
Orthopaedics and Sports Medicine,
Beth Israel Medical Center,
New York, NY
45: *Dislocation of the Proximal Tibiofemoral Joint*

JOHN J. KLIMKIEWICZ, MD

Clinical Instructor of Sports Medicine,
Dept. Of Orthopaedic Surgery,
Georgetown University Medical Center,
Washington, DC
6: *Neurophysiology of the Knee*
44: *The Dislocated Knee*

MININDER S. KOCHER, MD

Assistant Professor of Orthopaedic
Surgery,
Harvard Medical School,
Program in Clinical Effectiveness,
Harvard School of Public Health,
Attending Orthopaedic Surgeon,
Children's Hospital,
Boston, MA
66: *The Pediatric Knee — Evaluation and Treatment*

RICHARD D. KOMISTEK, PHD

Associate Professor,
Colorado School of Mines,
President, Rocky Mountain
Musculoskeletal Research
Laboratory,
Co-Director, FBDMS Center,
Golden, CO
78: *Fluoroscopic Analysis of Total Knee Replacement*

SUNDAR KOPPOLU, MD

Chairman, Department of
Anesthesiology,
Beth Israel Medical Center,
New York, NY
55: *Anesthetic Considerations in Knee Surgery: The Ambulatory Patient*

PAUL F. LACHIEWICZ, MD

Professor, Dept. of Orthopaedics,
University of North Carolina School of
Medicine,
Chapel Hill, NC
51: *Hemophilia and Knee Arthropathy*

SCOTT M. LEPHART, PHD

Neuromuscular Research Laboratory,
University of Pittsburgh,
Pittsburgh, PA
6: *Neurophysiology of the Knee*

JESS LONNER, MD

Assistant Professor of Orthopaedic
Surgery,
University of Pennsylvania School of
Medicine,
Attending Orthopaedic Surgeon,
University of Pennsylvania Hospital,
Philadelphia, PA
21: *Spontaneous Osteonecrosis*

PAUL A. LOTKE, MD

Professor of Orthopaedic Surgery,
University of Pennsylvania School of
Medicine,
Chief, Implant Service,
University of Pennsylvania Hospital,
Philadelphia, PA
21: *Spontaneous Osteonecrosis*

STEPHEN G. MANIFOLD, MD

Insall Scott Kelly Institute for
Orthopaedics and Sports Medicine,
Beth Israel Medical Center,
New York, NY
34: *Anterior Cruciate Ligament
Reconstruction With Bone-Patella
Tendon-Bone Autograft: Indications,
Technique, Complications, and
Management*
41: *Revision ACL Surgery: How I Do It*

LAURA LEWIS MANTELL, MD

Associate Attending Anesthesiologist,
Beth Israel Medical Center,
New York, NY
57: *Pain Management in Knee Surgery*

VLADIMIR MARTINEK, MD

Sports Medicine Fellow,
Dept. of Orthopaedic Surgery,
Musculoskeletal Research Center,
University of Pittsburgh,
Pittsburgh, PA
58: *Gene Therapy in Treatment of Knee
Disorders*

BASSAM A. MASRI, MD

Clinical Associate Professor and Head
of Reconstructive Orthopaedics,
University of British Columbia,
Vancouver, Canada
91: *Cement Spacers in Knee Surgery*

HENRY MASUR, MD

Chief, Critical Care Medicine Dept.,
Warren G. Magnuson Clinical Center,
National Institutes of Health,
Bethesda, MD
52: *HIV Infection and Its Relationship to
Knee Disorders*

KEVIN R. MATH, MD

Assistant Professor of Radiology,
Albert Einstein College of Medicine,
Bronx, NY
Attending Radiologist,
Section Head—Musculoskeletal
Imaging,
Beth Israel Medical Center,
New York, NY
2: *Anatomy*
4: *Imaging of the Knee*

K. JEFFREY MATTEONI, MD

Fellow, Section of Sports Medicine,
Department of Orthopaedic Surgery,
Rush Medical College,
Rush-Presbyterian-St. Luke's Medical
Center,

Chicago, IL

30: *Knee Laxity Testing Devices*
40: *Knee Bracing for Athletic Injuries*

LESLIE S. MATTHEWS, MD

Chairman of Orthopedics,
Associate Professor at The Johns
Hopkins University School of
Medicine,
Union Memorial Hospital,
Baltimore, MD
31: *Sports Knee Rating Systems*

