National Capital Consortium's

TRI-SERVICE MILITARY PRIMARY CARE SPORTS MEDICINE FELLOWSHIP

2008-2009 Fellowship Manual

(Updated 14 July 2008)

Sponsored by the

DeWitt Army Community Hospital
Family Medicine Residency Program
Fort Belvoir, VA

and the

Uniformed Services University of the Health Sciences
Department of Family Medicine
Bethesda, MD

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OVERVIEW

The National Capital Consortium (NCC) Tri-Service Military Primary Care Sports Medicine Fellowship is a one year training program sponsored by the DeWitt Army Community Hospital Family Medicine Residency at Ft. Belvoir, VA, and the Department of Family Medicine at the Uniformed Services University of the Health Sciences (USU) in Bethesda, MD. The fellowship began in 1993, was formally accredited by the Accreditation Council for Graduate Medical Education (ACGME) in September 1997, and re-accredited in May 2002 and May 2005.

Purpose of the Primary Care Sports Medicine Fellowship:

The practice of primary care sports medicine is the application of the physician's knowledge, skills, and attitudes to those engaged in sport and exercise. The fellowship will train primary care specialists in the unique aspects of sports medicine. Trainees will maintain competence in their primary specialty but will have expertise in medicine as it applies to the exercising individual. They will be knowledgeable about the unique needs of the soldier-athlete and will approach their care both from an individual and a systems approach. They will graduate uniquely equipped to serve as consultant clinicians, residency sports medicine training program directors, or military operational physicians.

Fellowship Eligibility:

The fellowship is available to active-duty Army, Navy, Air Force, Coast Guard and Public Health Service physicians who have successfully completed a primary care residency. Training is currently limited to 4 fellows per year, selected on a competitive basis. Preference is given to Family Physicians, but physicians certified in Pediatrics, Internal Medicine, Physical Medicine and Rehabilitation, or Emergency Medicine may be offered fellowship positions, depending on availability of qualified applicants and consent from the respective Service and Consultant.

Scope of Training:

This program will provide training in the development of the clinical competencies needed to diagnose and manage medical illnesses and injuries related to sport and exercise. Clinical experience will include injury prevention, pre-participation evaluation, return to play/duty criteria, management of acute and chronic illness or injury, and rehabilitation. The fellow will function as a team physician and serve in the promotion of physical fitness and wellness for active duty servicemen and women, military retirees and dependents, and civilian athletes.

The program will emphasize physiology and biomechanics; principles of nutrition; pathophysiology of illness and injury; effects of therapeutic, performance enhancing, and recreational drugs; psychological aspects of exercise, performance and competition; ethical principles; medico-legal aspects of exercise and sports; research and medical writing principles; and military unique issues.

The fellow will participate in a robust Scholarly Activities curriculum, to include writing an article or chapter on a sports medicine topic, designing and/or participating in a clinical research project, and regular teaching. The fellow will develop skills in teaching by preparing and delivering lectures to medical students, residents and staff physicians. They will have opportunities to present lectures and research at local and national conferences.

Sports Medicine Training Sites:
Uniformed Services University of the Health Sciences (USU)
Nirschl Orthopedic and Sportsmedicine Center (Virginia Hospital Center)
The Orthopedic Center, Rockville, MD
Ft. Belvoir Primary Care Sports Medicine Clinic
DeWitt Army Community Hospital (DACH)
Malcolm Grow Medical Center (MGMC)
National Naval Medicine Center (NNMC)
United States Naval Academy (USNA) Orthopedics Clinic and Athletic Training Room
George Mason University (GMU) Athletic Training Room
American University (AU) Athletic Training Room
Montgomery College (MC) Training Room
Georgetown University (GU) Training Room
Madison High School (MHS) Athletic Training Room
Saint Mary's High School (SMHS) Athletic Training Room
Good Counsel High School (GCHS) Athletic Training Room
Paul VI High School (P4HS) Athletic Training Room
Mass Participation Events - Marine Corps Marathon, Army 10 Miler, Virginia Special Olympics

Program Narrative Description:

The NCC Primary Care Sports Medicine Fellowship consists of seven major areas of training and occur simultaneously: (1) ambulatory sports medicine clinic; (2) team physician responsibilities at the high school, collegiate, and operational levels; (3) sports medicine didactics; (4) operative and clinical orthopedics; (5) scholarly activities; (6) faculty development; and (7) continuity clinics in Family Medicine. In order to accomplish the goals associated with these rotations the fellowship utilizes two "tracks": the DeWitt Track and the Maryland Track, based upon where the fellows receive their family medicine continuity experience. All sports medicine fellows share the same experience in the ambulatory sports medicine clinics and didactics, scholarly activities curriculum, and faculty development program. The fellows, however, have unique but comparable exposures to orthopedics and team physician responsibilities.

The ambulatory sports medicine clinic assists the fellow in acquiring the skills and knowledge commensurate with a primary care sports medicine specialist. Specifically, the clinic provides fellows exposure to pre-participation examinations, exercise prescription, medical problems related to exercise participation, and ambulatory orthopedics. The fellow is also expected to acquire the following skills: joint aspiration and injection; musculoskeletal ultrasound for guided injections; athletic shoe and gait analysis; proper utilization of bracing, splinting and athletic taping; exercise stress testing; compartment pressure testing; and sub-maximal V02 testing.

Each fellow is given unique team physician responsibilities at multiple levels of athletic skill. The Maryland Track fellows have team physician responsibility at the Naval Academy or American University/Montgomery College, while the DeWitt Track fellows function as team physicians at George Mason or Georgetown University. Each fellow additionally is assigned a high school where they function as the principal team physician. These exposures allow the fellow to participate in pre-participation examinations; acute injury management; event coverage with return to play decision-making; interactions with coaches, trainers, and parents; and preparation planning for event coverage.

The didactic curriculum is designed to increase the fellow's knowledge base in all aspects of Primary Care Sports Medicine. Each week there are approximately four hours of lectures and small group discussions at DACH and USU. This is supplemented by an anatomy curriculum at USU utilizing anatomy texts, Virtual Dissector and Primal software, and cadavers. The fellows get formal instruction on musculoskeletal (Msk) ultrasound, with hands-on practice using cadavers. They attend the Advanced Team Physician Course, where they get an intense exposure to advanced level topics in sports medicine. They also attend an annual meeting of the ACSM, AMSSM, or AOASSM, and the Marine Corps Marathon Medical Symposium. The didactic program can be optionally supplemented by a one-week rotation in one of several electives, depending on the individual needs of the fellow--skeletal radiology at WRAMC; the Army Environmental Medicine course at USARIEM, Natick, MA; updates in ACLS, BLS, and ATLS; a sports medicine acupuncture course; etc.

The orthopedic experience is designed to assist the fellow in acquiring superior orthopedic assessment skills, increase knowledge of pertinent clinical anatomy, improve skill in the use and interpretation of diagnostic imaging, and learn indications for surgical interventions. The full day each week in an orthopedic clinic is supplemented by a half-day of operating room time, giving the fellows experience at surgical first assistance and increased knowledge of anatomy. These experiences help the fellow to build a "team-oriented" relationship with the attending orthopedic surgeons.

Scholarly activities are integral to the program. Each fellow will be involved in several scholarly projects--a clinical case report submission to an annual meeting as above, development of a grant proposal for a research project (which may be started during the fellowship or at the subsequent duty station) or substantial involvement in an ongoing research project, and writing either a review article or medical textbook chapter for publishing. The fellow has a weekly research didactic session and meets regularly with his/her assigned research mentor.

The goal of faculty development curriculum is to increase the fellow's skills in teaching. The fellow will acquire those skills necessary to teach in small groups, prepare and deliver lectures, and precept various levels of health care learners. This is accomplished by regular instruction of third and fourth year USU medical students at Sports Medicine workshops, numerous lecture presentations at varying locations, and weekly opportunities to assist the faculty in precepting learners at DACH Sports Medicine Clinic.

The experience in Family Medicine is to maintain continuity with the fellow's principal specialty. Each sports medicine fellow will have one-half day per week of a continuity clinic. The DeWitt Track fellows will attend patients at the Family Medicine program at DeWitt Army Community Hospital; the Maryland Track fellows will attend at the Malcolm Grow Medical Center Family Medicine Clinic or the USU Family Health Center.

Several short rotations and events are also included in the program to give the fellows exposure to additional training opportunities. Throughout the year military-unique and civilian events occur, e.g. Marine Corps Marathon, Virginia Special Olympics, and the Army 10-Miler, in which all the fellows participate. This unique feature of our fellowship, combining military and civilian exposures, provides an enhanced learning experience to take advantage of the best clinical teaching in the National Capital Area. The Team Physician responsibility is highlighted by a one-week elective rotation in the second half of the fellowship at either the Olympic Training Center in Colorado Springs performing Ringside Physician duties at USA Boxing National Championships, or at the USA Wrestling National Championships and Western Regional Junior Championships in Las Vegas, NV.

Funding:

The parent service of the fellow will pay the usual salaries and bonuses due a board certified physician. Travel to one annual sports medicine meeting will be funded centrally through the fellow's parent service. Travel to the Advanced Team Physician Course, to either the Olympic Training Center or USA Wrestling National Championships, and costs incurred through the use of the USU Learning Resource Center and Audiovisual Department, will be absorbed by the USU Department of Family Medicine. AMSSM dues, In-Training Exam (ITE) fees, and Sports Medicine board certification exam fees will be paid by DACH. Malpractice coverage for services provided by the fellows at any civilian site (e.g. training rooms or event coverage) will be provided by Arlington Hospital through a memorandum of understanding (MOU) with the Nirschl Orthopedic and Sportsmedicine Center.

Conclusion:

The fellowship is designed to train primary care specialists in the unique needs of individuals involved in sport and exercise. This training is especially important for physicians to appropriately address the needs of an active duty population with its inherent physical training requirements. Graduating fellows are expected to expand the knowledge base in this area by teaching in residency training programs and/or advising unit commanders on exercise and training issues.

SECTION I: WEEKLY TEMPLATE OF DUTIES

The approximate percent of weekly hours spent on various activities will be:

Direct patient care in clinic:	45%
Time spent in surgery:	5%
Training room or event coverage:	30%
Lectures, seminars, research:	20%

Core Sports Medicine Template--All Fellows Together

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning 0700-1200		**USU Sports Clinic, HP Lab, AnatomyStudy 0730-1000** **Research Mentor Time Dr. Goodie 1030-1145** **Journal Club quarterly**		**<u>Ft Belvoir</u> FP Lecture 0730-0830** **Sports Medicine Grand Rounds 0830-1000** **Didactics 1000-1200**		**Quarterly MRI Rounds with Dr Sanders**
1200-1300		**Exercise Physiology Lecture with Dr Deuster**				
Afternoon 1300-1600		**Research Time, MS3 teaching, or Education Committee mtg @USU**		**Ft. Belvoir Sports Medicine Clinic/ Treadmill Stress Testing/Cast Clinic**		
Late Afternoon 1700-1900						
Evening 1900-2300						

"DeWitt Track": Fellows 1 & 2 (Alternate M/W Orthopedic Experiences)

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
Morning 0700-1200	Orthopedic Clinic Arlington Dr. Nirschl ***Orthopedic Clinic DACH Dr. Barber***	USU Sports Clinic, HP Lab, AnatomyStudy 0730-1000 Research Mentor Time Dr. Goodie 1030-1145 Journal Club quarterly	0730-0800 Fort Belvoir Family Medicine Morning Report Sports Medicine Clinic 0800-1200	<u>Ft Belvoir</u> FP Lecture 0730-0830 Sports Medicine Grand Rounds 0830-1000 Didactics 1000-1200	0730-0800 Arlington Ortho Grand Rounds Operating Room Dr. Nirschl ***Operating Room DACH Dr. Barber***	*Quarterly MRI Rounds with Dr Sanders
Noon Hour 1200-1300		Exercise Physiology Lecture with Dr Deuster				
Afternoon 1300-1600	Orthopedic Clinic Arlington Dr. Nirschl ***Orthopedic Clinic DACH Dr. Barber***	Research Time, MS3 teaching, or Education Committee mtg @USU	Family Medicine Clinic at Dewitt	Ft. Belvoir Sports Medicine Clinic/ Treadmill Stress Testing/Cast Clinic	Research/ Reading	Event Coverage
Late Afternoon 1700-1900	Training Room George Mason University/ ***Georgetown University***	High School Training Room Dr. Nirschl or Dr Klimkiwicz Georgetown U Ortho Grand Rounds 1700-1900 (optional)	Training Room George Mason University/ ***Georgetown University***			
Evening 1900-2300					Event Coverage	Event coverage

"Maryland Track": Fellow 3, *Fellow 4*

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
Morning 0700-1200	USNA Orthopedic Clinic w/ Drs. Pyne & Keblish *NNMC Sports Medicine Clinic with Dr. deWeber*	USU Sports Clinic, HP Lab, AnatomyStudy 0730-1000 Research Mentor Time Dr. Goodie 1030-1145 Journal Club quarterly	MGMC Sports Medicine Clinic with Dr Beutler ***Operating Room Dr. Boden***	Ft Belvoir FP Lecture 0730-0830 Sports Medicine Grand Rounds 0830-1000 Didactics 1000-1200	Operating Room Annapolis Dr Keblish ***Orthopedic Clinic Rockville Dr. Boden***	*Quarterly MRI Rounds x 3 hours with Dr Sanders
Noon Hour 1200-1300		Exercise Physiology Lecture with Dr Deuster	Family Medicine Lecture			
Afternoon 1300-1600	USNA Orthopedic Clinic w/ Dr. Pyne/Dr Keblish *USU Family Health Clinic*	Research Time, MS3 teaching, or Education Committee mtg @USU	MGMC Family Medicine Clinic *Research & Reading*	Ft. Belvoir Sports Medicine Clinic/ Treadmill Stress Testing/Cast Clinic	Research/ Reading ***Orthopedic Clinic Rockville Dr. Boden***	
Late Afternoon 1700-1900	USNA Training Room,Dr. Pyne ***AU training room w/ Dr. Higgins***		St Mary's HS training room ***AU training room w/ Dr. Higgins***	USNA Training Room, Dr. Pyne ***Montgomery College or GCHS tng rm***		
Evening 1900-2300					Event Coverage	Event coverage

DESCRIPTIONS OF ROTATIONS

All Fellows

Tuesday USU Sports Medicine Clinic, Human Performance Lab, and Anatomy Study

Every Tuesday all fellows will meet at USU. From 0730-1000 two fellows will have clinic in the USU Family Health Clinic seeing patients referred for sports medicine related issues. This will be supervised by the fellowship director or other appointed faculty. One fellow will be designated to do Anatomy self-study using USU software and references. The fourth fellow will participate in activities at the Human Performance Lab with Dr Francis O'Connor or the Injury Prevention Lab with Dr. Anthony Beutler. From 1030-1145 all fellows will participate in the Research seminar with Dr Jeff Goodie. This curriculum includes instruction on medical writing, research project design, analysis of the literature, and research presentations. The fellows will also participate in bimonthly Exercise Physiology and Sports Medicine lectures at noon. Once a month they will participate in the Family Medicine Education Committee meeting from 1300-1430. The remainder of the afternoon is for self-directed research, study, or event coverage.

