

ARTHROSCOPY ASSOCIATION
OF
NORTH AMERICA



Approved 1/18/03

FELLOWSHIP CORE CURRICULUM

Scheme for Prioritizing Levels of Knowledge

I. Management of Presenting Problems

- A - Fellow is expert, manages complex problems
- B - Fellow is capable of managing well defined problems but lacks expert knowledge; uses other expert(s) for complex problems
- C - Fellow possesses a general understanding and familiarity of the problem, refers the patient to a specialist

II. Basic Science/Knowledge of anatomy/Kinesiology, etc. of Presenting Problem

- A - Wide and deep
- B - Less wide and deep
- C - Familiar

III. Surgical Skills (Open, Arthroscopic)

- A - Expert level, ability to handle difficult and complicated cases
- B - Average level, ability to handle routine cases without consultation but the necessity to refer or obtain consultation on more complicated cases
- C - Basic level, ability to understand the techniques and procedures but may require assistance to accomplish procedures

TENDON: APPLIED BASIC SCIENCE

Structure and Function of Normal Tendons

Anatomy	A
Microanatomy	B
Biomechanical properties	B
Biomechanical composition	B
Tendon cell physiology	B

Mechanical Aspects of Tendon Injury

Effect of loading	B
Mechanisms of Injury	B

Tendon Repair and Healing

Cellular response	B
Biomechanical response	B
Biomechemisry response	B
Vascularization	B

Clinical Effects on Tendon Repair

Rehabilitation concepts	B
Immobilization effects	B
Biochemical agents	B

LIGAMENTS: APPLIED BASIC SCIENCE

Structure and Function of Normal Ligaments

Mechanical function	B
Relation to knee kinematics	B
Passive stabilizing mechanisms	B
Dynamic loads	B
Neurosensory aspects	B
Biomechanical properties	B
Ligament insertions	B
Ligament cell physiology	B

Mechanical Aspects of Injury

Mechanisms of failure	B
Strain rate sensitivity	B

Normal Ligament Composition

Anatomy	B
Histology	B
Biomechanical properties	B
Ultrastructural properties	B

Ligament Repair and Healing

Morphology and stages of healing	B
Biomechanics of healing	B
Biochemistry of healing	B
Remodeling and maturation	B
Factors influencing healing	B
Vascularization	B

Clinical Effects on Skeletal Muscle

Age effects	B
Factors influencing growth	B
Biomechanical agents	B
Immobilization effects	B
Rehabilitation concepts	B

Substitutes

Allograft, autograft artificial	B
Biomechanics	B
Healing response	B
Preparation	B
Disease transmission	B

MENISCUS: APPLIED BASIC SCIENCE

Structure and Function of Normal Meniscus

Morphology	B
Microanatomy	B
Ultrastructure	B
Vascular anatomy	B
Meniscus cells	B
Structure-function relationships	B
Biomechanical behavior loading	B
Biochemistry	B

Mechanical Aspects of Injury

Mechanism of failure	B
Classification of tears	B
Regenerative tears	B
Relation to joint kinematics	B

Meniscus Injury and Repair

Repair concepts	A
Regeneration	B
Suture [and repair implant] effects	A
Vascularization	B
Synovial effects	B
Biochemical response	B
Biomechanics	B

Clinical Effects

Crystals	B
Age-related changes	B
Repair techniques	A
Improving repair response	A
Blood supply factors	A

Substitutes

Allograft, Autograft Artificial	B
Biomechanics	B
Healing response	B
Preparation	B
Disease transmission	B

SYNOVIUM: APPLIED BASIC SCIENCE

Structure and Function of Normal Cartilage

Morphology	B
Histology	B
Cellular	B

Injury Aspects

Response to injury	B
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Clinical Effects

Alterations in disease	B
Pharmacologic effects of agents	C

CARTILAGE: APPLIED BASIC SCIENCE

Structure and Function of Normal Cartilage

Morphology	A
Histology	B
Circulation	B
Ultrastructure	C
Biochemistry	B
Biomechanics	B

Mechanical Aspects in Injury

Response to injury	A
Mechanisms of failure	A
Classification of gross changes	B

Repair and Healing

Repair concepts	A
Abrasion, perforation subchondral bone	A
Biomechanical aspects	B
Growth factors	C
Biomechanics	B

Clinical Effects on Cartilage

Motion and loading	B
Immobilization	B
Biomechanical agents	B
Rehabilitation effects	B
Age effects	C
Transplantation-autograft/allograft	B
[Autologous Chondrocyte implantation]	B
Pharmacologic effects	B

VASCULAR SYSTEM: APPLIED BASIC SCIENCE

Structure and Function of Vascular System

Morphology	B
Histology	B
Microcirculation	C

Physiological Factors Effect on Blood Flow C

Peripheral Controls of Circulation C

Abnormalities in Disease States B

APPLICATION OF KINEMATICS

Definitions and Terminology: Motions, Forces, Displacements B

Measurement Techniques C

Upper Extremity: Motion, Forces, Kinematic Analysis B

Lower Extremity: Motion, Forces, Kinematic Analysis B

Relationship External Forces to Internal Loads on Musculoskeletal Structures B

Alteration in Kinematics with Injury

Upper extremity	B
Lower extremity	B

EPIDEMIOLOGY

Definition of Epidemiology

B

Epidemiology vs. Clinical vs. Basic Science Research

B

The Role of Epidemiology Principles in Clinical Practice

Outcome tools and measurement	B
Evidence based medicare	B

Measurement of Morbidity

Rates, ratios, proportions	C
Prevalence, incidence	C

Population

Numerator	C
Denominator	C
Population at risk	C
Injury definition	C

Study Design

Observational & interventional studies	C
Prospective & prospective studies	C
Cohort	C
Cohort studies	C
Case-control studies	C
Cross-sectional studies	C
Randomized clinical trial	C
Causation	C

