



ORTHOPÆDICS

A complimentary publication from OAD Orthopaedics
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Review



Hand & Upper Extremity Focus

**Advanced Treatments for
Elbow and Hand Disorders**

From left: Hand and upper extremity specialists
Richard K. Thomas, MD, and Thomas W. Kiesler, MD

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Defining Excellence

Excellence is defined as a distinction that represents exceptional standards and superior quality at every level. Since 1981, OAD Orthopaedics' physicians have painstakingly created a premier subspecialty orthopaedic and musculoskeletal practice with distinctive Centers of Excellence. This sixth issue of *OAD Orthopaedics Review* spotlights OAD's Hand and Upper Extremity Center of Excellence with articles focused on this subspecialty. Issue six contains an interview with OAD's newest hand, upper extremity, and microvascular surgical specialist, Richard Makowiec, MD. A well-established orthopaedic specialist, Dr. Makowiec joined us in March 2008, bringing to OAD his vast experience and expertise in all conditions and injuries related to the hand, wrist, and elbow.

OAD's Hand and Upper Extremity Center of Excellence has a formidable history and now is the Chicago area's largest group of orthopaedic hand specialists. Our five fellowship-trained, board-certified physicians — Richard Thomas, MD, Mary Ling, MD, Thomas Kiesler, MD, Anup Bendre, MD, and Dr. Makowiec — provide the most extensive and advanced treatment for hand, wrist, and elbow conditions and injuries.

This issue is the first in a series of "theme issues" that exhibit OAD's breadth of specialization. Future issues will showcase other OAD Centers of Excellence, including Foot and Ankle, Spine, and Sports Medicine. Our special focus issues also demonstrate OAD's contributions to two nationally recognized hospitals with which we are proudly affiliated: Central DuPage and Edward Hospitals.

Excellence can foster growth. Our world-class orthopaedic care, patient service, and reputation are OAD hallmarks that elicit opportunities for us to grow and meet increasing orthopaedic needs. Dr. Makowiec's joining OAD is the first in a wave of exciting events for us. We invite you to read this issue's OAD FYI section for a glimpse at how we are expanding, reaching in new directions, and delivering on our pledge to provide a comprehensive center of orthopaedic excellence.

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Treating Tennis Elbow

Arthroscopy relieves pain,
dysfunction of common disorder

By Richard L. Makowiec, MD

Lateral epicondylitis, or tennis elbow, is one of the most common causes of elbow pain. Originally described in 1873, it affects between 1 percent to 3 percent of adults each year.¹

Lateral epicondylitis is classically believed to be a degenerative condition of the tendon fibers that attach to the bony prominence (epicondyle) on the outside (lateral side) of the elbow. Specifically, the degeneration is thought to involve the extensor carpi radialis brevis (ECRB) origin and the extensor digitorum communis (EDC) tendon origin. These are the muscles and tendons involved in lifting or extending the wrist and hand.

Causes

The typical patient with lateral epicondylitis is an adult between 30 and 50 years old. Men and women are affected equally, and symptoms occur more frequently in the dominant arm. Although it is commonly called tennis elbow, most patients with lateral epicondylitis are not

involved in racquet sports. There usually is no specific traumatic injury before symptoms start.

Mechanically, the injury is attributed to overexertion of the extremity with repetitive wrist extension and vigorous use of the forearm muscles. Common work activities associated with it are manual labor with heavy tools, significant forearm strain, and performing repetitive activities. From a recreational standpoint, it is associated with many sports, but most notably tennis, racquetball, squash, and fencing. Still, other patients develop tennis elbow with no specific antecedent activity.

Symptoms and diagnosis

Patients generally complain of pain of varying intensity on the outside part of the elbow. The pain can be aggravated by

direct pressure on the lateral epicondyle or when lifting very light objects such as briefcases, handbags, or even coffee cups. In more severe cases, pain can occur with any elbow movement, and elbow stiffness can develop.

Virtually all patients with lateral epicondylitis complain of pain radiating from the lateral aspect of the elbow. Another typical complaint is the inability to hold items because of pain in the lateral elbow. Although there is sometimes a history of an inciting event or activity, the onset of symptoms can be insidious with no apparent cause.