Every six weeks the fellows will assist the fellowship director in a whole-day Sports Medicine seminar for USU MS3 students beginning their Family Medicine rotation. This will include lecture presentations and hands-on workshops and will help the fellows to develop their teaching skills.

Thursday DACH Family Medicine Residency Lectures

Once a month from 0730-0830 the fellows will participate in Sports Medicine teaching of the DACH Family Medicine residents. Fellows and faculty will do presentations followed by small-group workshops. On other Thursday mornings, attendance at Morning Report at 0730 is optional.

Thursday DACH Sports Medicine Grand Rounds and Didactics

Every Thursday morning from 0830-1200 in the Family Medicine Conference Room the fellows will participate in Grand Rounds, in which one or two patients are examined and presented to the Orthopedics, Physical Therapy and Sports Medicine faculty for discussion, teaching, and management. This is followed by a didactic session.

Thursday DACH Sports Medicine Clinic, Cast Room, and Exercise Treadmill Testing

Every Thursday afternoon two fellows will see Sports Medicine clinic, supervised by the fellowship director or other faculty. This clinic exposes fellows to a wide variety of Primary Care Sports Medicine conditions, both orthopedic and medical, in patients of all ages, both military and civilian. One fellow will work in the Cast Room, and the fourth fellow will supervise exercise treadmill tests with the on-call Internist.

Saturday Mornings

Four times a year the fellows will have a 3-hour block of instruction in musculoskeletal radiology given by COL (Ret) Tim Sanders, MD, a musculoskeletal radiologist. There are also three all-day Msk Ultrasound Seminars scheduled in the first quarter of the academic year.

Saturday or Sunday Afternoons

The fellows assist their respective team physicians during medical coverage of collegiate events, and will periodically participate in the medical coverage of special events such as the Marine Corps Marathon, the Army 10-miler, and Special Olympics competitions.

"DeWitt Track" Fellows

DACH Orthopedic Clinic and Nirschl Orthopedic Clinic

Mondays all day are spent in this rotation, which will expose the fellows to a wide variety of acute and chronic orthopedic problems. The fellow will be supervised by the staff orthopedic surgeons and will have the opportunity to monitor the progress of patient's recovery in the physical therapy department. The two DeWitt Track fellows will alternate between the DACH and Nirschl orthopedic clinics each week to broaden their exposure to all types of problems and patients.

George Mason University and Paul VI High School Training Room and events

The fellow will evaluate and manage athletes with sports-related problems in the training room and on the field of play under the auspices of Frank Pettrone, M.D., Team Physician for GMU. The schedule will be coordinated between the fellow, the Head Athletic Trainers, and the Team Physician.

Georgetown University and Madison High School Training Room and events

The fellow will evaluate and manage athletes with sports-related problems in the training room and on the field of play under the auspices of Clark Holmes, MD, Team Physician for GU, and Dr. Frank Pettrone for Madison HS. The schedule will be coordinated between the fellow, the Head Athletic Trainers, and the Team Physician.

DACH Primary Care Sports Medicine Clinic

On Wednesday mornings the two DeWitt fellows will evaluate and treat patients referred to the Sports Medicine clinic under the supervision of a family physician with a certificate of added qualification in Sports Medicine.

DACH Family Medicine Clinic

On Wednesday afternoons the fellows will see patients in the Family Medicine Clinic. This will serves as the continuity clinic, exposing them to the entire spectrum of patients and problems encountered in family medicine.

Orthopedic Operating Room exposure

On Friday mornings the fellow working at the Nirschl Clinic will attend Orthopedic Grand Rounds at Virginia Hospital Center, Arlington VA and then assist an orthopedic surgeon from the Nirschl/Arlington Orthopedic group with appropriate orthopedic cases. The fellow working at DACH will assist the orthopedic surgeon there with appropriate orthopedic cases.

Self-Study and Research Time

On Friday afternoons the DeWitt Track fellows have time for research and/or reading, followed usually by athletic event medical coverage later that evening.

"Maryland Track" Fellows

USNA Orthopedic Clinic

For the USNA fellow, Mondays all day are spent in this rotation, which will expose the fellow to a wide variety of acute and chronic orthopedic problems. The fellow will be supervised by the staff orthopedic surgeons and will have the opportunity to monitor the progress of patient's recovery in the physical therapy department.

USNA and St. Mary's High School Training Room and events

The fellow will evaluate and manage athletes with sports-related problems in the training room and on the field of play under the auspices of Dr. Scott Pyne, Team Physician for USNA, and Dr. Lou Ruland, Team Physician for St. Mary's High School. The schedule will be coordinated between the fellow, the Head Athletic Trainers, and the Team Physicians.

MGMC Sports Medicine Clinic

On Wednesday mornings the USNA fellow will evaluate and treat patients referred to the Sports Medicine clinic under the supervision of a family physician with a certificate of added qualification in Sports Medicine.

MGMC Family Medicine Clinic

On Wednesday afternoons the USNA fellow will see patients in the Family Medicine Clinic. This will serves as the continuity clinic, exposing them to the entire spectrum of patients and problems encountered in family medicine.

Orthopedic Operating Room exposure

On Friday mornings the USNA fellow will assist an orthopedic surgeon from USNA with appropriate orthopedic operative cases. On Wednesday mornings the AU fellow will do the same with The Orthopedic Center surgeon.

Self-Study and Research Time

Wednesday afternoons for the AU fellow and Friday afternoons for the USNA fellow will be devoted to research and/or reading, followed usually by athletic event medical coverage later that evening if needed.

USU Family Health Clinic

On Monday Mornings the AU fellow will see patients in the Family Health Clinic. This will serves as the continuity clinic, exposing them to the entire spectrum of patients and problems encountered in family medicine.

NNMC Sports Medicine Clinic

On Monday afternoons the AU fellow will evaluate and treat patients referred to the Sports Medicine clinic under the supervision of a family physician with a certificate of added qualification in Sports Medicine.

American University, Montgomery College, and Good Counsel High School Training Room and events

The AU fellow will evaluate and manage athletes with sports-related problems in the training room and on the field of play under the auspices of Dr. David Higgins, Team Physician for AU; Dr. Barry Boden, Team Physician for Montgomery College; and Dr. David Higgins, Team Physician for GCHS. The schedule will be coordinated between the fellow, the Head Athletic Trainers, and the Team Physicians.

The Orthopedic Center, Rockville, MD

For the AU fellow, Fridays all day are spent in this rotation, which will expose the fellow to a wide variety of acute and chronic orthopedic problems. The fellow will be supervised by the staff orthopedic surgeons and will have the opportunity to monitor the progress of patient's recovery in the physical therapy department.

Elective Courses and Rotations

As time and resources permit, fellows may be allowed to spend one week in an elective course of their choosing. Examples include:

Acupuncture in Sports Medicine course.

Musculoskeletal Ultrasound course

U.S. Army Environmental Medicine Course

This course is sponsored each year by the U.S. Army Environmental Research Laboratory at Natick, MA. The course is one week in duration and covers current management of environmental conditions on operational activities. This is presently an elective rotation.

U.S. Army Ergonomics Course

This course is sponsored each year by the U.S. Army Ergonomics Research Laboratory at the CHPPM, Aberdeen Proving Grounds, MD. The course is one week in duration and covers current ergonomic concepts. This is presently an elective rotation.

USA Boxing National Championships, Olympic Training Center, Colorado Springs, CO

This elective rotation is coordinated by Evans Army Community Hospital Sports Medicine staff. The fellow will rotate through various sections at the Olympic Training Center and Sports Science Center. The fellow will additionally participate in the Army World Class Athlete Program training room clinic and events at Ft. Carson and in the Human Performance Lab at the U.S. Air Force Academy. The fellow will attend the Ringside Physician Course in conjunction with event coverage at the USA Boxing National Championships.

USA Wrestling National Championships, Las Vegas, NV

This elective rotation is coordinated by Dr. Mike Gunter at the University of Toledo Sports Medicine Clinic through a MOU with USA Wrestling. Fellows participate in on-site care of one hundreds of wrestlers for several days.

Armed Forces Sports camps or competitions locally or abroad

The US Armed Forces Sports organization provides a method for national- and world-class athletes on active military duty to compete between services and internationally.

SECTION II - SCHEDULED SEMINARS AND CONFERENCES

Research Seminar 10 hours monthly

This is organized by the USU Department of Family Medicine and conducted weekly on Tuesday mornings. The fellows will be instructed in medical writing, research design, and statistics through assigned weekly readings and small group discussions with a preceptor. In addition, the fellow will be required to either submit a new protocol in the area of Sports Medicine to the appropriate IRB, or to participate in a substantial way in an ongoing approved project. Fellows are also expected to participate in one writing project during the year and to submit a case report for presentation at a national meeting (ACSM).

Exercise Physiology Seminar 2 hours monthly

This is organized by USU exercise physiologists and will be held the 2nd Tuesday of each month. The fellows will listen to updates of on-going research projects and have the opportunity to work on their own projects or with others in the Human Performance Laboratory and Injury Prevention Laboratory. There will be lectures on Exercise Physiology topics, some of which the fellows will present.

Sports Medicine Grand Rounds 1.5 hours weekly

To be held on Thursday mornings DACH Family Medicine Conference Room. This will be attended by the orthopedic surgeons, physical therapists, primary care sports medicine faculty, fellows, and rotating residents and medical students. Difficult cases will be discussed, lectures presented, and journals reviewed.

Primary Care Sports Medicine Seminar 4 hours weekly

The fellows will meet with the fellowship director and assistant director to discuss topics in sports medicine that are not well addressed with direct patient care. The fellows will prepare for this through assigned weekly readings.

Capital Conference

This is a family medicine board review course jointly sponsored by the Departments of Family Medicine at USU, MGMC and DACH, held in the spring. The fellows will be asked to present 1-2 30-minute lectures on exercise or sports related topics. They may also attend the entire course for a review of Family Medicine.

Advanced Team Physician Course

This five day course sponsored by the ACSM gives fellows an in-depth exposure to a wide variety of topics. It takes place in December and serves to reinforce concepts they may already have been exposed to and introduce them to new and controversial topics in Sports Medicine.

National Sports Medicine Meetings

Fellows are required to attend one of the following three national Annual Meetings, based on the preference of the fellowship director and the academic schedule. Each fellow will be encouraged to present a case report or other presentation at the meeting.

American Medical Society for Sports Medicine (AMSSM) Annual Meeting

The AMSSM is the parent organization for primary care sports medicine physicians. The lectures at this meeting are meant to present current research and reviews of pertinent non-musculoskeletal and musculoskeletal issues related to athletes.

American Osteopathic Academy of Sports Medicine (AOASM) Annual Meeting

The AOASM is the parent organization for primary care sports medicine osteopathic physicians. The lectures at this meeting are meant to present current research and reviews of pertinent non-musculoskeletal and musculoskeletal issues related to athletes.

American College of Sports Medicine (ACSM) Annual Meeting

The ACSM is the most established sports medicine organization in the U.S. It is comprised of exercise physiologists, athletic trainers, physical therapists, physicians, and exercise specialists. The annual meeting offers hundreds of lectures, posters, and seminars on exercise related issues and sports injuries.

SECTION III - AFFILIATIONS

Academic: Uniformed Services University of the Health Sciences

Clinical: DeWitt Army Community Hospital, Ft. Belvoir, VA
Nirschl Orthopedic and Sportsmedicine Center at Arlington Hospital
U.S. Naval Academy
Malcolm Grow Medical Center
George Mason University
Georgetown University
American University
Montgomery College
Good Counsel High School
St Mary's High School
Paul VI High School
Madison High School
Army Ten-Miler race
Marine Corps Marathon
Special Olympics local events

Memoranda of Understanding (MOU's) are written between the NCC and the following organizations:

1. The Nirschl Orthopedic Center for Sports Medicine at Arlington Hospital (orthopedic clinic, George Mason University and Paul VI HS team physician coverage, and malpractice coverage for the fellows at other Virginia training sites)
2. U.S. Naval Academy (orthopedics clinic and team physician duties)
3. Georgetown University Hospital (team physician duties)
4. Fairfax Family Health/ Virginia Commonwealth University Primary Care Sports Medicine Fellowship Program (their fellows do some training with ours)
5. The Medical Practice of Dr. Barry Boden (rotations at the Orthopedic Center in Rockville and team physician duties at Montgomery College)
6. The Medical Practice of Dr. David Higgins (team physician rotations at American University and Good Counsel High School)
7. Anne Arundel Orthopedics (team physician duties at St Mary's High School)
8. USA Wrestling
9. Special Olympics Virginia (covers local event attendance)

MOU's are not required with NCC training sites (DeWitt ACH, Malcolm Grow Medical Center, National Naval Medical Center). Program Letters of Agreement (PLA's) are in place for those sites if the Program Director is not directly responsible for fellow supervision, in addition to those where MOU's are in place.

SECTION IV - FELLOWSHIP PROGRAM TEACHING STAFF

PROGRAM DIRECTOR:

Kevin deWeber, MD, FAAFP
LTC, MC, USA
Assistant Professor of Family Medicine, USU. Board Certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.

ASSOCIATE PROGRAM DIRECTOR:

Francis G. O'Connor, MD, MPH, FACSM
COL, MC, USA
Associate Professor of Family Medicine, USU. Medical Director, USU Consortium for Health and Military Performance (CHAMP). Board certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.