GREGORY A. MENCIO, MD

Associate Professor,
Dept. of Orthopaedics and
Rehabilitation,
Vanderbilt University School of
Medicine,
Nashville, TN
64: *Normal Growth and Development in
the Skeletally Immature Knee*

MICHAEL MERKLEY, MD

Associate Professor,
Dept. of Surgery,
University of Illinois College of
Medicine,
Staff Physician,
Midwest Orthopaedic Center,
Peoria, IL
33: *Anterior Cruciate Ligament
Reconstruction With Patellar Tendon
Graft*

KAROLA MESSNER, MD, PHD

Professor, Head of Division of Sports
Medicine,
Department of Neuroscience and
Locomotion,
Faculty of Health Sciences,
University Linköping,
Linköping, Sweden
13: *Healing of Articular Cartilage Injuries*

LYLE J. MICHELI, MD

Associate Clinical Professor of
Orthopaedic Surgery,
Harvard Medical School,
Director, Division of Sports Medicine,
Children's Hospital,
Boston, MA
66: *The Pediatric Knee—Evaluation and
Treatment*

TIMOTHY S. MOLOGNE, MD

Commander, U.S. Navy,
Dept. of Orthopedic Surgery,
Naval Medical Center,
San Diego, CA
35: *Arthroscopic Anterior Cruciate
Reconstruction With Hamstring
Tendons: Indications, Surgical
Technique, Complications, and Their
Treatment*

MICHAEL A. MONT, MD

Associate Professor, Orthopaedics,

The Johns Hopkins University School of
Medicine,
Good Samaritan Hospital,
Baltimore, MD

22: *Osteonecrosis of the Knee*
28: *Nonoperative Treatment of Knee
Arthritis*
85: *Partial Denervation for the Treatment
of Painful Neuromata Complicating
Total Knee Replacement*

J. CRAIG MORRISON, MD

Chief Resident,
Dept. of Orthopaedics and
Rehabilitation,
Vanderbilt University School of
Medicine,
Nashville, TN
64: *Normal Growth and Development in
the Skeletally Immature Knee*

THOMAS J. MULVEY, MD

Associate Clinical Instructor,
University of Illinois College of
Medicine,
Peoria, IL
90: *Infected Total Knee Arthroplasty*

DAVID G. NAZARIAN, MD

Clinical Assistant Professor of
Orthopaedic Surgery,
University of Pennsylvania School of
Medicine,
Attending Physician,
Dept. of Orthopaedic Surgery,
Pennsylvania Hospital,
Philadelphia, PA
63: *Periprosthetic Fractures*

FRANK R. NOYES, MD

Adjunct Professor,
Dept. of Aerospace Engineering and
Engineering Mechanics,
University of Cincinnati,
Director, Cincinnati Sportsmedicine
Research and Education Foundation,
Cincinnati, OH
42: *Newer Concepts in the Treatment of
Posterior Cruciate Ligament Ruptures*

MARK W. PAGNANO, MD

Assistant Professor of Orthopedic
Surgery,
Mayo School of Medicine,
Consultant, Dept. of Orthopedic
Surgery,
Mayo Clinic,
Rochester, MN
86: *Bone Graft, Wedges, and Augments in
Total Knee Arthroplasty*

LONNIE E. PAULOS, MD

Orthopedic Surgeon,
Orthopedic Specialty Hospital,
Medical Director,
Orthopedic Biomechanics Institute,
Salt Lake City, UT
39: *Rehabilitation of the Surgically
Reconstructed and Nonsurgical Anterior
Cruciate Ligament*

HELENE PAVLOV, MD

Professor of Radiology,
Weill Medical College,
Cornell University,
New York, NY
Radiologist-in-Chief,
Dept. of Radiology and Imaging,
Hospital for Special Surgery,
New York, NY
4: Imaging of the Knee

HENRIK B. PEDERSEN, MD

Director, Medical Multimedia,
Insall Scott Kelly Institute for
Orthopaedics and Sports Medicine,
Beth Israel Medical Center,
New York, NY
2: Anatomy

LARS PETERSON, MD, PhD

Associate Professor,
Dept. of Orthopaedics,
University of Göteborg,
Clinical Director,
Gothenburg Medical Center,
Gothenburg, Sweden
*14: International Experience With
Autologous Chondrocyte
Transplantation*