Bias

Susceptibility	C
Performance bias	C
Detection bias	C
Transfer bias	C
Generalization & validity	C
Blind and double blind	C

The Data Collection Instrument (DC) C

The Pilot Test C

STATISTICS

The Role of the Biostatistician

Study design	C
Sample size determination	C
Data processing and analysis	C

Population and Samples

Mean	C
Median	C
Standard deviation	C

Statistical Calculation

Chi-square (χ^2)	C
p values and statistical significance	C
Student's test	C
Analysis of variance (ANOVA)	C
Regression analysis	C

The Computer in Statistics

Data collection	C
Data storage and display	C
Data analysis	C

(LASER TECHNOLOGY)
[ELECTROMAGNETIC ENERGY TECHNOLOGY]

Physics of Laser	C
Effect of Laser Energy on Tissue	B
Physics of Radiofrequency	C
Effect of Radiofrequency on Tissue	B

ARTHROSCOPY PRINCIPLES

Knee-Knowledge Level

General set-up	A
Equipment	A
Portals	A
Arthroscopic anatomy (normal and pathological)	A

Shoulder-Knowledge Level

General set-up	A
Equipment	A
Portals	A
Arthroscopic anatomy (normal and pathological)	A

Elbow-Knowledge Level

General set-up	A
Equipment	A
Portals	A
Arthroscopic anatomy (normal and pathological)	A

Ankle-Knowledge Level

General set-up	A
Equipment	A
Portals	A
Arthroscopic anatomy (normal and pathological)	A

Wrist

General set-up	B
Equipment	B
Portals	B
Arthroscopic anatomy (normal and pathological)	B

Hip

General set-up	B
Equipment	B
Portals	B
Arthroscopic anatomy (normal and pathological)	B

KNEE

Diagnosis and Surgical Management	Level of Knowledge	Surgical Skills
Meniscus -Excision -Repair -Replacement	A A A B	A A A C]
Osteochondral lesions	A	B
Loose bodies	A	A
Synovial lesions	A	A
DJD to include chondromalacia	A	A
ACL -Reconstruction -Repair	A A A	A A C
PCL	A	B
Fractures	A	C
Patella femoral abnormalities	A	B
Infection	A	A
Total joint	B	C
Osteotomies	B	C

SHOULDER

Diagnosis and Arthroscopic Treatment	Level of Knowledge	Surgical Skills
Rotator Cuff -Impingement -Tears	A A	A A
Instability - Anterior - Posterior - Multidirectional	A A A	A A A
Biceps labral complex	A	A
Articular Cartilage - Loose bodies - DJD	A A A	A A A
Infection	A	A
Fractures	A	B
AC Joint	A	A
Synovial lesions	A	A

ELBOW

Diagnosis and Arthroscopic Treatment	Level of Knowledge	Surgical Skills
Loose body	A	A
Osteochondral dissecans	A	B
Synovium	A	A
DJD	A	B
Fractures	A	C
Infection	A	A
Capsular contractures	A	B

ANKLE

Diagnosis and Arthroscopic Treatment	Level of Knowledge	Surgical Skills
Ligament	A	B
Loose body	A	A
Osteochondral fractures	A	B
DJD	A	B
Synovial lesions	A	A
Infection	A	A
Fusions	A	B
Fractures	A	C

WRIST

Diagnosis and Arthroscopic Treatment	Level of Knowledge	Surgical Skills
Carpal dislocation and instability	B	C
Radiocarpal joint, triangular fibral cartilage	B	C
SL Collabse	B	C
Scaphoid fractures	B	C
Distal radius fractures	B	C
Carpal Tunnel	A	C
Infections	A	C

HIP

Diagnosis and Arthroscopic Treatment	Level of Knowledge	Surgical Skills
Loose bodies	A	C
DJD	A	C
Infections	A	C
Fractures	A	C
Synovial Lesions	A	C

REHABILITATION PRINCIPLES AND MODALITIES

Terminology

Rehabilitation	A
Reconditioning	A
Goals of rehabilitation	A

Physiology

Normal physiology	
Muscle	B
Tendon	B
Ligament	B
Bone	B
Cartilage	B
Types of injury and response	
Muscle	B
Tendon	B
Ligament	B
Bone	B
Cartilage	B
Healing following injury-time constraints for healing, immobility effects, etc.	
Muscle	B
Tendon	B
Ligament	B
Bone	B
Cartilage	B

Modalities

Definitions	A
Physiology	A
Indications	A
Contraindications	A
Application	C
Heat	A
Cold	A
Electrical stimulation	A
Exercise	
Isometric	A
Isotonic	A
Isokinetic	A
CPM	A

End point evaluations

Objective testing methods	A
Functional	A

Bracing

Rehabilitation	A
Functional	A