AFFILIATE PROGRAM DIRECTOR:

Robert P. Nirschl, M.D., M.S.
Medical Director, Nirschl Orthopedic and Sportsmedicine Center
Arlington, VA

FAMILY MEDICINE RESIDENCY DIRECTORS:

Kevin Moore, MD, LTC, MC, USA
Residency Director, DeWitt Army Community Hospital, Fort Belvoir, Virginia. Board Certified in Family Medicine

Robert Manaker, MD, Col, MC, USAF
Residency Director, Malcolm Grow Air Force Medical Center, Andrews Air Force Base, MD. Board Certified in Family Medicine

ORTHOPEDIC SURGERY CONSULTANT:

David Barber, MD, COL, MC, USA. DACH Orthopedic Clinic. Board Certified in Orthopedic Surgery.

OTHER FACULTY:

<u>Primary Care Sports Medicine</u>

Bruce Adams, MD, CAPT, MC, USN. Director, Primary Care Sports Medicine, U.S. Naval Clinic Quantico. Board certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.
Medical Director, Marine Corps Marathon

Thomas Howard, MD, COL, MC, USA (Ret). Fairfax Family Health Center, Fairfax, VA. Director, Virginia Commonwealth University Primary Care Sports Medicine Fellowship. Board certified in Family Medicine with a Certificate of Added Qualification in Sports Medicine.

Scott Pyne, MD, CDR, MC, USN. Director, Sports Medicine, U.S. Naval Academy. Board certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.

Kelly Skanchy, MD, CDR, MC, USN. Director of Brigade Medical Clinic, USNA. Board certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.

Clarke Holmes, MD. Site coordinator, Team Physician, and teaching faculty, Georgetown University. Board certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.

Jeffrey Leggit, MD, LTC, MC, USA. Commander of Barquist Army Health Center, Ft. Detrick, MD. Board certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.

Terry Adirim, MD. Emergency Pediatric and Primary Care Sports Medicine, Board Certified in Pediatrics with Certificate of Added Qualification in Sports Medicine. Washington, DC.

Sean Mulvaney, MD, MAJ(P), MC, USA. Assigned to Ft. Meade, MD. Board certified in Family Medicine with a Certificate of Added Qualification in Primary Care Sports Medicine.

Duane Hennion, MD, MAJ, MC, USA. Team Physician at U.S. Military Academy. Coordinates PPE's and Sports Medicine Symposium at West Point in late summer.

Orthopedic Surgery

David Keblish, MD, CDR, MC, USN. Orthopedic Sports Medicine at National Naval Medical Center and U.S. Naval Academy.

Mike Battaglia, MD, CDR, MC, USN. Orthopedic Sports Medicine at National Naval Medical Center and U.S. Naval Academy.

Barry Boden, MD. Orthopedic Sports Medicine, in private practice in Silver Spring, MD. Local High School Team Physician and Head Team Physician, Montgomery College.

David L. Higgins, MD. Orthopedic Sports Medicine, in private practice in Washington, D.C. and Maryland. Head Team Physician, American University.

Frank Pettrone, MD, Orthopedic Sports Medicine, based at Arlington Hospital. Head Team Physician at George Mason University. Supervises fellows at team sporting events and athletic training clinics.

David Barber, MD, LTC, MC, USA. Chief, Orthopedic Sports Medicine, based at DACH. Consultation and precepting on weekly basis in the Sports Medicine Clinic.

Matthew Kelly, MD, MAJ, MC, USA. Staff Orthopedic Surgeon at DACH. Consultation and precepting on weekly basis in the Sports Medicine Clinic.

Herb Eidt, MD, MAJ, MC, USA. Staff Orthopedic Surgeon at DACH. Consultation and precepting on weekly basis in the Sports Medicine Clinic.

Athletic Training

Linda Pullen, ATC. Head Athletic Trainer at George Mason University. Direct assistant to sports medicine fellow.

Jim Berry, ATC. Athletic Trainer at USNA. Direct assistant to sports medicine fellow.

Sean Dash, ATC. Head Athletic Trainer at American University. Direct assistant to sports medicine fellow.

Doug Huffman, ATC. Head trainer at Georgetown University. Direct assistant to sports medicine fellow.

Carrie Steele, ATC. Head trainer at Montgomery College. Direct assistant to sports medicine fellow.

Clinical Imaging

Tim Sanders, MD, Col (Ret), MC, USAF . Private practice musculoskeletal radiologist, Charlottesville, VA. Coordinates fellowship MRI teaching.

Coaching

Michael Flannagan, Head Coach, USNA Men's Soccer Team.

Exercise Physiology

Patricia Deuster, Ph.D., MPH
Department of Military and Emergency Medicine, USU.
Coordinates core exercise physiology curriculum.

Faculty Development and Research

Jeffrey Goodie, Maj, MC, USAF. Clinical Psychologist and Assistant Director of Research in the Department of Family Medicine at USU, Bethesda, MD.

Cindy Wilson, Ph.D., C.H.E.S. Director of Faculty Development in the Department of Family Medicine at USU. Coordinates faculty development for the department of Family Medicine.

Internal Medicine

Iris Keyes, MD. Internal Medicine, DeWitt Army Community Hospital. Board Certified in Internal Medicine. Coordinates teaching/precepting for treadmill stress testing.

Nutrition

Patricia Deuster, Ph.D., MPH. Exercise physiology and sports nutrition.
Department of Military and Emergency Medicine
Uniformed Services University of the Health Sciences

Pathology

Donald Taillon, MD, LTC, MC, USA. Board certified in Pathology.
Chief, Pathology, DeWitt Army Community Hospital, Ft. Belvoir, VA.

Pharmacology

Lela King, PharmD, MAJ, SP, USA. Clinical Pharmacologist.
Chief of Pharmacy, DeWitt Army Community Hospital, Ft. Belvoir, VA.

Physical Medicine and Rehabilitation

Paul Pasquina, MD, LTC, MC, USA
Board certified in Physical Medicine and Rehab and a Certificate of Added Qualification in Sports Medicine
Walter Reed Army Medical Center, Washington, DC

Physical Therapy

Sue Davis, DPT, MAJ, SP, USA. Staff physical therapist, DACH. Consultant to the Sports Medicine Clinic.

Jon Lesher, DPT, CPT, SP, USA. Staff physical therapist, DACH. Consultant to the Sports Medicine Clinic.

Podiatry

Lem Zarzuela, DPM. Available as consultant to the Sports Medicine Clinic.
DeWitt Army Community Hospital, Fort Belvoir, VA.

CV's available on request.

All fellowship staff has or is invited to have faculty appointments at USU.

SECTION V – FELLOW SUPERVISION POLICY

Fellows are supervised closely and in person by program faculty during the initial several months of the fellowship. Initially all patient encounters are discussed in person with the on-site faculty, and the patients seen by the faculty as well if deemed prudent. Faculty should use their judgment about the residents' skill levels in determining the level of supervision required. As the residents gain medical knowledge and clinical experience in the various cases they encounter, faculty are encouraged to gradually increase the level of residents' independent evaluation and decision-making responsibilities. However, at all times faculty for each site will be available for immediate consultation by the residents, preferably in person, but at a minimum, by phone or electronic means.

The lines of resident supervision are as follows:

1. First line: faculty from the site at which residents are currently rotating (see Section I for assigned faculty).
2. Second line: Program Director.
3. Third line: Associate Program Director.

Phone numbers and email addresses of these individuals will be published annually at the beginning of each fellowship academic year, reflecting individual changes.

Supervision should be documented, which can be accomplished in several ways, depending on the administrative systems in place at each training site. These can include:

1. Notation by the fellow in the Progress Notes of which faculty the case was discussed with.
2. Patients can be booked under the name of the supervising faculty; this will be apparent in the electronic databases.
3. Case logs. Training sites where the same faculty member is always available implies that he/she was the supervisor for those cases.
4. Didactic and Event Schedule—on Tuesdays and Thursdays, the assumed supervisor for PCSM clinics is the Program Director, unless otherwise specified.

SECTION VI - EVALUATION POLICY AND METHODS

1. Evaluation of PCSM fellows is to be done quarterly by the following from their respective tracks:
    a. Training site attending physicians (one from each site), using Clinical Faculty Evaluation Form
    b. Research Seminar faculty, using Research Faculty Evaluation Form
    c. University Head Athletic Trainers, using Head Athletic Trainer Eval Form
2. Fellow evaluation requests should be sent to the above faculty in the last week of the quarter of evaluation (earlier for the 4th quarter). Requests will be sent via e-mail by the Program Administrator in the following time frames:
    a. Quarter 1: last week of October
    b. Quarter 2: last week of January
    c. Quarter 3: last week of April
    d. Quarter 4: last week of June
3. Evaluations by faculty should be completed no later than 30 days after the end of the quarter (or by 31 July for 4th quarter)
4. Evaluations should be completed using the form located on eValue.com.
    a. Faculty who need assistance with a password and/or access to eValue should call the Program Administrator, CeeCee Cummings, at 301-295-9463, or ccummings@usuhs.mil.
    b. Faculty who cannot complete on-line evaluations should request that Ms. Cummings send the evaluation form on paper via USPS. Completion should follow the same timeline.
5. Evaluations of fellows by patients on the Army Provider Level Patient Satisfaction Surveys (through DeWitt) will be obtained by the Program Administrator or Program Director each quarter.
6. The Program Administrator will track the above evaluations until they are complete and assemble them for quarterly review by the Program Director. The PD will meet quarterly with each fellow to review the evaluations and accomplishments and complete the Quarterly Evaluation Form. Each fellow will review and sign this form and receive a copy.
7. Evaluation of the Program and of the program faculty will be done annually, in late July, after fellows' faculty evaluations have been turned in and final counseling is complete. This will be sent to them by eValue and will allow them to evaluate the Program and faculty anonymously.
8. A comprehensive assessment of the Program will be completed annually at the midway point of the academic year (February). This will be done in a meeting of program directors, core faculty, and senior fellow and will use a comprehensive approach. This will allow any suggested program changes to be planned and implemented before the start of the next academic year.
9. Six months after graduation, evaluation forms will be sent electronically to the supervisors of the recently graduated fellows, using the Six Month Post-Graduation Evaluation. This will allow the Program to determine how it is equipping graduates to serve in their follow-on assignments.

SECTION VII – ACGME CORE COMPETENCIES

I. PATIENT CARE

1. Patient Evaluation
   a) History and Physical
   b) Appropriate utilization of diagnostic studies
   c) Interviewing skills
2. Integration of initial and follow-up assessments
   a) Demonstration of effective and appropriate clinical problem solving skills
   b) Inclusion of allied health assessments
   c) Generation of differential diagnosis
   d) Appropriate interpretation of diagnostic studies
   e) Use of consultants and referral sources
3. Formulation of a patient management/treatment plan
   a) Effective communication with interdisciplinary team
   b) Inclusion of patient/family in treatment plan
   c) Cost effective approach to management
4. Prescription, performance or interpretation of appropriate procedures and Modalities
   a) Specific therapy and modality prescription
   b) Electrocardiographic studies
   c) Therapeutic/diagnostic injections and aspirations
5. Assessment and provision of continuum of care needs
   a) Effective communication with interdisciplinary team
   b) Inclusion of patient/family in long term plan
   c) Appropriate utilization of resources available
   d) Provision of, or referral for primary medical care
6. Patient and family counseling/education
   a) Assisting patient development of self-advocacy skills
   b) Provision of education in injury/disease primary prevention
   c) Provision of education in prevention of secondary complications
7. Knowledge and use of information technology-internet and computer application
8. Provision of care that is sensitive to the needs of those with cultural, ethnic, social, or economic diversity.

II. MEDICAL KNOWLEDGE

1. Basic Knowledge
   a) Gross musculoskeletal anatomy and neuroanatomy
   b) Body mechanics and gait analysis
   c) Muscle and cardiovascular physiology
   d) Prescription writing
   e) Common physical therapy modalities
   f) Sports medicine interventional techniques including joint aspiration, joint injections, and peripheral injections

g) Roles of allied health professionals

2. More specific knowledge of exercise prescription, preparticipation assessment, and musculoskeletal medicine, is addressed in the Specific Goals and Objectives.

III. INTERPERSONAL AND COMMUNICATION SKILLS

1. Communicate effectively with patients and families to create and sustain a professional and therapeutic relationship
2. Communicate effectively with physicians, other health professionals, and health related agencies
3. Work effectively with others as a member or leader of a health care team or other professional group
4. Be able to act in a consultative role to other physicians and health professionals
5. Maintain comprehensive, timely, and legible medical records

IV. PRACTICE-BASED LEARNING AND IMPROVEMENT

1. Analyze practice experience in a systematic manner
   a) Progress towards goals by completion of year of training
   b) Progress towards goals by specific rotation
   c) Extent of visits to therapies and participation in the application of therapy modalities
   d) Number of injections, aspirations.
   e) Review of critical incidents
2. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
   a) Use of medical libraries for text based information
   b) Use of information technology such as drug databases or literature searches
   c) Establishing goals for and monitoring progress toward independent reading
   d) Establish goals for independent learning
3. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
   a) Critical appraisal of current literature in journal clubs, didactic sessions, or patient care conference
   b) Review of literature for research projects
4. Use of information technology to manage information, access on-line medical information: and support their own education
   a) Use of hospital/clinic computer based information systems for daily patient care, including charting, review of laboratory data, review of prior health care
   b) Use of e-mail or web based discussion groups for didactic or clinical work
5. Facilitate the learning of students and other health care professionals.
   a) Presentations/participation in team conferences
   b) Participation in "in-service" teaching for allied health personnel
   c) Teaching medical students in basic science courses or on clinical rotations

V. PROFESSIONALISM

1. Demonstrate respect for and a responsiveness to the needs of patients and society
   a) Accept responsibility for patient care including continuity of care
   b) Demonstrate integrity, honesty, compassion, and empathy in the role of physician
   c) Demonstrate dependability and commitment
2. Consistently demonstrate high standards of ethical behavior in clinical practice
3. Demonstrate sensitivity to and respect for the dignity of patient and colleagues as persons including their age, culture, disabilities, ethnicity, gender, and sexual orientation

VI. SYSTEM-BASED PRACTICE

1. Demonstrate knowledge of community systems of care and assist patients to access appropriate levels of care
   a) Demonstrate a knowledge of treatment settings including inpatient, outpatient, skilled units, independent living, and others
   b) Demonstrates knowledge of the organization of care in each relevant delivery setting
   c) Demonstrate the ability to integrate care of patients across settings
2. Demonstrate the ability to work in various health care settings
   a) Demonstrate the ability to partner with health care managers and providers to assess, coordinate, and improve health care
   b) Assess how activity in health care settings can affect system performance
3. Understand how patient care and professional practices affect other health care professionals, health care organizations, and society as a whole
4. Practice cost effective health care and resource allocation that maximizes quality of care
5. Advocate for patients
   a) Advocate for quality patient care
   b) Assist patients and their families in dealing with system complexities
6. Promote health and function and the prevention of disease and injury

SECTION VIII – SPECIFIC GOALS AND OBJECTIVES

The Role of Team Physician

Goals:

Completion of this section will enable the resident to:

G1. Effectively serve as a team physician.