Physicians diagnose tennis elbow by performing a careful, directed history and physical examination. Occasionally, imaging techniques such as magnetic resonance imaging (MRI) and X-rays are used. On examination, the patient typically has maximal point tenderness just anterior and distal to the lateral epicondyle over the origin of the ECRB and EDC muscles.

Pain can be elicited by resisted wrist and digit extension. Grip strength can be measured objectively and is often diminished.

X-ray examination is often done more to evaluate for other pathology, such as arthritis in the lateral side of the joint. However, calcifications at the site of the epicondylitis can be seen in more chronic cases. MRI may be used to define the extent of tearing of the extensor origin as well as to identify other causes of lateral elbow pain.

Treatments

Conservative or nonoperative treatment often leads to symptom resolution, with the vast majority of patients experiencing symptom relief by one year. This typically consists of rest, activity modifications, and anti-inflammatory drugs. Physical or occupational therapy is often prescribed, generally consisting of stretching of the extensor origin coupled with isometric and concentric strengthening exercises.

Orthotic devices such as counterforce braces and wrist splints may also be used. The goal of these devices is to reduce tension at the extensor origin, allowing time for this area to heal. Additionally, steroid injections have been used to treat the acute pain of lateral epicondylitis. About 5 percent to 10 percent of patients develop chronic symptoms, and these individuals may eventually require surgical intervention to relieve lifestyle-limiting symptoms.

Surgical treatment of lateral epicondylitis is usually reserved for patients whose pain and functional disability persists after six to 12 months of nonsurgical treatment. Numerous surgical procedures are used to treat lateral epicondylitis. The general principle for the open technique includes debridement, or excision of the diseased tendon tissue, alone or in combination with removing some of the bone of the lateral epicondyle in an attempt to enhance natural healing. With this type of surgery, the vast majority of patients improve and resume playing physically



Degenerative ECRB and EDC tendon origins are debrided from the top of the capitellum to the midline of the radiocapitellar joint: normal appearing EDC tendon tissue is preserved.

demanding sports or engaging in physically demanding jobs.

Recently, with advances in arthroscopic techniques and a better understanding of elbow anatomy, a less invasive arthroscopic approach has gained popularity. The arthroscopic procedure, done as an outpatient procedure, has proved to be safe and reliable.^{2,3} It utilizes two to three small incisions around the elbow to create “viewing portals.” These small incisions allow access to the elbow joint. A camera, or arthroscope, is inserted into the elbow joint along with working instruments. Then, the degenerative ECRB tendon origin is visualized and debrided from the inside out, leaving the normal structures intact.

Another advantage of the arthroscopic technique is that any additional abnormalities seen within the elbow joint can be surgically treated at the same time. Some studies have shown that other elbow joint problems may be present in up to 20 percent of cases.³ At the conclusion of the procedure, only a soft dressing is applied, and the arm is supported in a sling.

After the surgery, immediate range of motion exercises to the forearm and elbow are initiated. Weight lifting is restricted for

six weeks, with a gradual return to unrestricted activities after two months. Supervised physical or occupational therapy may be considered for patients with persistent pain, stiffness, or strength deficits. Overall, a quicker rehabilitation and an earlier return to normal activities or work may be possible with arthroscopic surgery.

In short, the minimally invasive technique of arthroscopic tennis elbow release is gaining in popularity. Advantages include limited skin incisions, preservation of muscle and tendon tissues overlying the area, and the ability to treat other pathology in the elbow joint space. 📌

Richard L. Makowiec, MD, earned his medical degree from the University of Illinois at Chicago College of Medicine. He completed a five-year residency in orthopaedic surgery at Northwestern University's Feinberg School of Medicine and a fellowship in hand, upper extremity, and microvascular surgery at the Indiana Hand Center in Indianapolis. Dr. Makowiec is certified by the American Board of Orthopaedic Surgery with a Certificate of Added Qualification in Surgery of the Hand. His special interests include elbow, wrist, and hand arthroscopy; peripheral nerve injuries; sports injuries; and reconstructive surgery for upper extremity traumatic and arthritic conditions. Dr. Makowiec is an assistant professor of orthopaedic surgery at Northwestern University's Feinberg School of Medicine. He is a member of the American Academy of Orthopaedic Surgeons, the American Society for Surgery of the Hand, and the American Association for Hand Surgery.

