IMPACT

Orthopaedic Research and Education Foundation

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L. Andrew Koman, M.D.

Research Can Directly Benefit Orthopaedic Practice

OREF's Annual Campaign supports current research projects that can directly impact orthopaedists' daily practice.

"Most basic science research can be extrapolated to design operations, or to defend operations," said **L. Andrew Koman, M.D.** "It's difficult to obtain CPT® codes, but using resultant data from research that began with an OREF grant, we were able to do just that," he said.

Current Procedural Terminology (CPT®) codes enable doctors, including orthopaedists, to report medical services and procedures. According to the American Medical Association, the uniform language provides accurate information to agencies concerned with insurance claims and allows evaluation of current diagnostic and operative procedures.

Since 1962, OREF has awarded nine research grants to the Department of Orthopaedic Surgery at Wake Forest University School of Medicine. Three recent grants, in which Dr. Koman was an investigator, have aided in approving CPT® codes for surgical procedures and methods of simple treatment and diagnosis.

With funding from an OREF Basic Science Grant, Dr. Koman investigated the effects of sympathectomy — removing the nerves from the arteries to decrease the impulses that make them constrict — on blood flow in rabbit ears. This research enabled him to verify that the human digit behaves much like the rabbit ear. Because of these results, Dr. Koman was able to clinically test sympathectomies, confirming that they're effective on human patients.

Sympathectomy can be used to manage patients who have significant Raynaud's Disease — extreme cold sensitivity in the fingers — if those patients have ulcers or sores or do not respond to medication. *(continued on page 14)*

Study to Focus on Periprosthetic Infection

Smart Implants Could Eradicate Joint Replacement Infections

By Amy Kile, Public Relations Specialist

Javad Parvizi, M.D.

Joint replacements enable patients to return to activities they once enjoyed. But for some, infections require treatment that can hinder recovery. To fight infection without causing further stress to the patient, orthopaedic researchers are investigating new treatment methods that directly employ artificial joints to eradicate infections.

"Periprosthetic infection is a very difficult problem to deal with," said **Javad Parvizi, M.D.**, Assistant Professor in the Orthopaedic Department of Thomas Jefferson University. "It is associated with immense psychological cost for the patient and high financial burden for the health care industry."

Each year in the United States, according to Dr. Parvizi, about 600,000 patients undergo joint replacement surgery. Although many measures are taken to minimize the risk of infection, about 1% to 3% of joint replacement patients become infected.

Scientists from a multitude of disciplines, including bioengineering, chemistry, and life sciences, will help Dr. Parvizi to research new means of preventing and treating periprosthetic infection. *(continued on page 10)*

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"There are hundreds of thousands of people who have Raynaud's Phenomenon or Disease, which can be very debilitating," said Dr. Koman.

From the information acquired during the rabbit study and subsequent clinical trials, Dr. Koman's work provided support for CPT® codes for radial and ulnar artery sympathectomy, superficial arch sympathectomy, deep arch sympathectomy, and digital sympathectomy by members of the American Medical Association coding committee. All codes were approved.

"Some doctors might say that this is esoteric research, why should blood flow in a rabbit's ear matter to me. But this is why. It may affect your practice, it may ultimately help you," said Dr. Koman.

"Some doctors might say that this is esoteric research, why should blood flow in a rabbit's ear matter to me. But this is why. It may affect your practice, it may ultimately help you."

Funding from a Prospective Clinical Outcome Grant, also awarded by OREF, enabled Dr. Koman to develop reproducible questionnaires that orthopaedists can employ to document successes and failures of upper extremity treatments.

"The questionnaires tell what is happening with the patient. They help the doctor to judge whether the surgery, or non-operative intervention, or medication, or any other method of treatment was helpful or not," said Dr. Koman.

That study also confirmed the value of surgical procedures for cerebral palsy patients and helped to justify CPT® codes for the use of botulinum toxin. In the future, botulinum toxin could be used to temporarily weaken muscle tissue after tendon repair, thereby decreasing pain and facilitating rehabilitation with less bracing and casting.

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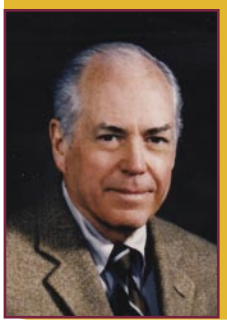

"I received an OREF grant that enabled the initiation of my research on tetracycline labeling, a tool that was important in beginning to understand metabolic bone diseases, such as osteoporosis, that the orthopaedic surgeon sees every day. Millions of people use bisphosphates to prevent osteoporosis, and the basic studies that led to this form of treatment hinged on the ability to measure bone formation through tetracycline labeling." — **William H. Harris, M.D.**

"Orthopaedic surgeons should support OREF because it gives the orthopaedic specialty information that helps them to better understand problems with their patients," said Dr. Koman. "Right now the value of everything an orthopaedic surgeon does is being questioned, and OREF support helps us to justify what orthopaedic surgeons do daily. The basic information that comes from OREF research helps to ensure that our treatment methods are beneficial so that the Health Care Financing Administration, Congress, and insurance companies will continue to pay us. OREF supports the practice of orthopaedic surgery; the very core of the orthopaedist's existence."

Contributions to OREF's Annual Campaign support current research such as that conducted at Wake Forest University School of Medicine. To contribute to OREF's Annual Campaign, please fill out the donor form on the opposite page or for more information please contact **Ed Hoover** at hoover@oref.org or (847) 384-4354, or **Maria Aguirre** at aguirre@oref.org or (847) 384-4357. ■

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"In 1992, I received an OREF grant to study the long-term natural history follow-up of patients with untreated idiopathic scoliosis. Most children and their parents are alarmed when the diagnosis of late onset —adolescent idiopathic— scoliosis is suggested based on sports or annual physicals, or during a school screening. This study gives orthopaedic surgeons a solid foundation from which to advise their patients who've been diagnosed with this disease." — **Stuart L. Weinstein, M.D.**