Objectives:

The resident will attain/achieve the above goal(s) by meeting the following objectives:

O1.1 Relate the essential components of medicine, psychology and behavior, pharmacology, and exercise science to the role of team physician

O1.2. Compare the roles of those involved with the health of the athlete including:

the athlete	the coach
the athlete's primary care physician	the athletic trainer
medical consultants	the athletic director
the athlete's parents	

O1.3. Compare the team physician's responsibilities

to the athlete:	to allow to participate	to protect confidentiality
	to provide optimal care	access to care
to the team:	to facilitate success of the team	
to the coach:	to educate	
	to protect from liability	

O1.4. Define the roles of the team physician:

medical supervision	administrative function
logistics and supplies	coordination of medical care of the athlete
medicolegal issues	medical insurance
education	

The Preparticipation Athletic Examination (PPAE)

Goals:

Completion of this section will enable the resident to:

G1. Conduct a complete pre-participation evaluation on an individual athlete.

G2. Organize and administer a system for PPAE for groups of athletes

G3. Make sound recommendations for participation in competitive sports based on the findings in the PPAE

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 List the essential components of the family history, past medical history and physical examination as it pertains to the PPAE.

O.1.2 Differentiate the sport specific components of the PPAE.

O1.3. Demonstrate a time efficient PPAE.

O1.4. Conduct a body fat determination using skin fold calipers.

O1.5. Explain the indications for laboratory studies in the PPAE.

O2.1. Compare the relative merits of the individual vs. station method of PPAE's.

O2.2. Explain the proper timing and frequency of PPAE.

O2.3. Construct a sample form for the preparticipation medical history evaluation on physical examination.

O2.4. Identify the essential stations necessary for group PPAE's and the type of health care providers needed at each station.

O3.1. List the sports classified by the American Academy of Pediatrics as:

contact collision	moderately strenuous non-contact
limited contact impact	non-strenuous non-contact
strenuous non-contact	

O3.2. Make recommendations regarding competing under the above classifications of sports for:

atlantoaxial instability	acute illness
carditis	HTN
congenital heart disease	the monocular athlete
detached retina	inguinal hernia
hepatosplenomegaly	absence of paired organ
history of head injury	asthma
sickle cell disease	contagious rashes

Drug Use in Sports

Goals:

Completion of this section will enable the resident to:

G1. Differentiate the classes of banned drugs and methods of doping utilized by athletes.

G2. Analyze the prevalence of drug use by athletes.

G3. Explain the reasons for use, the mechanism of action, adverse effects, and the methods of detection for each class of drug.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. List both the IOC and NCAA banned drugs and the reasons why they are banned under the following classifications:

stimulants	narcotics
anabolic steroids	beta-blockers
diuretics	growth hormone
recombinant EPO	B-2 agonists

O1.2. Explain the methods and reasons for blood doping, and pharmacological, chemical, and physical manipulation of the urine.

O2.1. Compare the approximate prevalence of use among athletes for each category listed in O1.1.

O3.1. Explain the mechanism of action, purported benefits, side effects, dosage, and detection for:

anabolic steroids	human growth hormone
amphetamines	cocaine
caffeine	sympathomimetic amides
alcohol	marijuana
blood doping including reEPO	bicarbonate or phosphate loading

O3.2. Describe and compare the methods and indications for drug testing using:

thin layer chromatography
radioimmunoassay and enzyme-multiplied immunoassay
gas chromatography/mass spectroscopy

O3.3. Analyze the methods of drug detection circumvention by athletes:

masking agents
determination of drug half life
substitution of urine

O3.4. Identify the legal limitations of drug testing.

Exercise Physiology

Goals:

Completion of this section will enable the resident to:

G1. Understand the physiological changes that happen in each organ system and at the cellular level with varying levels of aerobic, resistance and flexibility exercise and varying levels of fitness.

G2. Describe methods to assess cardiorespiratory fitness, muscle strength, and flexibility.

Objectives:

O1.1. Explain the relative contributions of glycolysis, ATP, creatine phosphate, fatty acids and other substrates in energy production during exercise.

O1.2. Compare energy utilization with intensity and duration of exercise.

O1.3. Identify different muscle fiber types and their roles in aerobic and resistance exercise.

O2.1. Describe VO2max, its physiological determinants, and the methods used to measure it.

O2.2. List the methods used to gauge levels of exertion.

O2.3. Describe different types of muscular contraction and clinical methods to assess them.

Nutrition

Goals:

Completion of this section will enable the resident to:

G1. Recommend a "heart healthy" diet to patients.

G2. Compare the various energy systems utilized in exercise.

G3. Explain the theory behind glycogen replacement drinks during endurance events and define what type and amount is appropriate.

G4. Explain how to determine percent body fat and how to use this information in dietary advice.

G5. Compare the nutrient needs of athletes vs. non-athletes.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Compare the fat, CHO, and protein intake of average Americans to that recommended by the AHA and the recommended diet for the endurance athlete.

O1.2. Calculate the estimated number of daily calories required to maintain weight for a 70kg individual who is:

sedentary	mildly active
moderately active	strenuously active

O2.1. Relate muscle glycogen content to athletic performance.

O2.2. Identify dietary methods and amounts of increasing muscle glycogen stores.

O3.1. Compare muscle glycogen, blood glucose, and hepatic glucose under four states:

fasting	normal diet
high carbohydrate diet	exogenous glucose during exercise

O3.2. Analyze glycogen replacement drinks containing:

simple sugars
complex carbohydrates
glucose polymers

O3.3. List the optimal type and amount of CHO to be ingested during carbohydrate loading, during an event, and after the event.

O4.1. Compare the methods of determining percent body fat including:

hydrostatic weighing	skin fold calipers
electrical impedance	taping

O4.2. Calculate percentage body fat using one of the above methods and write a weight loss prescription towards a target percent body fat.

O5.1. Compare the protein requirements of males, females, endurance athletes, and strength athletes.

O5.2. Explain the iron requirements for exercising women.

O5.3. List the calcium requirements of exercising euestrogenic and hypoestrogenic women.

Exercise and Aging

Goals:

Completion of this section will enable the resident to:

G1. Counsel patients on the risks and benefits of exercise.

G2. Write an exercise prescription for elderly individuals.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the risks associated with sedentary lifestyle.

O1.2. Describe the normal cardiovascular and neuromuscular adaptations to both aerobic exercise and strength training.

O1.3. Compare the physiologic effects of aging with those of disuse.

O1.4. Explain how quality of life can improve with an exercise program.

O1.5. Analyze the physiologic components of aging that can be attenuated through exercise including:

aerobic capacity	neuromuscular weakness
mental alertness	bone density

O1.6. Compare the amount of exercise with health and fitness benefits.

O1.7. Explain the cardiovascular and orthopedic risks involved with starting an exercise program in the elderly.

O2.1. List the indications for exercise stress testing prior to clearing an individual for aerobic exercise or strength training.

O2.2. Explain the C-V and musculoskeletal risks associated with exercise in the elderly.

O2.3. Construct an exercise prescription for enhancing aerobic capacity.

O2.4. Construct an exercise program for an elderly individual desiring improved strength.

Children and Exercise

Goals:

Completion of this section will enable the resident to:

G1. Counsel parents, coaches, school administrators, on the patterns of youth fitness, activity and obesity.

G2. Analyze the motivational issues involved in youth sports participation.

G3. Relate normal growth and development to exercise training.

G4. Advise young athletes on the efficacy of aerobic training.

G5. Advise young athletes on the risks and benefits of strength training.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Define and relate activity, fitness and obesity.

O1.2. Describe the epidemiology and trends of children's activity, fitness, and obesity.

O2.1. List the common reasons children give for participating in sports and for quitting sports.

O2.2. Relate children's activity and fitness patterns to those of their parents.

O2.3. Explain how the activity patterns and fitness of children relate to carry-over patterns as adults.

O3.1. Correlate changes in aerobic capacity with age in both girls and boys.

O3.2. Explain the difference between aerobic capacity in boys and girls.

O3.3. Describe the cardiovascular and neuromuscular changes inherent in growth and development.

O3.4. Compare the physiologic changes in children who exercise with those who do not including:

body composition	aerobic capacity
strength	flexibility

O3.5. Compare the musculoskeletal risks in exercising children with those in adults.

O4.1. List the known physiologic changes in children undergoing exercise training.

O4.2. Compare the aerobic capacity and performance of children who train aerobically with those that do not.

O4.3. List the known risks of aerobic training in children including:

cardiovascular
musculoskeletal
psychological

O5.1. Compare the efficacy of strength training in children with strength training in adults.

O5.2. List the types and etiologies of injuries incurred in children while strength training.

O5.3. Explain the cardiovascular response incurred by children who strength train.

O5.4. Devise a safe and effective strength training program based on Tanner staging.

Women and Exercise

Goals:

Completion of this section will enable the resident to:

G1. Describe the relationship between osteoporosis and exercise.

G2. Give advice to women with menstrual disorders who exercise.

G3. Explain the special nutritional concerns to women who exercise.

G4. Give the pregnant athlete guidelines on exercise.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the physiology of osteogenesis.

O1.2. Relate calcium intake, hormonal status and osteoporosis.

O1.3. Explain the relationship between exercise and osteoporosis.

O1.4. Describe the impact of excess exercise on bone health.

O2.1. Describe the relationship between premenstrual syndrome and exercise.

O2.2. Relate athletic performance to the phases of the menstrual cycle.

O2.3. Explain athletic amenorrhea - its etiology and treatment.

O3.1. Write the recommended calcium intake for:

adolescent females
adult females
post-menopausal females

O3.2. Explain the etiologies and treatment for iron deficiency in female athletes.

O4.1. Explain the physiologic changes of pregnancy including:

oxygen consumption
metabolism and temperature
uterine oxygen consumption
physical work capacity
circulation

O4.2. Relate the above changes to the additional demands of exercise.

O4.3. List the contraindications to exercise in pregnancy.

O4.4. Describe the benefits of exercise in pregnancy.

O4.5. Write specific guidelines for the exercising pregnant patient.

Pulmonary Problems

Goals:

Completion of this section will enable the resident to:

G1. Diagnose and treat Exercise Induced Bronchospasm (EIB).

G2. Diagnose and treat pneumothorax.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Explain the pathophysiology and triggers of EIB.

O1.2. Describe the historical features of EIB.

O1.3. List the criteria for diagnosing EIB on exercise stress testing.

O1.4. Explain the pharmacologic and non-pharmacologic treatment of EIB.

O2.1. Explain the etiologies of pneumothorax.

O2.2. Describe the history, physical exam, and x-ray features of pneumothorax.

O2.3. Explain the appropriate treatment of pneumothorax and the return to play criteria.

Exercise in Diabetes

Goals:

Completion of this section will enable the resident to:

G1. Advise the diabetic individuals on the risks and benefits of exercise.

G2. Give specific guidelines on prevention of hypoglycemia in the exercising diabetic.

Objectives:

The fellow will attain/achieve the above goals by meeting the following objectives:

O1.1. Explain the normal metabolic responses to exercise and compare them to the diabetic patient.

O1.2. List the guidelines for the pre-participation evaluation of diabetic individuals.

O1.3. Describe the risks of exercise in diabetic patients.

O2.1. Write the blood glucose parameters within which it is safe to exercise.

O2.2. Explain the dietary and insulin adjustments recommended for prevention of hypoglycemia during exercise.

Hematologic Problems

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat athletes with anemia.

G2. Recommend safe exercise for patients with sickle cell disease.

G3. Recognize, evaluate and treat patients with rhabdomyolysis.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Define anemia and explain the common etiologies for males and females.

O1.2. Describe the physiology of athletic pseudoanemia.

O1.3. Explain the work-up of anemia.

O1.4. Relate abnormal laboratory studies to specific etiologies of anemia.

O1.5. Explain the rational treatment of anemia in athletes.

O2.1. Explain the pathophysiology and manifestations of sickle cell disease and trait.

O2.2. Describe the precipitating factors of sickle crisis.

O2.3. Relate exercise, altitude, and heat to sickle cell disease.

O2.4. List the relative and absolute contraindications for patients with sickle cell disease and trait.

O3.1. Explain the etiology of rhabdomyolysis.

O3.2. Describe the clinical and laboratory manifestations of rhabdomyolysis.

O3.3. Explain the treatment of rhabdomyolysis.

Cardiovascular Problems

Goals:

Completion of this section will enable the resident to:

G1. Screen individuals for risk of sudden death

G2. Differentiate athletic heart from pathologic conditions.

G3. Advise patients with cardiovascular disease on exercise limitations.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. List the most common causes of sudden death for individuals less than 35 years old and those greater than 35 years old.

O1.2. Differentiate the characteristics of benign heart murmurs from pathologic heart murmurs.

O1.3. List the indications for exercise stress testing for patients anticipating an exercise training program.

O1.4. Describe the cost effective use of echocardiogram in screening for significant cardiac pathology.

O1.5. List the salient features of Marfan's syndrome.

O1.6. Explain the etiologies and evaluation of syncope in the athlete.

O2.1. Describe the physical exam, EKG, and echocardiographic features of athletic heart syndrome and explain the reasons.

O2.2. Relate the above to pathologic conditions including:

LVH	CHF
cardiomyopathy	myocarditis
pericarditis	arrhythmias

O3.1. List the cardiovascular conditions which contraindicate vigorous exercise and those that require close monitoring.

O3.2. List exercises and activities under the following intensity demands:

high-medium dynamic, high static	low dynamic, high-medium static
high-medium dynamic, low static	low dynamic, low static

O3.3. Explain the activity recommendations for the common dysrhythmias.

O3.4. Explain the effects of calcium channel blockers, ACE inhibitors, beta-blockers, digoxin, and diuretics on exercise.