RUSSELL S. PETRIE, MD

Southcoast Orthopaedic Associates,
Newport Beach, CA
44: The Dislocated Knee

V. PINSKEROVA, MD

Orthopaedic Surgeon,
Affiliated Teacher,
First Faculty Medicine,
Prague, Czech Republic
*10: The Shapes and Relative Movements of
the Femur and Tibia in the Unloaded
Cadaveric Knee: A Study Using MRI as
an Anatomical Tool*

PASCAL POILVACHE, MD

Associate Professor,
Dept. of Orthopaedic Surgery,
Catholic University of Louvain,
Attending Orthopaedic Surgeon,
Saint-Luc University Hospital,
Brussels, Belgium
*71: Osteotomy for the Arthritic Knee: A
European Perspective*

W. R. POST, MD

Associate Professor, Vice-Chairman,
Chief, Section of Sports Medicine and
Shoulder Surgery,
Department of Orthopedics,
West Virginia University School of
Medicine,
Morgantown, WV
*47: Surgery of the Patellofemoral Joint:
Indications, Effects, Results, and
Recommendations*

JAMES A. RAND, MD

Mayo Clinic Hospital,
Scottsdale, AZ
*76: Results of Posterior Cruciate-
Preserving Total Knee Arthroplasty*

BRUCE REIDER, MD

Professor of Surgery,
Section of Orthopaedic Surgery,
University of Chicago,
Director of Sports Medicine,
University of Chicago Hospital,
Chicago, IL
41: Revision ACL Surgery: How I Do It

AIMAN RIFAI, DO

Fellow, Orthopaedics,
The Johns Hopkins University School of
Medicine,
Baltimore, MD
22: Osteonecrosis of the Knee

KAYVON S. RIGGI, MD

Clinical Instructor,
Dept. of Orthopedics,
University of Minnesota,
Attending Orthopedic Surgeon,
Minneapolis Bone and Joint Institute,
Abbott Northwestern Hospital,
Minneapolis, MN
*76: Results of Posterior Cruciate-
Preserving Total Knee Arthroplasty*

W. G. RODKEY, DVM

Director of Basic Science Research,
Steadman Hawkins Sports Medicine
Foundation,
Vail, CO
*16: Débridement and Microfracture ("Pick
Technique") for Full-Thickness Articular
Cartilage Defects*

J. J. RODRIGO, MD

Dept. of Orthopaedics,
University of California at Davis,
Sacramento, CA
*16: Débridement and Microfracture ("Pick
Technique") for Full-Thickness Articular
Cartilage Defects*

CECIL H. RORABECK, MD

Professor and Chair,
Division of Orthopaedic Surgery,
London Health Science Centre,
University of Western Ontario,
London, Ontario, Canada
*93: Revision Knee Arthroplasty: How I Do
It*

HARRY E. RUBASH, MD

Professor and Chief,
Dept. of Orthopaedic Surgery,
Massachusetts General Hospital,
Boston, MA
*89: Extensor Mechanism Disruption After
Total Knee Arthroplasty*

FERNANDO SANCHEZ, MD

Joint Replacement Fellow,
Anderson Orthopaedic Research
Institute,
Anderson Orthopaedic Clinic,
Alexandria, VA
*93: Revision Knee Arthroplasty: How I Do
It*

ROBERT SCHNEIDER, MD

Hospital for Special Surgery,
New York, NY
4: Imaging of the Knee

W. NORMAN SCOTT, MD

Chairman, Department of Orthopaedic
Surgery,
Beth Israel Medical Center,
New York, NY
Clinical Professor of Orthopaedic
Surgery,
Albert Einstein Medical College,
Bronx, NY
Director, Insall Scott Kelly Institute for
Orthopaedics and Sports Medicine,
Beth Israel Medical Center,
New York, NY
*2: Anatomy
3: Anatomic Aberrations
24: Arthroscopic Meniscal Resection
29: Classification of Knee Ligament
Injuries
34: Anterior Cruciate Ligament
Reconstruction With Bone-Patella
Tendon-Bone Autograft: Indications,
Technique, Complications, and
Management
41: Revision ACL Surgery: How I Do It
45: Dislocation of the Proximal
Tibiofibular Joint
59: Soft-Tissue Considerations About the
Knee: Prevention and Treatment of
Problems*