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Elbow Injuries in the Throwing Athlete

Steps for prevention
and treatment

By Thomas W. Kiesler, MD

Repeated throwing by a young athlete can lead to elbow injuries that can sideline a budding career.

The repetitive nature of baseball pitching, in particular, can lead to overuse injuries and long-term disability. The American Sports Medicine Institute (ASMI) has reported a 1,600 percent increase in elbow surgery among high school throwing athletes since 2003.

The No. 1 risk factor for those who got hurt is simply how much they pitched; *the strongest predictor of injury being pitching past the point of fatigue*. Other risk factors include poor throwing mechanics and throwing inappropriate pitches (curve ball, slider, etc.) at a young age. Coaches

and parents may play a role by promoting the “year round one-sport athlete,” exposing the pitcher to overuse. Ignoring pitch counts and joint pain, all in the name of winning games or developing the “next major leaguer,” can end a career before it begins.

Pitching has been called the fastest human movement (the average time from the initial foot contact of the stride leg to ball release from the fingertips is 0.145 seconds). The ball accelerates from 4 to 95 miles per hour during this time. Extreme forces at the elbow are required to generate this type of ball speed.

The primary injury in the arm of most young baseball pitchers is a valgus overload or tension injury to the inner aspect, or medial elbow. This condition is called medial elbow overuse syndrome. The risk for developing this problem directly relates to the amount and intensity of throwing. The throwing motion is divided into several phases. During the arm’s late cocking and acceleration phases of throwing, excessive tensile loads are transferred up the kinetic chain from the legs to the trunk, shoulder, and finally to the elbow.

The prime stabilizer of the elbow, the ulnar collateral ligament (UCL), bears the brunt of this valgus stress. Without the contribution of other stabilizing structures of the elbow, the flexor-pronator muscle mass, and the bony architecture of the elbow joint itself, each pitch would overload the ligament to the point of failure. Fatigue allows the otherwise physiologic throwing stresses on the elbow to become supraphysiologic, promoting injury.

Repetitive supraphysiologic stress on the medial elbow can cause stretching of the UCL (attenuation), UCL tears (Figure 3), medial epicondyle avulsion fractures (Figure 1), flexor-pronator tendonitis, and ulnar nerve damage (ulnar neuritis). The result is medial elbow pain, loss of pitch velocity, and loss of ball control.

The lateral elbow (outer aspect) also is susceptible to injury. Rather than being subjected to a tensile force as seen at the medial elbow, the lateral elbow undergoes compressive forces, maximal at the end

COMMON ELBOW INJURIES



Figure 1 — Radiograph of medial epicondyle avulsion fracture; acute failure of epicondyle resulting from chronic valgus stress.



Figure 2 — MRI image of osteochondritis dissecans lesion of capitellum — a result of repetitive forces on the lateral elbow.



Figure 3 — MRI image of a complete medial collateral ligament tear from excessive pitching.



Figure 4 — Medial collateral ligament reconstruction using a tendon graft placed through bone tunnels at the medial elbow.

of the arm-cocking phase. Lateral compression injuries associated with throwing eventually may lead to osteochondritis dissecans (avascular necrosis of the capitellum) (Figure 2). This condition can cause pain and mechanical symptoms (catching/locking) when osteochondral fragments loosen and become loose bodies in the elbow joint.

The excessive varus torque seen during the arm acceleration phase also can increase the chance of injury to the posterior elbow. Repetitive valgus stress weakens or attenuates the UCL at the medial elbow, allowing posterior joint subluxation and resulting in posterior medial impingement, which can cause olecranon chondromalacia, osteophyte formation, and, ultimately, loose bodies.

The number of pitches thrown per game and per season relates directly to the risk of elbow pain and injury. To decrease this risk, coaches should evaluate the pitcher's overall throwing mechanics, monitor the number of pitches or throws, the frequency of play, and the velocity or speed of throwing; and keep in mind the player's age and maturity, skill level, and motivation for the sport (see Table 1). Pitchers should throw only age-appropriate pitches, fastballs and change-ups, until age 14. It is recommended that young baseball pitchers be limited to 75 pitches per game, or three to four innings, and spend a minimum of two to three months off each year from throwing. Strengthening and conditioning the muscles of the shoulder, forearm, and wrist can also help prevent elbow injuries.