O3.5. Describe the relationship between infectious disease and myocarditis and pericarditis.

Gastrointestinal Problems

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat patients with runners diarrhea

G2. Advise athletes on the prevention and treatment of travelers diarrhea.

G3. Evaluate and treat athletes with GERD.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the incidence of diarrhea in endurance athletes.

O1.2. Explain the theories on the etiology of runner's diarrhea.

O1.3. Describe the appropriate evaluation of runner's diarrhea.

O1.4. Identify the methods of treatment and explain the rational.

O2.1. List the etiologic infectious organisms in traveler's diarrhea.

O2.2. Explain the common mode of transmission of these organisms and methods to minimize risk of contracting disease.

O2.3. Compare the medications used for both prevention and treatment of travelers diarrhea.

O3.1. Describe the pathophysiology of gastroesophogeal reflux disease (GERD).

O3.2. List the historical features of patients with GERD.

O3.3. Explain the non-pharmacologic and pharmacologic methods of treatment.

O3.4. List the indications for EGD in patients with GERD.

Genitourinary Problems

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat athletes with proteinuria.

G2. Evaluate and treat athletes with hematuria.

G3. Evaluate and treat athletes with scrotal pain.

G4. Evaluate and treat athletes with urethritis or discharge.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. List the benign and more serious causes of proteinuria.

O1.2. Describe the pathophysiology of proteinuria.

O1.3. Explain the systematic evaluation of proteinuria.

O1.4. List the indications for referral to a nephrologist in patients with proteinuria.

O2.1. List the etiologies of both microscopic and gross hematuria.

O2.2. Describe the systematic evaluation of hematuria.

O2.3. List the indications for referral to a urologist.

O3.1. List the intra and extrascrotal etiologies of scrotal pain.

O3.2. Explain the systemic evaluation of the patient with scrotal pain.

O3.3. Differentiate historical, physical exam, laboratory studies, and perfusion studies between testicular torsion and epididymitis.

O3.4. Describe the treatment for the individual causes of scrotal pain.

O4.1. List the infectious and non-infectious etiologies of urethritis.

O4.2. Describe the laboratory tests and findings in the evaluation of urethritis.

O4.3. Describe the appropriate treatment for:

GC	syphilis
chlamydia	epididymitis
chancroid	herpes simplex
genital warts	

Acute Minor Illness

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat athletes with acute minor illness.

G2. Make appropriate recommendations regarding exercise while suffering from AMI.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. List the common etiologies and treatment of rhinorrhea.

O1.2. List the common causes and treatment of otalgia.

O1.3. Describe the etiologies and treatment of pharyngitis.

O1.4. Describe the clinical and laboratory manifestations of mononucleosis

O1.5. Describe the evaluation of an athlete with a cough.

O1.6. List the categories of medications found in over-the-counter remedies which are banned by the IOC and /or NCAA.

O2.1. Relate exercise with febrile and non-febrile illnesses with development of myocarditis and cardiomyopathy.

O2.2. Describe the side effects of commonly used cold medications which may adversely affect athletic performance.

O2.3. Explain the risks involved with sport and exercise in an individual with mononucleosis.

O2.4. List the return to play criteria after infectious mononucleosis.

Dermatologic Problems

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat common dermatologic problems in athletes.

G2. Make recommendations regarding participation in contact sports with an infectious dermatologic condition.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the clinical manifestations and treatment of:

corns and calluses	warts
ingrown nails	onychomycosis
abrasions	cellulitis
molluscum contagiosum	friction blisters
dyshydrotic eczema	scabies
herpes	paronychia
impetigo	acne vulgaris
folliculitis	contact dermatitis
sunburn	frost bite

O2.1. Explain the return to play criteria for:

herpes gladiatorum	impetigo
folliculitis	molluscum contagiosum
scabies	

O2.2. Differentiate between contact and non-contact sports for participation with the above conditions.

Neurologic Injuries

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat or appropriately refer athletes with brachial plexus injury.

G2. Evaluate and manage athletes with closed head injury.

G3. Evaluate and manage athletes with headache.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Define neuropraxias, axonotmesis, and neurotmesis.

O1.2. Describe the pathophysiology, clinical manifestations, and treatment of:

burner syndrome (stinger)	nerve root avulsion
suprascapular nerve palsy	lung thoracic nerve palsy
axillary nerve palsy	acute brachial neuropathy

O1.3. Describe the return to play criteria for the above.

O2.1. Describe the pathophysiology and clinical manifestations of epidural hemorrhage, subdural hemorrhage and concussion.

O2.2. Demonstrate an "on-field" neurologic assessment.

O2.3. List and define the classification of concussions

O2.4. Recite the return to play guidelines based on the grade of concussion and the number of injuries.

O3.1. Explain the pathophysiology of headache.

O3.2. Describe the evaluation and treatment of:

migraine	benign exertional headache
weight lifters headache	boxer’s or footballer’s headache

O3.3. List the common features of intracranial mass lesions.

<u>Exercise and Heat</u>

Goals:

Completion of this section will enable the resident to:

G1. Advise individuals on the risk of heat injuries during exercise.

G2. Give preventive advice to avoid heat injury during exercise.

G3. Evaluate and treat individuals with heat injury.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the use of the wet bulb globe temperature in evaluating heat load.

O1.2. Explain the physiologic mechanisms of heat dissipation.

O1.3. List the long term consequences of heat injury.

O1.4. List the drugs and their mechanism of action which predispose to heat injury.

O1.5. Differentiate the heat injury risks among children, elderly, healthy adults, cardiac patients, and patients with spinal cord injury.

O2.1. Explain the mechanism, time course, and methods of heat acclimation.

O2.2. Relate heat accumulation and dissipation to the color and fabric of clothing.

O2.3. Describe the relationship between hydration, performance and heat injury.

O2.4. Prescribe the appropriate fluid replacement during exercise in the heart--both type and amount.

O3.1. Define heat cramps, dehydration, heat exhaustion, heat stroke, and heat syncope.

O3.2. Describe the clinical manifestations of heat injury.

O3.3. Explain the pathophysiology of heat injury.

O3.4. Explain which laboratory studies, and why, are ordered in potential heat stroke patients.

O3.5. Describe the appropriate cooling methods and medical treatment for heat injuries.

<u>Cold Injuries</u>

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat cold related injuries.

G2. Advise athletes on the performance consequences of exercise in cold environments.

G3. Advise athletes on prevention of cold injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Define hypothermia, frostnip, and grades I, II, and III frostbite.

O1.2. Describe the pathophysiology, clinical manifestations, and treatment of hypothermia.

O1.3. Differentiate resuscitation of the hypothermic patient from the euthermic patient.

O1.4. Describe the signs and symptoms of frostnip and frostbite.

O1.5. Explain the evaluation procedures, rewarming techniques and treatment of frostbite.

O2.1. Explain the physiologic changes of cold exposure.

O2.2. Describe the mechanisms of heat loss.

O2.3. Relate low and high intensity exercise performance to being cooled prior to exercise and being cooled during exercise.

O2.4. Explain the benefits of warming prior to the start of exercise in cold environments.

O3.1. Relate nutritional factors to increased heat production.

O3.2. Describe the "layer principle" of clothing.

O3.3. Describe methods of decreasing heat loss from the head.

<u>Air Pollutants and Exercise</u>

Goals:

Completion of this section will enable the resident to:

G1. Advise patients on the potential adverse effects of exercising in air pollutants.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe how ozone is produced and its role in pulmonary dysfunction.

O1.2. Relate ozone concentration to the time of day and to fog.

O1.3. Describe the etiology of "acid rain" and its effects on the pulmonary system.

O1.4. Explain the physiologic effects of inhaled sulfur dioxide.

O1.5. Describe the etiology and mechanism of action of carbon monoxide.

O1.6. Relate CO concentrations to clinical manifestations.

O1.7. Relate exercise CO absorption to exercise.

Altitude and Exercise

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat acute mountain sickness.

G2. Advise athletes on the methods of acclimatization.

G3. Advise athletes on the relationship between altitude and performance.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the pathophysiology of AMS.

O1.2. List the predisposing factors for developing AMS.

O1.3. Explain the treatment for AMS.

O2.1. Describe the physiologic changes associated with acute and chronic altitude exposure.

O2.2. Relate the time of exposure to altitude to physiologic changes.

O3.1. Describe performance changes of both anaerobic and aerobic activities at altitudes higher than training altitudes.

O3.2. Relate training at altitude to performance at sea level.

O3.3. Explain performance changes for athletes training at a lower altitude than which they live.

Sports Psychology

Goals:

Completion of this section will enable the resident to:

G1. Relate behavior development to sports and exercise participation.

G2. Integrate psychological reactions to injury into a comprehensive rehabilitation program.

G3. Identify psychological factors that impact on performance.

G4. Develop a psychological management plan to optimize performance.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. List the motivational factors for children participating in sports.

O1.2. List the common reasons children quit sports.

O1.3. Explain the relationship between challenge and enjoyment in sports for children.

O1.4. Relate the behavioral components of an exercise program to compliance for different age groups.

O2.1. Identify the sources of stress perceived by athletes hampered by injury.

O2.2. Describe the sequence of psychological reactions experienced by the injured athlete.

O2.3. Explain how health care providers can facilitate motivation during rehabilitation.

O3.1. List the aspects of competition that worry athletes.

O3.2. Relate levels of arousal to performance.

O3.3. List the common stress related behaviors.

O3.4. Describe the signs and symptoms of anorexia nervosa and bulimia.

O4.1. Explain the rational use of hypnosis in facilitating performance.

O4.2. Describe the role of the team physician in psychologic support.

O4.3. List the instruments useful in psychologic evaluation of the athlete.

O4.4. List the indications for referral to a sports psychologist or a psychiatrist.

Fieldside Emergencies

Goals:

Completion of this section will enable the resident to:

G1. Develop a system of managing and transporting emergencies.

G2. Thoroughly assess and stabilize the severely injured athlete.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. List the essential supplies, medicine, and equipment for handling potential emergencies.

O1.2. Explain the qualifications and role of the "team leader" in the event of a field emergency.

O1.3. Identify qualified ancillary individuals and explain their role in assisting the team leader.

O1.4. Explain how to arrange ambulance transportation for an event.

O1.5. Describe the necessary communication network that needs to be in place prior to an event.

O2.1. Explain and demonstrate the ABCDE of initial assessment.

O2.2. Explain and demonstrate the secondary survey of an injured athlete.

O2.3. Demonstrate the method of stabilization and transport of a patient with suspected spinal cord injury or open fracture.

O2.4. Describe the different levels of shock and explain the treatment.

O2.5. List the signs and symptoms of anaphylaxis.

O2.6. Describe the treatment of anaphylaxis.

Taping and Bracing

Goals:

Completion of this section will enable the resident to:

G1. Advise on the rational use of prophylactic bracing.

G2. Prescribe appropriate orthoses and braces in the rehabilitation of injuries.

G3. Explain the indications and demonstrate taping techniques of various joints.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Explain the indications and efficacy of knee braces used to prevent injury.

O1.2. Compare canvas braces, stirrup braces, and taping when used to prevent ankle injuries.

O1.3. Describe the indications for prophylactic ankle bracing/taping.

O2.1. Explain the efficacy and indications for the use of:

prophylactic knee braces	derotational knee braces
hinged knee braces	neoprene knee braces
patellar tracking knee braces	Kinney-Howard shoulder harnesses
elastic ankle braces	canvas ankle braces
stirrup ankle braces	counter force elbow braces
back braces	

O2.2. Describe the indications for:

viscoeleastic shoe inserts	longitudinal arch supports
spring-steel shoe inserts	metatarsal pads
heel cups	cork and leather arch supports
custom molded orthoses	

O2.3. Differentiate flexible, semi-rigid, and rigid foot orthoses.

O2.4. Demonstrate casting techniques to include:

SLC	SAC
LAC	sugar tong splint
posterior leg splint	thumb spica cast
dorsal extension block cast	

O2.5. Demonstrate the methods for determining forefoot and hindfoot deformities and relate them to a custom foot orthoses prescription.

O3.1. Describe the indications for and demonstrate the following tape techniques:

finger buddy taping	thumb figure of eight
thumb check rein	wrist taping
elbow hyperextension taping	medial elbow taping
medial knee taping	ankle taping

patellofemoral taping
plantar fascia taping
turf toe taping

Health Risk Appraisal

Goals:

Completion of this section will enable the resident to:

G1. Advise commands or organizations on practical and useful methods of health risk appraisal.

G2. Relate the results of health risk appraisal to strategies in changing adverse lifestyle behavior.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Relate each of the following categories to risk of premature death:

age	tobacco use
blood pressure	diet/obesity
occupation	seat belt use
sedentary lifestyle	alcohol use
stress	cholesterol level

O1.2. Explain a practical system of obtaining information related to the above categories from individuals and/or populations.

O1.3. Analyze manpower requirements and costs associated with a health risk appraisal system.

O2.1. Describe methods of analyzing health risk data and relating it to relative risk.

O2.2. Explain methods of using health risk data to improve compliance with recommendations.

O2.3. Describe the appropriate use of follow-up visits on improving compliance.

Pharmacology

Goals:

Completion of this section will enable the resident to:

G1. Rationally prescribe NSAIDs in the treatment of musculoskeletal injuries

G2. Appropriately use injectable steroid preparations in the treatment of musculoskeletal injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Explain the biochemical and cellular processes which mediate the inflammatory response.

O1.2. Describe the histologic and biochemical features of chronic inflammation.

O1.3. Describe the mechanisms of action of NSAIDs.

O1.4. List commonly used NSAIDs under class:

salicylates	propionic acids
acetic acids	phenylacetic acids
fenamates	oxicams
pyrazoles	

O1.5 Relate rational prescribing practices to the above classes.

O1.6. List the common side effects of NSAID's.

O1.7. Explain the appropriate laboratory surveillance of athletes in NSAID's.

O2.1. Explain the mechanism of action of steroids.

O2.2. Compare the relative potency and duration of action among injectable steroids.

O2.3. Describe the indications and complications of steroid injections.

Modalitiesin Rehabilitation

Goals:

Completion of this section will enable the resident to:

G1. Rationally prescribe physical therapy modalities in the treatment of musculoskeletal injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the mechanism of action, methods, indications, contraindications and complications of:

cryotherapy	heat therapy
ultrasound	phonophoresis
electrical stimulation	iontophoresis

Ethical Concerns

Goals:

Completion of this section will enable the resident to:

G1. Understand and minimize the potential conflicts associated with treating athletes

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Analyze the following potential conflicts:

role of team physician vs. fan.
welfare of the athlete vs. team.
welfare of the athlete vs. wishes of the athlete.
welfare of the athlete vs. the wishes of the family
welfare of the athlete vs. coach/team owner.