RICHARD D. SCOTT, MD

Professor of Orthopaedic Surgery,
Harvard Medical School,
Senior Surgeon,
Brigham and Women's Hospital,
New England Baptist Hospital,
Boston, MA
*75: Unicompartmental Total Knee
Arthroplasty*

SUSAN CRAIG SCOTT, MD

Plastic Surgeon and Hand Surgeon,
Private Practice,
New York, NY
*59: Soft-Tissue Considerations About the
Knee: Prevention and Treatment of
Problems*

GILES R. SCUDERI, MD

Assistant Clinical Professor of
Orthopedic Surgery,
Albert Einstein College of Medicine,
Bronx, NY
Associate Chief, Adult Knee
Reconstruction,
Dept. of Orthopedic Surgery,

Beth Israel Medical Center,
New York, NY
7: *Surgical Approaches to the Knee*
29: *Classification of Knee Ligament Injuries*
48: *Quadriceps and Patellar Tendon Disruptions*
87: *Complications of Total Knee Arthroplasty*
88: *Revision of Aseptic Failed Total Knee Arthroplasty*

ALISON SELLECK, MD
Clinic Physician,
National Institute of Allergy and Infectious Disease,
Warren G. Magnuson Clinical Center,
National Institutes of Health Critical Care Medicine Dept.,
Bethesda, MD
52: *HIV Infection and Its Relationship to Knee Disorders*

NIGEL E. SHARROCK, MB, CHB
Senior Scientist,
Hospital for Special Surgery,
New York, NY
56: *Anesthetic Considerations in Knee Surgery—Choice of Anesthesia and the Relationship to DVT*

KONSEI SHINO, MD, PHD
Professor,
Osaka Prefectural College of Health Sciences,
Clinical Associate Professor,
Osaka University Medical School,
Osaka, Japan
37: *Allograft Anterior Cruciate Ligament Reconstruction*

J. SILLIMAN, MD
Beth Israel Medical Center,
New York, NY
16: *Débridement and Microfracture ("Pick Technique") for Full-Thickness Articular Cartilage Defects*

SHELDON R. SIMON, MD
Professor of Clinical Orthopaedic Surgery,
Albert Einstein College of Medicine of Yeshiva University,
Chief, Division of Pediatric Orthopaedics,
Attending Staff, Adult Foot and Ankle,
Beth Israel Medical Center,
New York, NY
9: *Gait—Normal and Abnormal*

RAJ K. SINHA, MD, PHD
Assistant Professor,
Director, Ferguson Laboratory,
Dept. of Orthopaedic Surgery,
University of Pittsburgh Medical Center,
Pittsburgh, PA
89: *Extensor Mechanism Disruption After Total Knee Arthroplasty*

E. SINK, MD
Intern,
Steadman Hawkins Sports Medicine Foundation,
Vail, CO
16: *Débridement and Microfracture ("Pick Technique") for Full-Thickness Articular Cartilage Defects*

ANTHONY T. SORKIN, MD
Orthopedic Surgeon Specializing in Trauma,
Rockford Orthopedic Associates,
Rockford, IL
60: *Supracondylar and Distal Femur Fractures*

CARL L. STANITSKI, MD
Professor of Orthopaedic Surgery,
Medical University of South Carolina,
Charleston, SC
68: *Anterior Cruciate Ligament Injuries and Acute Tibial Eminence Fractures in Skeletally Immature Patients*

J. R. STEADMAN, MD
Co-Chairman and Founder,
Steadman Hawkins Sports Medicine Foundation,
Vail, CO
16: *Débridement and Microfracture ("Pick Technique") for Full-Thickness Articular Cartilage Defects*

STEVEN H. STERN, MD
Associate Professor of Clinical Orthopaedics,
Northwestern University,
Attending Physician,
Northwestern Memorial Hospital,
Chicago, IL
77: *Total Knee Arthroplasty With Posterior Cruciate Ligament Substitution Designs*

KEVIN R. STONE, MD
Orthopaedic Surgeon,
The Stone Clinic,
Chairman, The Stone Foundation for Sports Medicine and Arthritis Research,
San Francisco, CA
17: *Articular Cartilage Repair—The Paste Graft Technique*
26: *Meniscus Regeneration by Collagen Meniscus Scaffolding*