Muscle soreness is normal; joint pain is not. Prompt evaluation and treatment often can prevent a minor injury from worsening or causing permanent damage. Evaluating elbow pain in the throwing athlete must begin with a full and detailed history, including duration of symptoms, changes in stamina, pitch velocity or control, anatomical location of pain, and relationship between the pain and the throwing phase.

The physician will look for an elbow effusion (swelling), evaluate the range of motion, and check the stability of elbow ligaments. The shoulder also should be evaluated for range of motion and weakness

and/or atrophy, particularly of the scapular stabilizing muscles. Radiographs and possibly magnetic resonance imaging (MRI) can be useful diagnostic tests (Figure 3).

The first line of treatment for the throwing athlete with medial elbow overuse syndrome is complete REST of the arm. All throwing must cease, and physical therapy is often prescribed. Goals are to control inflammation, restore elbow function, correct bad throwing mechanics, and prevent reinjury.

The first rehabilitation phase takes one to three weeks or until ALL medial elbow pain resolves (Table 2). The >>

Table 1 – Pitch Counts and Recommended Rest*

Age	17-18	13-16	11-12	10 and under
Max. pitches per day	105	95	85	75
Rest for ages 16 and under				
No. of pitches	61+	41-60	21-40	1-20
Days of rest	3	2	1	0
Rest for ages 17-18				
No. of pitches	76+	51-75	26-50	1-25
Days of rest	3	2	1	0

*Source: Little League International

Table 2 – OAD Nonsurgical Treatment

Phase 1	1 to 3 weeks	Decrease inflammation and pain; eliminate inciting activity (throwing), anti-inflammatory modalities, restore full range of motion, begin active rest (strengthening of the kinetic chain).
Phase 2	2 to 4 weeks	If elbow is pain free, begin elbow strengthening (flexor pronator group); continue active rest. Start "Thrower's Ten" exercises (ASMI).
Phase 3	4 to 8 weeks	Return to a throwing program, agility exercises, progress strengthening upper body and core, biomechanical throwing analysis, home exercise program.

emphasis in this phase is a strong therapeutic program to assess/treat the other muscle groups/joints that affect the throwing motion (i.e., hips, trunk, back, shoulder). Strengthening and stretching of these vital areas begins immediately while the elbow inflammation is resolving and range of motion (ROM) is restored.

Once the elbow is pain free with full ROM, strengthening of the dynamic stabilizers of the medial elbow (the flexor pronator muscle mass) starts in Phase 2.

Phase 3 lasts four to eight weeks as a return to throwing program is slowly initiated, while the strengthening exercises previously prescribed continue. This nonoperative treatment plan is highly effective in returning throwers to their previous activity level. If this treatment plan fails to allow for return to pain-free pitching, surgical intervention may be required. Surgical reconstruction of the medial collateral ligament is possible. However, sometimes surgery can be avoided if a pitcher is willing to consider a position switch.

Medial collateral ligament reconstruction, also known as Tommy John surgery, involves re-creating the ligament using a tendon graft — a spare tendon from somewhere else in the body (Figure 4). This surgery can be very effective in



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returning pitchers to their previous level of function. Unfortunately, data is sparse concerning the pitchers' ability to advance their careers. The rehabilitation after surgery lasts approximately one year before competitive pitching can resume.

Surgical intervention, rarely indicated for children 14 years of age and younger, may also be needed for cartilage lesions,

fracture repair, or loose body removal. Elbow injuries in the young thrower can often be avoided by adhering to recommendations for pitch counts and rest. If elbow pain occurs, however, prompt treatment is required. Ⓜ

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A Hand Surgeon's Outlook

Richard L. Makowiec, MD

Q *Why did you decide to join OAD Orthopaedics?*

A OAD Orthopaedics is the premier provider of musculoskeletal care in DuPage County, and has a reputation for providing the highest quality of care. These were instant allures to the practice. In addition, the Western Suburbs of Chicago represent a dynamic area of growth, diversity, and a high quality of life. OAD is an ideal practice in a great location that supports both my personal and professional aspirations.