O1.2. Explain methods of minimizing potential conflicts:

clarification of roles	professional autonomy
communicate	eliminate personal bias
initial managing of injury	

Medicolegal Aspects of Sports Medicine

Goals:

Completion of this section will enable the resident to:

G1. Analyze the legal definition of negligence.

G2. Minimize the risk of law suit while functioning as team physician.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Explain the following elements of negligence:

the physician duty to act to avoid unreasonable risk to others

the defendants obligation to observe the above duty
actual damage or injury occurring
the relationship between cause of damage and failure to observe duty

O1.2. Define standard of care, assumption of risk, and contributing negligence.

O2.1. Explain the role of the following in minimizing risk:

establishing guidelines	written contracts
ancillary staff/education	preparticipation exams
informed consent	release of information
record keeping	consultation

standard of care/return to play criteria

Athletes with Disabilities

Goals:

Completion of this section will enable the resident to:

G1. Make recommendations for participation in sports and exercise for athletes with special needs.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the capabilities and exercise limitations of athletes with:

mental retardation	Down syndrome
paraplegia	sensory impairment

O1.2. Explain the physiologic changes in patient with spinal cord injuries that impact on exercise performance.

O1.3. List and describe the classifications for National Wheelchair Athletic Association competitions.

O1.4. Describe the anomalies associated with Down syndrome which place them at higher risk for certain activities.

O1.5. Describe the types of sports in which mentally retarded children are more likely to succeed.

INJURIES

Head Injuries

Goals:

Completion of this section will enable the resident to:

G1. Clinically evaluate the head injured patient.

G2. Develop an appropriate plan of evaluation and management.

G3. Determine when the head injured patient may return to play.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the underlying pathophysiology in concussions, subdural hematomas, epidural hematomas, and second-impact syndrome.

O1.2 Conduct a thorough neurologic examination as it pertains to head injuries and explain what each test is evaluating.

O1.3 List the signs and symptoms of increased intracranial pressure.

O2.1 Describe the indications for various radiographic tests in evaluating head injuries.

O2.2 Compare the fieldside management of both the conscious and unconscious head injured patient.

O2.3 Explain the indications, use, and complications of furosemide, mannitol, and steroids in the head injured patient.

O3.1 Recite both the Cantu and the Colorado Medical Society classification of head injuries.

O3.2 Relate the above classification to return to play criteria.

O3.3 Describe the "second impact syndrome"

O3.4 Explain the potential problems associated with multiple head injuries and describe the appropriate evaluation in such patients.

O3.5 List the features of post-concussive syndrome

Maxillofacial Injuries/EENT

Goals:

Completion of this section will enable the resident to:

G1. Identify and appropriately manage injuries to the face.

G2. Prescribe preventative appliances appropriately.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe how cauliflower ear develops and how it is managed.

O1.2 Identify the clinical and radiographic features of the various LaForte fractures.

O1.3 List the clinical features of orbital (blow-out) fractures

O1.4 Describe the systematic evaluation of eye trauma and what is identified with each test.

O1.5 List the ocular injuries requiring immediate referral to an opthalmologist.

O1.6 Describe the indications, technique, and timing for setting nasal fractures.

O1.7 Compare the various methods of airway management in the patient with maxillofacial trauma.

O1.8 Describe the treatment for dental injuries including: chipped tooth, pulp exposure, and tooth avulsion.

O1.9 Name the limitations of the monocular athlete.

O2.1 Explain the requirements for preventative appliances including: mouth guards, protective eyewear, and ear protectors.

Neck Injuries.

Goals:

Completion of this section will enable the resident to:

G1. Make recommendations regarding prevention of cervical spine injuries.

G2. Discuss the differential diagnosis and pathophysiology of neck injuries.

G3. Appropriately evaluate and manage the patient with a neck injury

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the trends of the national incidence of significant spinal cord injuries and the reasons for this trend.

O1.2 List the common mechanisms of significant spinal cord injuries.

O1.3 Analyze the methods most commonly employed to decrease spinal cord injuries.

O2.1 Describe the pathophysiology underlying myofascial sprain/strain, spinal cord injuries, herniated nucleus pulposus, cervical spine instabilities and fractures, and stingers.

O2.2 Relate spinal stenosis to spinal cord injury.

O2.3 Identify individuals who are at a higher risk for spinal cord injury.

O3.1 Demonstrate the initial management of an athlete with a suspected C-spine injury.

O3.2 Describe the clinical manifestations of various spinal cord injuries.

O3.3 Conduct and explain the essential components of the physical examination in patients with suspected cervical spine injuries-both for acute and chronic pain.

O3.4 Systematically analyze plain C-spine radiographs and compare abnormalities with underlying pathology. Include fractures, dislocations/subluxations, instabilities, and spinal stenosis.

O3.5 List the indications for further radiographic studies including: technetium scans, flexion and extension views, MRI and CT scans.

O3.6 Explain the proper use of medications in the patient with suspected spinal cord injury.

O3.7 Construct an appropriate physical rehabilitation program for patients with cervical spine injuries.

O3.8 Explain the indications and contraindications for returning to play after a neck injury.

<u>Shoulder Injuries</u>

Goals:

Completion of this section will enable the resident to:

G1. Systematically evaluate a patient with an acute shoulder injury.

G2. Systematically evaluate a patient with chronic shoulder pain.

G3. Construct an appropriate management plan for patients with shoulder injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Relate mechanism of injury to sternoclavicular injury, acromioclavicular injury, glenohumeral dislocations, glenoid labral tears, rotator cuff tears, biceps tendon ruptures, fractures and neurovascular injuries.

O1.2 Demonstrate the physical exam pertinent to the acutely injured shoulder and describe what each test is assessing.

O1.3 Explain the appropriate radiographic evaluation of the acutely injured shoulder.

O2.1 Explain the underlying pathology responsible for:

osteolysis of the distal clavicle	glenoid labral tears
acromioclavicular pain	instabilities
impingement	scapulothoracic pain
rotator cuff tendinitis	growth plate injuries
bicipital tendinitis	thoracic outlet syndrome
subclavian vein thrombosis	
nerve injuries (suprascapular, long thoracic, axillary)	

O2.2 Demonstrate an appropriate physical examination of the patient with chronic shoulder pain and explain what each test is evaluating.

O2.3 Choose the appropriate radiographic tests and views in evaluating chronic shoulder pain.

O3.1 Explain the natural history of both acute and chronic shoulder injuries.

O3.2 Compare surgical and non-surgical treatment of the various shoulder injuries listed above.

O3.3 Write a physical rehabilitation program for each of the above entities.

<u>Elbow Injuries</u>

Goals:

Completion of this section will enable the resident to:

G1. Systematically evaluate a patient with an acute elbow injury.

G2. Systematically evaluate a patient with chronic elbow pain.

G3. Construct an appropriate management plan for patients with elbow injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Relate the mechanism of injury to fractures of the proximal humerus, radius, and ulna, posterior dislocations, and compartment syndromes.

O1.2 Describe the clinical and radiographic features of:

Fractures
- supracondylar
- medial and lateral epicondylar
- medial and lateral condylar
- growth plate

Dislocations
- posterior

Traumatic and exertional compartment syndromes

O1.3 Clinically differentiate a supracondylar fracture from a dislocation.

O2.1 Describe the pathophysiology of the following

- medial and lateral epicondylitis
- ulnar collateral ligament laxity
- cubital tunnel syndrome
- subluxing ulnar nerve
- "little-league" elbow
- osteochondritis dessicans
- distal bicipital tendinitis
- triceps tendinitis
- olecranon impingement
- olecranon bursitis
- olecranon apophysitis
- pronator teres syndrome
- posterior interosseous syndrome
- anterior interosseous syndrome
- radial tunnel syndrome

O2.2 Demonstrate the clinical exam as it relates to each of the above entities and describe the pertinent findings.

O2.3 List the indications for radiography and the appropriate views in the evaluation of the above entities.

O3.1 Explain the indications for surgery for both acute and chronic injuries of the elbow.

O3.2 Describe the appropriate method and time of immobilization for traumatic elbow injuries not requiring surgery.

O3.3 Construct a rehabilitation program for traumatic elbow injuries after either surgery or immobilization.

O3.4 Explain the proper use of physical modalities, stretching, and strengthening in the rehabilitation of chronic elbow injuries.

Wrist Injuries

Goals:

Upon completion of this section will enable the resident to:

G1. Systematically evaluate the acutely injured wrist.

G2. Systematically evaluate patients with chronic wrist pain

G3. Develop an appropriate management plan for patients with both acute and chronic wrist injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Draw the carpal bones and the pertinent intrinsic and extrinsic stabilizing ligaments.

O1.2 Describe the functional biomechanics of wrist motion and how it relates to wrist injuries.

O1.3 Relate ligamentous injuries to:

scapholunate dissociation	triquetrolunate instability
perilunate dislocation	triquetrohamate instability
lunate dislocation	subluxation of the extensor carpi ulnaris tendon

O1.4 Identify the components of the triangular fibrocartilage complex and relate them to TFCC injuries.

O1.5 Demonstrate the physical examination of the acutely injured wrist and describe what is being evaluated with each test.

O1.6 List the appropriate radiographic views and describe the findings in evaluating:

scaphoid fractures	capitate fractures
trapezium fractures	scapholunate dissociation
trapezoid fractures	lunate dislocation
lunate fractures	perilunate dislocation
triquetral fractures	perilunate dislocation

pisiform fractures
hamate fractures
triquetrohamate instability
radial growth plate injury

O2.1 Describe the pathophysiology underlying:

Tenosynovitis
- DeQuervain's tenosynovitis
- extensor carpi radialis tenosynovitis
- common extensor tenosynovitis
- intersection syndrome

Soft tissue impingement
- scaphoid impingement syndrome
- radial styloid impingement syndrome
- triquetrohamate impingement

Tendinitis
- extensor pollicis longus tendinitis
- extensor carpi ulnaris tendinitis
- flexor carpi radialis tendinitis
- flexor digitorum tendinitis
- pisiform tendinitis

Recurrent subluxation of ext.carpi ulnaris
Carpal tunnel syndrome
Ganglionic cysts
Hypothenar hammer syndrome

O2.2 Relate the pathophysiology of the above entities to clinical exam findings.

O2.3 Relate the innervation of the hand to the physical examination findings.

O2.4 State the indications and technique for radiographic evaluation of the above entities.

O3.1 Relate the healing potential of scaphoid fractures to the type and location of the fracture.

O3.2 List the indications for surgery for each of the acute and chronic injuries listed above.

O3.3 Construct a treatment plan for fractures and instabilities not requiring surgery.

O3.4 Explain the appropriate use of steroid injections in the treatment of wrist pain.

O3.5 Construct a treatment plan for overuse injuries of the wrist.

O3.6 Explain appropriate use of wrist orthoses for both prevention and treatment of wrist injuries.

<u>Hand and Finger Injuries</u>

Goals:

Completion of this section will enable the resident to:

G1. Systematically evaluate the acutely injured hand.

G2. Systematically evaluate patients with subacute or chronic hand pain

G3. Develop an appropriate management plan for patients with both acute and chronic hand injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the components and function of the finger flexor and extensor mechanisms.

O1.2 Describe the pathophysiology and potential complications of:

Soft Tissue

- FDP avulsion
- mallet finger
- central extensor tendon slip avulsion
- dorsal PIP dislocation
- volar plate disruption
- volar PIP dislocation
- collateral ligament tear
- MCP simple dislocation
- MCP complex dislocation
- ulnar collateral ligament tear of the thumb
- subungual hematomas
- nail lacerations
- tendon lacerations

Fractures

- phalangeal fractures
- metacarpal fractures
- Bennet's fracture-dislocation

Neurovascular

- Neurovascular
  - nerve lacerations
  - vascular disruption

O1.3 Relate the above entities to clinical exam findings.

O1.4 Explain the indications for imaging studies and expected findings for the above entities.

O2.1 Describe the pathophysiology and potential complications of:

Infection

- paronychia
- cellulitis
- septic flexor tenosynovitis
- clenched fist septic joint
- trigger finger
- arthritis

O3.1 Construct an appropriate management plan for each of the entities listed above.

<u>Back Injuries</u>

Goals:

Upon completion of this fellowship the resident will be able to:

G1. Evaluate and properly diagnose adults with acute or chronic back pain.

G2. Evaluate and properly diagnose children with acute or chronic back pain.

G3. Construct an appropriate treatment and management plan for patients with back injuries.

G4. Advise patients with back injuries on restrictions and return to play criteria.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the epidemiology and pathophysiology underlying:

spinal column fractures	spinal stenosis
lumbosacral strain injuries	facet syndrome
herniated nucleus pulposis	mechanical low back pain
lateral recess stenosis	spondyloarthropathies

O1.2 Identify medical etiologies of back pain and sciatica.

O1.3 Demonstrate a systematic physical examination of the back, including a detailed neurologic evaluation, and explain what each test is evaluating.

O1.4 State the indications for imaging and electrical studies in the evaluation of back pain including:

plain radiographs	CT scans
technetium bone scans	MRI
SPECT scans	EMG/NCS

O1.5 Describe the appropriate use of laboratory studies in evaluating back pain.

O2.1 Describe the epidemiology and pathophysiology of:

painful scoliosis	discitis
Scheuremann's disease	vertebral osteomyelitis
atypical Scheuermann's disease	vertebral tuberculosis
spondylolysis and spondylolisthesis	juvenile rheumatoid arthritis
herniated nucleus pulposus	ankylosing spondylitis
slipped vertebral apophysis	spinal tumors

O2.2 State the appropriate use of imaging studies in evaluating pediatric back pain.

O2.3 Explain the rational use of laboratory studies in evaluating pediatric back pain.

O3.1 State the natural history of each of the above entities.

O3.2 Describe the appropriate use of physical therapy modalities and exercises in the treatment of low back pain.

O3.3 Explain the indications, type, and duration of bracing in the treatment of back pain.

O4.1 Define the criteria for returning an individual with a back injury to sports activity.