CHARLES BUZ SWANIK, PHD
Director, Graduate Athletic Training/
Sports Medicine,
Department of Kinesiology,
Temple University,
Philadelphia, PA
6: *Neurophysiology of the Knee*

JAMES TAYLOR, MB, CHB, FRACS
Clinical Senior Lecturer,
Christchurch School of Medicine,
University of Otago,
Orthopaedic Surgeon,

Canterbury Health,
Christchurch, New Zealand
93: *Revision Knee Arthroplasty: How I Do It*

GLENN C. TERRY, MD
Staff Physician,
Hugthon Sports Medicine Foundation, Inc.,
Columbus, GA
33: *Anterior Cruciate Ligament Reconstruction With Patellar Tendon Graft*

SOMUSANDARAM THIAGARAJAH, MD
Clinical Professor of Anesthesiology,
Albert Einstein College of Medicine,
Bronx, NY
Attending Anesthesiologist,
Beth Israel Medical Center,
New York, NY
55: *Anesthetic Considerations in Knee Surgery: The Ambulatory Patient*

THOMAS S. THORNHILL, MD
Chairman, Dept. of Orthopedic Surgery,
Brigham and Women's Hospital,
Boston, MA
90: *Infected Total Knee Arthroplasty*

ALFRED J. TRIA, JR., MD
Clinical Professor of Surgery,
Robert Wood Johnson Medical School,
New Brunswick, NJ
1: *Evolution and Embryology of the Knee*
5: *Clinical Examination of the Knee*

PAUL S. TUMBER, MD
Acting Assistant Professor,
University of Washington School of Medicine,
Attending Anesthesiologist, Pain Service,
Harborview Medical Center,
Seattle, WA
57: *Pain Management in Knee Surgery*

VINCENT J. VIGORITA, MD
Professor of Pathology and Orthopaedic Surgery,
State University Health Sciences Center,
Medical Director,
Lutheran Medical Center,
Brooklyn, NY
2: *Anatomy*
50: *The Synovium: Normal and Pathological Conditions*
94: *Bone Tumors and Tumor-Like Lesions of the Knee*

KELLY G. VINCE, MD
Associate Professor,
Dept. of Orthopedic Surgery,
University of Southern California,
Los Angeles, CA
93: *Revision Knee Arthroplasty: How I Do It*

WALTER W. VIRKUS, MD

Assistant Professor of Orthopaedic
Surgery,
Rush Medical College,
Orthopedic Trauma Attending,
Rush-Presbyterian-St. Luke's Medical
Center,
Chicago, IL
61: Tibial Plateau Fractures

VIRGINIA D. WADE, MD

Beth Israel Medical Center,
New York, NY
54: Anesthesia

JAMES A. WALKER, PHD

Adjunct Associate Professor,
University of Utah,
Sport Science Director,
Orthopedic Specialty Hospital,
Salt Lake City, UT
*39: Rehabilitation of the Surgically
Reconstructed and Nonsurgical Anterior
Cruciate Ligament*

PETER S. WALKER, PHD

Professor and Director of Biomedical
Engineering,
The Cooper Union for the
Advancement of Science and Art,
New York, NY
*11: Design Criteria for Total Knee
Replacement*

CARA E. WALTHER, MD

Attending Surgeon—Sports Medicine,
Desert Bone and Joint Specialists,
Bend, OR
*39: Rehabilitation of the Surgically
Reconstructed and Nonsurgical Anterior
Cruciate Ligament*

WILLIAM C. WARNER, JR., MD

Associate Professor of Orthopaedic
Surgery,
Campbell Clinic,
University of Tennessee,
Memphis, TN
65: Congenital Deformities of the Knee

GEOFFREY H. WESTRICH, MD

Assistant Attending Orthopaedic
Surgeon,
Hospital for Special Surgery,
New York, NY
*84: Mechanical Compression Treatment for
the Prevention of Thrombophlebitis*

LEO A. WHITESIDE, MD

Clinical Professor of Orthopaedic
Surgery,
St. Louis University,
Director, Biomechanical Research
Foundation,
Director, Missouri Bone and Joint
Center,
Chief of Staff, Barnes-Jewish West
County Hospital,
St. Louis, MO
79: Cementless Total Knee Designs