Q *What do you hope to bring to the practice? Where would you like to see things go?*

A I hope to bring an energetic and enthusiastic approach to hand surgery to a group that is already well known for providing quality hand care. I have a strong background in hand, wrist, and elbow trauma, as well as minimally invasive and innovative surgical techniques. I think we will continue to see rapid advancements in the use of technology and imaging techniques that will allow us to provide ever greater and more precise care to the hand and upper extremity with the goal of alleviating patients' pain and improving their function.

Q *What led you to become a physician?*

A When I was in high school, I had an accident that fractured both of my wrists at the same time. The manipulation and very hands-on orthopaedic treatment fascinated me. I had always thought being a physician and helping people was a very noble profession. Additionally, I saw becoming a physician as a way to satisfy my need for new and constant intellectual challenge. Once I was in the field, it quickly became clear to me that surgery and, in particular, orthopaedic surgery was what interested me.

Q *Why did you choose to specialize in the hand and upper extremities?*

A I only have to sit down and start typing to marvel at the fine movement and control of the hands. In fact, they function so well that we often take them for granted until injury, arthritis, or other problems impair them. They are truly remarkable in their ability to move, touch, and execute actions. To do these activities, hands require functioning nerves, bones, joints, tendons, and muscles. Only in hand surgery do we get to care for all of these specialized tissue types. With the proper surgical and nonsurgical treatment I can help people resume their work, art, or recreational passion.

Q *How has orthopaedics advanced since the start of your career?*

A I think the explosion of new technology in all fields of medicine has led to tremendous advances in our ability to diagnose and treat patients. In our field, the use of arthroscopic techniques has allowed us to perform joint surgery

in a minimally invasive manner, allowing faster recovery and return to work or sports. Also, new implants have allowed us to treat fractures more securely and accurately, thus restoring normal anatomy. Imaging, such as magnetic resonance imaging (MRI) and ultrasound, also has advanced to the point that we now can make better diagnoses and detect problems that may be difficult to uncover with the physical exam.

Q *What is it like interacting with patients on a day-to-day basis?*

A Probably the most rewarding part of this job is the opportunity just to sit down with patients, talk, and get to know them. Each patient is different in terms of his or her problems, goals, and expectations. Interacting with them allows me to know them on both a personal and professional level and then to tailor their treatment to their individual life and activities.

Q *What are the most rewarding aspects of your job?*

A My direct contact with patients and working to solve their problems is very rewarding. I get to work with individuals who have lost hand function for any number of reasons. The impact on their daily life, work, and recreation can be devastating. The chance to help them return to their work, life, and play is very satisfying.

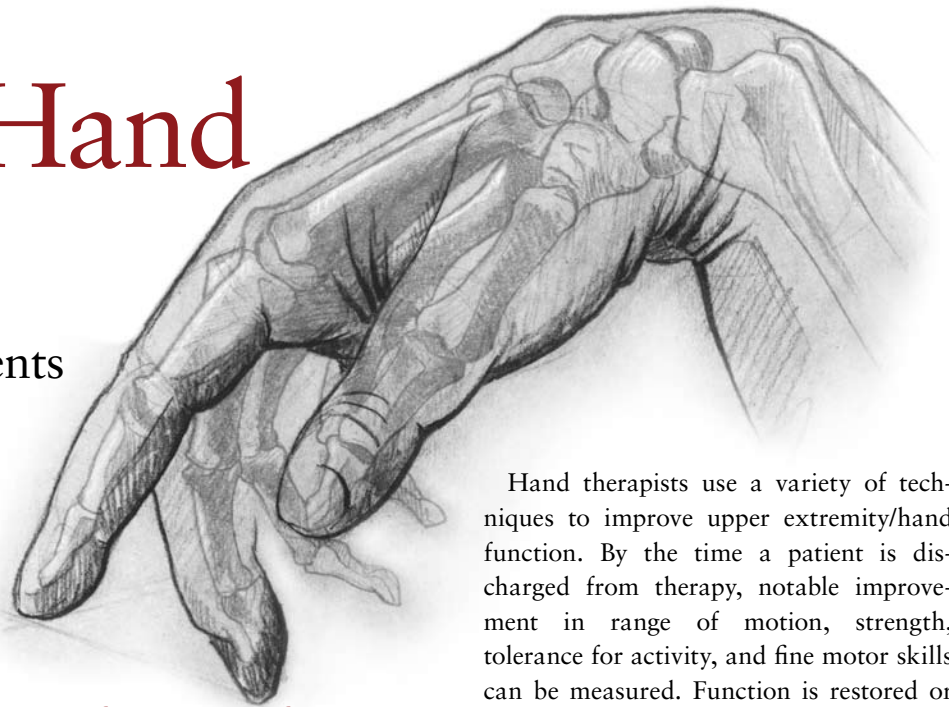
Q *What do you do to relax when you are not at the office?*