Hip, Pelvis, and Thigh Injuries

Goals:

Completion of the fellowship will enable the resident to:

G1. Evaluate and diagnose acute injuries of the hip, pelvis, and thigh.

G2. Evaluate and diagnose chronic pain in the hip, pelvis, or thigh.

G3. Construct a management plan for each of these injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the anatomy and pathophysiology underlying:

- Acute fractures of the:
  - pelvic girdle
  - femoral neck
  - coccyx
  - ASIS (avulsion)
  - AIIS (avulsion)
  - ischial tuberosity (avulsion)
- Acute slipped femoral capital epiphysis
- Soft tissue trauma
  - quadriceps contusion/hematoma
  - adductor strain
  - hamstring strain
  - rectus femoris strain
  - iliac crest apophysitis
  - hip pointers
  - inguinal hernia

O1.2 Demonstrate the physical exam as it pertains to the above entities and describe the expected findings.

O1.3 Select the appropriate imaging studies in evaluating acute injuries.

O2.1 Describe the pertinent anatomy and pathophysiology underlying:

- Stress fractures
  - pubic ramus
  - femoral neck
  - femur
- Bursitis
  - ischial tuberosity
- Sacroiliac dysfunction
- Ankylosing spondylitis
- Piriformis syndrome
- Osteitis Pubis
- Myositis ossificans
- Hip flexor tendonitis

- greater trochanter
- iliopsoas
- Pediatric population
  - slipped femoral capital epiphysis
  - Legg-Calve'-Perthes disease
  - toxic synovitis
  - septic hip
- Snapping Hip Syndrome
- Leg length discrepancies
- Degenerative joint disease

O2.2 Demonstrate the physical exam in evaluating the above listed entities.

O2.3 Explain the appropriate use of imaging studies in evaluating chronic hip, pelvis, and thigh pain.

O2.4 Describe the appropriate use of laboratory studies in evaluating hip pain.

O3.1 Relate the specific pelvis, hip, and thigh injuries to expected healing time.

O3.2 List the injuries requiring surgical intervention.

O3.3 Explain the rational behind the use of physical therapy modalities, stretching and strengthening exercises in the treatment of these injuries.

O3.4 Describe the appropriate use of orthoses in the management of these injuries.

O3.5 Explain the indications and use of various medications, including steroid injections, in the management of these injuries.

O3.6 List the return to play criteria for athletes recovering from hip, pelvis and thigh injuries.

Knee Injuries

Goals:

Completion of the fellowship will enable the resident to:

G1. Systematically evaluate and diagnose acute injuries of the knee.

G2. Evaluate and diagnose patients with chronic knee pain.

G3. Construct a treatment and management plan for acute and chronic knee injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the mechanism of injury, pathology and clinical manifestations of:

Anterior cruciate ligament tears
Posterior cruciate ligament tears
Medial collateral ligament tears
Lateral collateral ligament tears
Meniscal tears
Patellar dislocation
Patellar fractures
Patellar tendon rupture
Quadriceps tendon rupture
Knee dislocation
Epiphyseal fracture

O1.2 Demonstrate the physical examination as it pertains to acute knee injuries and describe what each test is evaluating.

O1.3 Explain the appropriate radiographic tests, views, and expected findings in the evaluation of the acutely injured knee.

O2.1 Describe the anatomy and pathophysiology underlying:

Retropatellar pain syndrome
Bi-partite patella
Patellar stress fracture
Pre-patellar bursitis
Sinding-Larsen-Johanssen syndrome
Osgood-Schlatter syndrome
Patellar tendinidtis
Quadriceps tendinitis
Iliotibial band friction syndrome
Popliteus tendinitis
Subluxing meniscus
Pes Anserine bursitis
Synovial Plica
Popliteal cyst
Semimembranosis tendinitis
Degenerative joint disease

O2.2 Demonstrate the physical examination as it pertains to the above entities and describe the expected findings.

O2.3 Explain the indications, views, and expected findings of various imaging studies in evaluating chronic knee pain.

O3.1 Relate each knee injury to its healing potential and the approximate time course.

O3.2 List the indications for surgical intervention for each injury and specify the appropriate timeframe for referral.

O3.3 Match the various knee braces with specific knee injuries.

O3.4 Explain the rational behind the use of physical therapy modalities, stretching, and strengthening in the rehabilitation of patients with knee injuries.

O3.5 State the return to play criteria for athletes recovering from a knee injury or surgery.

<u>Lower Leg Injuries</u>

Goals:

Completion of this section will enable the resident to:

G1. Evaluate and treat acute injuries to the lower leg.

G2. Evaluate and treat chronic lower leg pain.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1. Describe the etiology, signs, symptoms and treatment of:

muscle cramps	heat cramps
muscle strain/tear	contusion
fracture	acute compartment syndrome

O2.1. Describe the etiology, symptoms and sign of overuse injuries to the lower leg including:

shin splints
medial tibial stress syndrome
stress fractures

O2.3. Explain the etiology, evaluation and treatment of pain from neurovascular etiologies including:

chronic compartment syndrome	popliteal artery entrapment
adduct or hiatus syndrome	effort thrombosis
radiculopathy	peroneal nerve entrapment
saphenous nerve entrapment	

<u>Ankle Injuries</u>

Goals:

Completion of the fellowship will enable the resident to:

G1. Evaluate and diagnose acute injuries of the ankle.

G2. Evaluate and determine the etiology of chronic ankle pain.

G3. Construct a management plan for patients with either acute ankle injuries or chronic ankle pain.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the mechanism of injury and pathophysiology underlying:

Syndesmosis sprains	Achilles tendon rupture
Grades I, II, and III ankle sprains	Os trigonum fracture
Tibial tendon ruptures	Posterior process of the talus fracture
Anterior capsule tears	Deltoid ligament sprain
Osteochondral (talar dome) fractures	Posterior tibial tendon rupture
Subtalar joint sprains	Fibular fractures
Peroneal tendon subluxation	Tibial fractures
Bifurcate ligament sprain	Epiphyseal fractures

O1.2 Demonstrate the physical examination as it relates to acute ankle injuries and describe the anticipated findings.

O1.3 Explain the indications, views, and interpretation of imaging studies, including stress views.

O2.1 Describe the pathophysiology underlying chronic ankle pain from:

Anterolateral impingement	Talar knock syndrome
Anterior tibial tendinitis	Sustenaculum tali stress fracture
Extensor digitorum longus tendinitis	FHL,FDL tenosynovitis
Peroneal nerve entrapment	Posterior tibialis tendinitis
Sinus Tarsi Syndrome	Tarsal coalition
Subtalar joint instability	Os-trigonum syndrome
Peroneal tendinitis	Osteochondritis dessicans
Subluxing peroneus tendon	Synovitis
Sural nerve entrapment	Degenerative joint disease

O2.2 Demonstrate the physical examination of the ankle as it pertains to chronic ankle pain.

O2.3 Describe the indications, views, and interpretation of imaging studies in the evaluation of chronic ankle pain including:

Plain radiographs and stress views	CT scans
Technetium bone scans	MRI

O3.1 Explain the indications, risks, and benefits of immobilization of the injured ankle.

O3.2 Describe the role of stretching, strengthening, proprioceptive training, and modalities in treating ankle injuries.

O3.3 Relate the use of various foot and ankle orthoses to specific injuries.

O3.4 State the approximate recovery time for each ankle injury.

O3.5 List the indications for surgical treatment of ankle injuries.

O3.6 Identify return to play criteria for patients recovering form ankle injuries.

Foot Injuries

Goals:

Completion of the fellowship will enable the resident to:

G1. Evaluate and diagnose acute injuries of the foot.

G2. Evaluate and diagnose patients with chronic foot pain.

G3. Construct a management plan for patients with acute or chronic foot injuries.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Describe the anatomy and pathophysiology underlying:

- Fractures
  - metatarsal
  - phalangeal
  - Lis-franc joint
  - calcaneus
  - tarsal bones
- Bifurcate ligament sprain
- Plantar fascia tear
- Heel contusion
- Dislocations/subluxations
  - phalangeal
  - cuboid
- Subungual hematoma
- Turf toe

O1.2 Demonstrate the physical examination as it pertains to acute foot injuries.

O1.3 Explain the indications, views, and interpretation of imaging studies in evaluating acute foot injuries.

O2.1 Describe the anatomy and pathophysiology underlying:

- Turf toe
- Hallux limitus/rigidus
- Metatarsalgia
- Metatarsal stress fracture
- Proximal 5th MT diaphyseal stress fractures
- Sesamoiditis
- MTP synovitis
- Morton's neuroma
- Lis-franc capsulitis
- Cuboid syndrome
- Tarsal navicular stress fracture
- Symptomatic os naviculare
- Tarsal coalition
- Plantar fasciitis
- Achilles tendinitis
- Retrocalcaneal bursitis
- Tarsal tunnel syndrome
- Calcaneal stress fracture
- Iselin's disease
- Sever's disease

Haglund's Deformity	Accessory navicular
Os Trigonum	Freiberg's infarction

O2.2 Demonstrate the physical examination as it pertains to chronic foot pain.

O2.3 Explain the indications, view, and interpretation of imaging studies in the evaluation of chronic foot pain.

O3.1 Relate the use of foot orthoses to the treatment of individual injuries.

O3.2 Describe normal and abnormal foot biomechanics and relate them to the genesis of foot pain.

O3.3 List the indications for surgical treatment for each entity.

O3.4 Explain the rational for physical therapy modalities, stretching, and strengthening in the management of foot injuries.

O3.5 Describe the indications for steroid injections in the management of foot pain.

O3.6 Recite the return to play criteria after a foot injury.

Clinical Research

Goals:

Completion of the fellowship will enable the resident to:

G1. Develop familiarity with well-known statistical software and interpret computer output.

G2. Evaluate study protocols and articles submitted for publication and actively participate in clinical research.

G3. Critically evaluate the clinical literature, understanding potential errors and fallacies, and apply confidentially the results of medical studies to patient care.

G4. Develop sound judgment about data applicable to clinical care.

Objectives:

The resident will attain/achieve the above goals by meeting the following objectives:

O1.1 Conduct a comprehensive literature review of a proposed area of study.

O1.2 Design a protocol appropriate to their research question including a power analysis.

O1.3 Write a protocol in USU format and submit to the IRB.

O1.4 Gather clinical data, and summarize the data and interpret.

O.1.5 Prepare project for presentation and/or publication.

SECTION IX – SPECIAL POLICIES

A. **Due Process**. The Uniformed Services University of the Health Sciences/National Capital Consortium Institutional Policy on Probation and Termination of Graduate Medical Education Trainees will be followed. See appendices A and B.

B. **Impaired Providers**. The Uniformed Services University of the Health Sciences/National Capital Consortium Institutional Policy on Impaired Physicians and Substance Abuse will be followed. See Appendix I, NCC Administrative Handbook. Additionally, residents are required to participate in education regarding physician impairment, including substance abuse and sleep deprivation.

C. **Duty Hours Standards**.
    a. The USU/NCC Institutional Policy on Duty Hours Standards will be followed. See A and I. These policies comply with all requirements of the ACGME policy on Resident Duty Hours.
    b. Hours will be logged by fellows on a weekly basis onto eValue and reviewed by the Program Director at least monthly.

SECTION X - APPOINTMENT PROCESS

1. Selection procedure: Applicants must be active duty physicians and be board certified in Family Practice, Internal Medicine, Pediatrics, Physical Medicine & Rehabilitation, or Emergency Medicine to be considered. Applicants must be approved for sports medicine fellowship training through their parent service at the annual GME Selection Board meeting, and sponsored by the parent service.
2. Application process: Applicants must apply through their respective service GME office. They should then contact both their respective service's Sports Medicine consultant AND the Fellowship Program Director to set up interviews either in person or telephonically.
3. Fellows will then be considered on a competitive basis to fill the four fellowship positions. Fellows will be selected at the annual Military Joint GME Selection Board in November of each year, with results released in December after approval from higher authorities. The fellowship selection committee is comprised of board members from three branches (Army, Navy, Air Force) of the military.

SECTION XI - ADMINISTRATION AND DIRECTION OF PROGRAM

A. Name of Program Director: Kevin deWeber, LTC, MC, USA

B. Name of Associate Program Director: Francis G. O'Connor, COL, MC, USA

C. Are Program Directors Board Certified? Yes No

D. Do Program Directors Hold a Certificate of Added Qualification in Sports Medicine?
Yes No

E. Is Program Director full-time at USU? Yes No

F. Hours per week of the program directors time that is devoted to the fellowship:

1. Minimum 8 hrs/week
2. Maximum 20 hrs/week
3. Average 16 hrs/week

G. Fellowship Program Review Committee:

The Sports Medicine Fellowship Annual Program Review meeting will be for the purpose of conducting a comprehensive review of the Program content. It will be attended by the Program Directors, key faculty, and the senior fellow, each February.

H. Fellowship Training Records: Available upon request.

I. Accreditation Responsibilities;

The ACGME has developed requirements for an approved Sports Medicine Fellowship training program. The program has been accredited as of September 1997. The program received a 5-year accreditation in May 2005 and will be revisited by the Residency Review Committee (RRC) in 2010.

J. Leave/Absence:

Each fellow is permitted 15 days of leave. Successful completion of the fellowship requires no more than 30 days of absence from required rotations and approved electives.

SECTION XII – PROGRAM REVIEW COMMITTEE MEMBERS

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SECTION XIII: FELLOWSHIP HISTORY AND ACCOMPLISHMENTS

Fellowship History:

The NCC Primary Care Sports Medicine Fellowship was founded in 1994. COL Jay Fogarty, then Chair of the USU Department Family Medicine, recruited MAJ Wade Lillegard to come to the University to develop a Primary Care Sports Medicine Fellowship. Dr. Lillegard integrated the University with the Primary Care Sports Medicine Fellowship Program at Arlington Hospital, VA, under the direction of Dr. Robert Nirschl. This program represented the first military Primary Care Sports Medicine Fellowship.

Dr. Eron Manusov was Program Director of the fellowship from 1995 to 1997, after the departure of Dr. Lillegard to the Duluth Clinic. Dr. Francis O'Connor was subsequently selected as the fellowship director, and saw the fellowship through its initial accreditation in 1997, and reaccreditation in May 2002. Dr. Fred H. Brennan, Jr. took over as Program Director in September 2004. Dr Brennan oversaw the reaccreditation process in the fall of 2004, receiving a 5-year accreditation in May 2005. The program is currently accredited by the ACGME until the next projected site visit in May 2010. After Dr. Brennan departed to the University of New Hampshire in August 2007, LTC Kevin deWeber became the fellowship's fifth Program Director.