THOMAS J. WICKIEWICZ, MD

Professor of Clinical Orthopaedic
Surgery,
Weill Medical College, Cornell
University,
Chief, Sports Medicine and Shoulder
Service,
Hospital for Special Surgery,
New York, NY
41: Revision ACL Surgery: How I Do It

RILEY J. WILLIAMS III, MD

Assistant Professor,
Weill Medical College, Cornell
University,
Assistant Attending Orthopaedic
Surgeon,
Hospital for Special Surgery,
New York, NY
41: Revision ACL Surgery: How I Do It

MARCY WONG, PHD

M.E. Müller Institute for Biomechanics,
University of Bern,
Bern, Switzerland
*12: Articular Cartilage Biology and
Biomechanics*

TIMOTHY M. WRIGHT, PHD

Senior Scientist,
Section Head, Biomechanics and
Biomaterials Department,
Hospital for Special Surgery,
New York, NY
8: Basic Biomechanics

目 录

上 卷

第一篇	➤ 膝关节的基础	1
1	膝关节的进化与胚胎发生	3
2	膝关节解剖学	13
3	解剖学变异	75
4	膝关节影像学	93
5	膝关节骨科检查法	158
6	膝关节的神经生理	172
7	膝关节手术入路	187
第二篇	➤ 膝关节的生物力学	207
8	膝关节基本生物力学	209
9	正常与异常步态	224
10	非负重状态下股骨和胫骨的外形和相对运动——尸体骨 MRI 解剖学研究	245
11	全膝关节置换的假体设计标准	272
第三篇	➤ 关节软骨和半月板	303
12	关节软骨的生物学和生物力学	305
13	关节软骨损伤的修复	313
14	自体软骨细胞移植的现状	326
15	马赛克自体骨软骨移植成形术	343
16	关节清理术和微骨折术治疗全层关节软骨缺损	347
17	关节软骨修复——骨软骨充填移植技术	359
18	膝关节退行性关节炎的关节镜治疗	364
19	幼年型膝关节剥脱性骨软骨炎的治疗	377
20	成人型膝关节剥脱性骨软骨炎的治疗	388
21	自发性骨坏死	399
22	膝关节骨坏死	420
23	膝关节韧带和半月板损伤的修复	439
24	关节镜下半月板切除术	453
25	关节镜下半月板修复缝合术	501
26	胶原半月板支架诱导半月板再生技术	517
27	同种异体半月板移植	523
28	膝关节炎的非手术治疗	541

第四篇 > 膝关节韧带损伤	557
29 膝关节韧带损伤的分类	559
30 关节松弛性测试装置	574
31 膝关节运动评分系统	601
32 膝关节侧副韧带损伤	625
33 髌韧带移植前交叉韧带重建	630
34 自体骨-髌韧带-骨移植前交叉韧带重建术: 适应证、手术技术、并发症及相关处理	638
35 关节镜下腘绳肌腱前交叉韧带重建术: 适应证、手术技术、并发症及相关处理	652
36 半腱肌腱重建前交叉韧带	664
37 同种异体移植前交叉韧带	683
38 慢性前交叉韧带损伤的重建	689
39 前交叉韧带损伤手术重建后和非手术治疗的康复	754
40 膝关节支具在运动损伤治疗中的应用	765
41: 前交叉韧带重建翻修术: 作者的观点	777
41: 前交叉韧带重建翻修术: 作者的观点	788
41: 前交叉韧带重建翻修术: 作者的观点	794
41: 前交叉韧带重建翻修术: 作者的观点	798
42 后交叉韧带损伤的治疗新概念	804
43 后交叉韧带损伤	838
44 膝关节脱位	850
45 上胫腓关节脱位	863
第五篇 > 髌骨与伸膝装置疾患	869
46 髌股关节疾病	871
47 髌股关节疾患的外科治疗: 适应证、疗效和相关建议	991
48 股四头肌肌腱断裂和髌韧带断裂	1017
专业名词中英文对照	I
索引	III

下 卷

第六篇 > 膝关节相关疾病及治疗	1029
49 膝关节炎	1031
50 滑膜组织的正常及病理情况	1043
51 血友病性膝关节炎	1072
52 人类免疫缺陷病毒感染与膝关节疾病	1087
53 复杂性区域疼痛综合征: I型 (反射性交感神经营养不良), II型 (烧灼痛)	1103
54 麻醉	1110
55 膝关节手术的门诊麻醉	1125