A My highlight outside of medicine is spending time with my wife, Angie, and my sons, Nick and John. I also like outdoor activities and am an avid runner. 🏃

Restoring Hand Function

OAD therapists offer patients a helping hand

By Linda Picchiotto, OTR/L, CHT



The American Society of Hand Therapists defines the profession this way: “Hand therapy is the art and science of rehabilitation of the upper extremity of the human body.”

“Hand therapists are occupational therapists or physical therapists who, through extra training and experience, have specialized knowledge of upper extremity function. Using specialized skills in assessment and treatment, hand therapists work with their clients to prevent injury or impairment, restore functional use, and enhance participation in daily life.”

Certified hand therapists (CHTs) have completed a Bachelor of Science or Master of Science degree in occupational or physical therapy from an accredited school. CHTs are required to have at least five years’ clinical experience with two years of concentration in the upper quadrant. In addition to the extra education and clinical work, therapists must pass a certification exam.

Patients are referred to hand therapy for a variety of diagnoses. Common traumatic injuries treated by a hand therapist can include hand, wrist, and elbow fractures; nerve, tendon, and muscle(s) lac-

erations; amputations; infections from bites; sprains; and strains. One of the most challenging injuries a hand therapist treats is replantation. After a finger or wrist is severed and the physician has “replanted” the limb, the patient is referred to therapy. The teamwork and efforts of patient, therapist, and physician during the course of therapy ensures that the patient’s upper extremity function is restored.

Hand therapists also treat patients with chronic problems, such as arthritis, and cumulative



trauma injuries, including tennis elbow or carpal tunnel. Patients with chronic problems or cumulative trauma are often seen with the

intention to avoid surgical intervention. When chronic conditions or cumulative injuries do not resolve with conservative treatment, the patient may require surgical intervention. Hand therapy would be prescribed for the patient after surgery.

Hand therapists use a variety of techniques to improve upper extremity/hand function. By the time a patient is discharged from therapy, notable improvement in range of motion, strength, tolerance for activity, and fine motor skills can be measured. Function is restored or the patient has learned to compensate for their deficits. Patients are then able to resume normal activities of daily life.

Perhaps most importantly, patients who attend hand therapy encounter a positive, cheerful, and motivational atmosphere that makes their recovery manageable and, perhaps surprisingly, enjoyable. CHTs understand how a hand injury/condition can impact a patient’s life, so the power of mutual support among patients, combined with the medical expertise of the therapist, contribute significantly to successful therapy outcomes. The therapist communicates with the patient’s physician, informing them of progress and discussing any patient concerns.

Laughter, cheering on, conversation, and patient camaraderie, as well as therapists’ personal attention and dedication to patient care, are all part of every OAD Orthopaedics Hand Therapy Services experience.

During therapy sessions, the utilization of modalities, both electrical and thermal, is a common and effective treatment. These modalities may be used for scar modification, muscle retraining, and decreasing edema (swelling), pain, and inflammation. These modalities also increase motion and tissue extensibility.

Most patients who are prescribed hand therapy also require some type of splint.

Splints are custom-made and are used for several reasons. The purpose of a splint may include protection and functional positioning, decreasing pain and inflammation, promoting balance between structures, and stretching tissues to increase range of motion.