The fellowship has seen considerable growth over the last several years, incorporating an increasing number of sites and tracts, as well an aggressive research/faculty development program. The NCC Tri-Service Primary Care Sports Medicine Fellowship aspires to be one of the premiere sports medicine fellowships in the United States.

Fellowship Directors:

1993-1995	LTC Wade Lillegard, MD, USA
1995-1997	LtCol Eron Manusov, MD, USAF
1997-2004	LTC Francis O'Connor, MD, USA
2004-2007	LTC Fred H. Brennan, Jr., DO, USA
2007-present	LTC Kevin deWeber, MD, USA

Fellowship Graduates

1993 – 1994
John J. Johnson, LTC, MC, USA

1994 - 1995
Janus D. Butcher, MAJ, MC, USA
Christopher W. Zukowski, CDR, MC, USN

1995 - 1996
Thomas M. Howard, LTC, MC, USA

1996 - 1997
Ralph Hinton, LTC, MC, USA
Koji Nishimura, LTC, MC, USA

1997 - 1998
Eric Chumbley, Cpt, MC, USAF
Michael Johnson, MAJ, MC, USA

1998 – 1999
Bruce Adams, CDR, MC, USN
Andrew Torrance, LTC, MC, USA
John E. Glorioso, MAJ, MC, USA

1999 – 2000
Beverly Land, MAJ, MC, USA
Mark Williams, MAJ, MC, USA
Daniel Henley, LtCol, MC, USAF
John Metz, Maj, MC, USAF

2000 – 2001
Scott Riise, Maj, MC, USAF
Kevin DeWeber, MAJ, MC, USA
Jeff Leggit, MAJ, MC, USA

2001 – 2002
Anthony Beutler, Cpt, MC, USAF
Dave Brown, MAJ, MC, USA
Charles Webb, MAJ, MC, USA
Karlwin Matthews, LCDR, MC, USN

2002 – 2003
Pete Seidenberg, Maj, MC, USAF
Nick Piantinada, MAJ, MC, USA
Rochelle Nolte, LCDR, MC, USPHS
Greg Dahmann, CPT, MC, USA

2003 - 2004
Shawn Kane, MAJ, MC, USA
Chris Prior, MAJ, MC, USA

2004 - 2005
Jeff Levy, MAJ, MC, USA
Joel Shaw, MAJ, MC, USA
Sean Mullendore, Maj, MC, USAF
Leslie Rassner, LCDR, MC, USN

2005 - 2006
Rodney Gonzalez, MAJ, MC, USA
William Scott Deitche, MAJ, MC, USA
Allyson Howe, Maj, MC, USAF
Scott Playford, LCDR, MC, USN

2006 - 2007
Thad Barkdull, MAJ, MC, USA
Christopher Jarvis, MAJ, MC, USA
Christopher Meyering, MAJ, MC, USA
Christopher Nasin, LCDR, MC, USN

2007-2008
Duane Hennion, MAJ, MC, USA
Howie McGowan, Maj, MC, USAF
Sean Mulvaney, MAJ(P), MC, USA
Chris Pappas, LTC, MC, USA

Affiliated Program Attendees:

Beth Ann Lloyd, MD
Family Medicine (Howard) 1995-1996

MAJ Paul Pasquina, MD, USA
Physical Medicine (WRAMC) 1998-1999

Terry Adirim, MD
Pediatrics (Wash Children's) 2001-2002

Textbooks Published by graduates and directors:

Seidenberg P, Beutler A (Eds.) The Sports Medicine Resource Manual. Philadelphia: Saunders, 2008.

Birrer RB, **O'Connor FG. (Eds).** Sports Medicine for the Primary Care Physician, 3rd Ed. Washington, D.C.: CRC Press, 2004.

O'Connor FG, Sallis RE, Wilder RP, St. Pierre P (Eds). Sports medicine Examination and Board Review. New York: McGraw-Hill, 2005.

O'Connor FG, **Sallis** RE, Wilder RP, St. Pierre P (Eds). Sports Medicine: Just the Facts. New York: McGraw-Hill, 2005.

O'Connor FG, Wilder RP (Eds). Textbook of Running Medicine. New York: McGraw-Hill, 2001.

Howard TM, Butcher JD. Blackwell's Primary Care Essentials: Sports Medicine. Malden: Blackwell Science, 2001.

Lillegard WA, Butcher JD, Rucker KS (Eds). Handbook of Sports Medicine: A Symptomo-Oriented Approach, 2nd Ed. Boston: Butterworth Heinmann, 1999.

Fellow Research/Grants:

Butcher J: Comparison of injuries in classic and skating nordic skiing techniques. USU Intramural.

Howard TM, Brannen SJ, O'Connor FG. Management Practices and Return to Play Criteria for Athletes with Infectious Mononucleosis. USU Intramural.

Nishimura KD. The butterfly kick in swimming: can the strouhal number be measured in humans?

Hinton RM, Brannen SJ. A Profile of Military Sick Call and its Relationship with the Army APFT. USU Intramural $1,000.00.

Johnson MW, Brannen SJ, O'Connor FG. Profiling abilities of U.S. Army Family Physicians. USU Grant #RO 8161, $2,750.00.

Chumbley EM, Brannen SJ, O'Connor FG. Sports medicine training in military family medicine residencies. USU Grant #RO 8163, $2,630.00.

Glorioso JE, Wilkens J, Adams W, O'Connor FG, Brannen SJ, Robinson C. Use of Focal Compression in the Treatment of Ankle Sprains. USU Intramural. $1,000.00.

Torrance AW, Brannen SJ, Robinson C, O'Connor FG. Efficacy of a running shoe clinic in preventing/decreasing running injuries in an active duty population. USU Grant # RO8169-01, $2,000.00.

Adams WB, Gardner JW, Kark JA, Robinson C. Epidemiology of exercise-related deaths in enlisted military recruit training 1977-1996. USU Intramural Grant #RO8170-01 $3,000.00.

Land BC, Robinson C, Chapin M, O'Connor FG. Comparison of the Incidence of Stress Fractures in Military College-Age Women using Contraceptive Agents. USU Grant #R08186-01, $1,000.

Riise SA, Robinson C, Chapin M. Diagnostic Category Patterns in the Outpatient Practice of Resident Graduates from Military Family Practice Residencies.

Leggit JL, Robinson C, Chapin M. GERD in the College Age Athlete.

deWeber KD, Robinson C, Chapin M. Visual Function in Athletes after Refractive Surgery.

Webb C. The Use of the Procap to prevent recurrent concussion in football. USU Grant CO81AI-01, $1,500.

Brown D. Vocal Cord Dysfunction and Hyperventilation: Do they Coexist? USU Grant COA1AJ-01, $1,500.

Beutler AI. Patterns of ACL Injury in the NCAA: Sports and Implications for Prevention. USU intramural Grant CO81AH-01, $700.

Marshall SP, Demaio ME**, Beutler AI**, Boden BP, Yu B, and Garrett WE Jr. "Movement Patterns and ACL Injury: A Prospective, Pilot Study ACL Risk Factors in U.S. Naval Academy Midshipmen. Funded by $250,000 AOSSM/NIH ACL Research Award, Dec 2002.

Matthews KJ. Subacromial Injection of Corticosteroids vs. Ketorolac for Treatment of Subacromial Impingement Syndrome.

Seidenberg P. Confidence among Primary Care Providers in Sports Medicine Skills.

Nolte R. Prevalence of ACL Injuries among Women Football Players in the WNFL.

Piantinada N. Survey Instrument for the Management of Exertional Lower Leg Pain in Athletes.

Dammann G. Analysis of Catastrophic Injuries in Football Players.

Pappas C, O'Connor F. Functional Movement Screening in Marine Corps Officer Candidate School Training: An Analysis of Core Stability and Mobility.

Hennion D, O'Connor F. Heat Casualties in Marine Corps Officer Candidate School Training: An Analysis of Risk Factors and Biomarkers.

Mulvaney S, O'Connor F. EnLyten Electrolyte Strips in the Treatment of Exercise Induced Muscle Cramps.

McGowan H, deWeber K. Team Physician Landscape at National Collegiate Athletic Association Universities.

Fellow Publications:

Adams WB. Hematology in the Runner**.** In O'Connor FG, Wilder RP: The Textbook of Running Medicine. New York, NY: McGraw Hill, 2001.

Beutler AI, et al. Electromyographic analysis of single-leg, closed chain exercises: implications for rehabilitation after ACL reconstruction. Journal of Athletic Training 2002; 37(1).

Jonas, WP and **Beutler AI**. Complimentary and Alternative Medicine for the Sports Medicine Practitioner, textbook chapter in Bierrer and O'Connor's Primary Care Sports Medicine, publication pending.

O'Connor FG**, Beutler AI**, Wilder RP, Nirschl RP. Overuse Injuries: Current Strategies for Diagnosis and Management, The Physician and Sports Medicine: publication pending.

Beutler AI, Boden BP. Patterns of ACL Injuries in NCAA Athletes and Military Implications, Manuscript in progress.

Beutler AI, Marshall SP. Sports Epidemiology, Textbook Chapter in Orthopedic Knowledge Update: Sports Medicine, 3rd edition, eds: DeMaio, M and Garrick, J. Manuscript in progress

Beutler AI, Wilckens, J. The Team Physician, textbook chapter in Sports Medicine: Just the Facts, eds: O'Connor F, Sallis R, St Pierre P, Wilder R. Manuscript in progress.

Beutler AI, Jonas W. Complimentary and Alternative Medicine, textbook chapter in Sports Medicine: Just the Facts, eds: O'Connor F, Sallis R, St Pierre P, Wilder R. Manuscript in progress.

Butcher J, **Brown D**. Gastrointestinal Problems in Runners. In O'Connor FG, Wilder RP: The Textbook of Running Medicine. New York, NY: McGraw Hill, 2001.

Butcher J. Gastrointestinal Problems in Athletes, in Symptom Oriented Handbook of Sports Medicine 2nd ed.. Lillegard, Butcher, and Rucker (ed.) Andover. 1999.

Butcher J, Brannen S. Comparison of Injuries in classic and skating nordic ski techniques. Clin J Sports Med, 8:88-91, 1998.

Butcher J. A murmur in a asymptomatic athlete. ECG quiz. Phys Sports Med, 25(8):135-137, 1997.

Butcher J, Gambrell R. Environmental Injuries, in Medical Problems in Athletes. Blackwell International Publications. Fields and Fricker (eds) 1997.

Butcher J, Zukowski C, Brannen S, Fiesler K, O'Conner F, Baer S, Lillegard W. Patient Profile, Referral Sources, and Consultant Utilization in a Primary Care Sports Medicine Clinic. J Fam Pract. 43(6), 556-560, 1996.

Butcher J, Salzman K, Lillegard W. Lower Extremity Bursitis. American Family Physician, 53(7): 2317-2326, 1996.

Butcher J. Injuries in Cross Country Skiers. Sports Medicine in Primary Care. February, 1996.

Butcher J, Salzman K, Morgan R. The need for improved readiness training in the AMEDD. AMEDD Journal. May, 1996.

Butcher JD, Siekanowicz A, Pettrone F. Pectoralis. Major Injuries. Phys Sports Med, 24:37-42, 1996.

Butcher J, Lillegard W. Ears, Eyes, Nose, and throat problems. Medical Problems in Athletes. Blackwell International Publications. Fields and Fricker (eds) 1997.

Butcher J. Knee Injuries. The Little Black Book of Sports Medicine. Blackwell Scientific, In Press.

Butcher J. Hip and Thigh Injuries. The Little Black Book of Sports Medicine. Blackwell Scientific., In Press.

Butcher J. Expert on Call: Runner's Diarrhea. Hosp Med 30:70; 1994.

Butcher J. Gastrointestinal Problems in Athletes, in Symptom Oriented Handbook of Sports Medicine. Lillegard (ed.) Andover. 1993.

Butcher J. The Outdoor Athlete, in Sports Medicine for the Primary Care Physician. Birrer (ed.) F.A. Davis Co. 1994.

Butcher J. Runners Diarrhea and other Gastrointestinal Problems in Athletes. American Family Physician, 48:623-627, 1993.

Butcher J, Krober M. Cryptococcal Meningitis in a Child with AIDS. Ped AIDS/HIV Inf June 1991.

Pollock ML, Gaesser GA, **Butcher JD**, Despres JP, Dishman RK, Franklin BA, Garber, CE. The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness and flexibility in healthy adults. Med Sci Sports Exerc., 30(6):975-991, 1998.

Epperly T, **Butcher J**. Foot Pain and Injury, in Textbook of Family Medicine, J Saultz (ed) at press.

Yetter J, **Butcher J**, Uyemura M. Neurologic Injuries in Athletes, in Symptom Oriented Handbook of Sports Medicine 2nd ed.. Lillegard, Butcher, and Rucker (ed). Andover. 1999.

Meredith R**, Butcher J**. On field management of suspected fractures. Phys Sports Med, 25(10):221-225, 1997.

Unwin B**, Butcher J**. Disaster Medicine. AFP Home Study Course. Pending publication.

Salzman K, Lillegard W, **Butcher** J. Upper Extremity Bursitis. American Family Physician, Pending publication.

Lillegard W, Zukowski C**, Butcher J**. Upper Extremity Injuries. Arch Fam Med, 5:159-168, 1996.

Lillegard W, **Butcher J**. Dermatologic Problems in Athletes, in Medical Problems in Athletes. Blackwell International Publications. Fields and Fricker (eds) 1997.

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APPENDIX A
NCC Gradual Medical Education Training Agreement
Available online at:
http://www.USU.mil/gme/Jun%202006%20Training%20Agreement.pdf

APPENDIX B
NCC Administrative Handbook
Available online at:
http://www.USU.mil/gme/NCCAdminHandbook.pdf

APPENDICES C and D
Curricula Vitae – Fellowship Director and Associate Fellowship Director
(Available upon request)

APPENDIX E
Memoranda of Understanding
(Available upon request)

APPENDIX F
Program Letters of Agreement
(Available upon request)

APPENDIX G
ACGME Application
(Available upon request)

APPENDIX H
Didactic, Research and Event Curriculum
(Available upon request)

APPENDIX I
Evaluation Forms
(Available upon request)