Therapeutic activities are developed to promote function on a subconscious level. A therapist discusses with a patient the activities of daily life that are challenging and presenting problems. A therapist carefully analyzes the patient's specific challenges and identifies deficits so a plan is designed that allows the patient to perform activities optimally and improve function.

Patient education is a significant aspect of therapy because it focuses on making patients aware of what control they have of their outcomes. Educating patients can include ways to promote the healing process, such as decreasing swelling and sensitivity after an injury. Other informative and useful topics for patients consist of the following: posture and its effects, ways to protect your joints, methods to prevent cumulative trauma injuries, and proper movement techniques/patterns.

When patients first visit OAD's Hand Therapy Department, it is critical to ease their worries and to explain the prescribed course of therapy so there is a full understanding of what will occur during and after therapy. Patients experience the rigors of therapy, but during that journey, OAD's therapy programs elicit incredible rapport and result in positive outcomes. This supportive atmosphere contributes significantly to healing, recovery, and patients reaching their orthopaedic goals! 🌟



Linda Picchiottino, OTR/L, CHT, earned a Bachelor of Science degree in occupational therapy from the University of Wisconsin-Madison and received her certification in hand therapy in 1991. Joining OAD Orthopaedics in 1990, Linda is the practice's director of hand therapy. She currently is pursuing massage therapy certification.

FYI from OAD

Orthopaedic Sports Medicine Certifications

Lenard LaBelle, MD, and David Watt, MD, two of OAD Orthopaedics' sports medicine specialists, passed the



LaBelle



Watt

American Board of Orthopaedic Surgery's (ABOS) Subspecialty Certification in Orthopaedic Sports Medicine. Prior to the ABOS offering this sports medicine certification, only ABOS hand surgeons were eligible for a subspecialty certification in hand surgery. Notably, Drs. LaBelle and Watt were part of the first group to take the newly offered ABOS examination. Fewer than 600 surgeons nationally took the inaugural exam. To qualify for the examination, each surgeon had to submit approximately 120 surgical cases performed within a year for the ABOS' evaluation and approval. Congratulations to Drs. LaBelle and Watt on these achievements that further establish their orthopaedic sports medicine expertise.

Introducing OAD's Newest Physician Assistant

In March, OAD welcomed **Laurie Morgan, PA-C**, a certified physician assistant (PA).



Morgan

Laurie earned her Master of Science degree in Physician Assistant Studies in 2003 from Pacific University in Forest Grove, Oregon. Laurie has an extensive orthopaedic background, having worked in orthopaedics since 1996, so her clinical and patient care experience will be invaluable to OAD. In addition to Laurie, OAD's PA Team includes

Christopher Kwong, Shannon McCormick, Daniel O'Donnell, and Susie Reed.

OAD Naperville Office Relocation ... Summer 2008!

We are very excited about the upcoming opening of OAD's new Naperville medical office building at 101 East 75th Street. The spacious and full-service medical facility, conveniently located near Edward Hospital, will allow more OAD specialists to meet the ever-increasing orthopaedic needs of Naperville, Bolingbrook, Woodridge, Plainfield, and other nearby communities. In addition to patients receiving our physicians' subspecialty orthopaedic and musculoskeletal care in a new Naperville setting, the site will be fully equipped with diagnostic imaging, including on-site magnetic resonance imaging (MRI), as well as OAD's signature physical and occupational therapy services.



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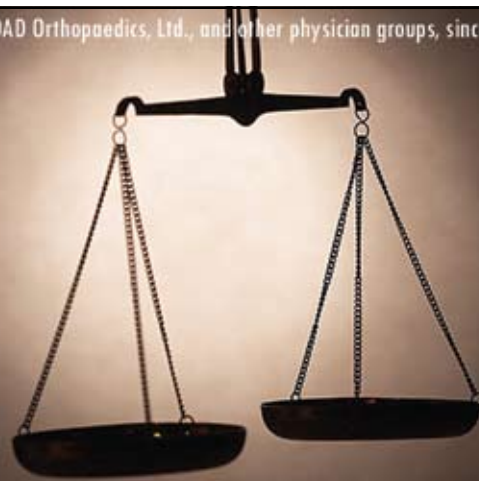
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