

# Orthopedic physical therapy

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The history of orthopedic physical therapy originated in Egypt as far back as 2830 B. C.

Splints have been found on mummies made from bamboo, reeds, wood and bark, padded with linen (). Orthopedic physical therapy has also been recognized in ancient Greece around 430 and 330 B. C. Hippocrates had developed special splints for fractures and focused on aspects of the knee during this era (). Modern orthopaedics, with particular focus on the year 1741, shows Nicholas Andry as being the father of orthopaedics. Andry coined the word, which derived from the Greek words for “ correct” or “ straight” (orthos) and “ child” (paidion). Orthopedic physical therapy specialized in the US in 1974.

The Orthopedic Section of the APTA was formed for physical therapists that specialized in Orthopedics. Orthopedic physical therapy includes treatment of the musculoskeletal system that has been subject to injury or trauma. This includes sprains, strains, post fracture, post-surgery and repetitive injuries (Orthopedic Physical Therapy). Orthopedic physical therapy focuses primarily on treating post-operative joints, acute injuries, arthritis, and amputations. This therapy is essential to reestablish the patient’s strength, activity or motion after injury or surgery. Some approaches to orthopedic therapy are stretching, strength training, cold/hot packs, joint mobilizations, and electrical stimulators. Also used sometimes are ultrasounds when dealing with muscle retraining.

Stretching is good if the patient has a stiff joint. It is extremely crucial to perform proper stretching techniques. Strength training exercises can be

closed chain workouts or proprioceptive workouts. Closed chain workouts are meant to assist and balance the strength of muscles whereas proprioceptive workouts assist patients who lost the sense of knowing where a body part is in space. The heat and ice therapy contributes to the circulation of blood which decreases swelling. It is also used as a warm up or cool off of the muscles being treated. With the use of sonogram, deep tissues are stimulated and warmed (Physical Therapy).

Just like in any physical therapy, it is important to keep the concept of function in mind. If the patient presents complaints in the musculoskeletal system or if any abnormality has been observed, it is important to do a detailed Orthopedic Physical Therapy examination. To perform an orthopedic physical therapy examination of the muscles, bones and joints, start by dividing the musculoskeletal system into functional parts. Use the opposite side for comparisons. Upon examination, one should note areas of enlargement while palpating the joints and surrounding structures. By noting carefully the stability of the enlargement and its boundaries, one can decide whether this is due to bony widening, thickening of the synovial lining of the joint, soft tissue swelling of the structure surrounding the joint, an effusion into the joint capsule, or nodule formation, which might be located in a tendon sheath, subcutaneous tissue, or other structures about the joint. While palpating the joints, the therapist should note areas of increased warmth (Orthopedic Physical Therapy).

There are two types of equipment used in orthopedic therapy. The first are items that are worn and used to support and stabilize weak or traumatized body parts. Back braces; cervical collars; wrist, hand and elbow splints; and <https://assignbuster.com/orthopedic-physical-therapy/>

knee and ankle braces are a few examples. An injured body part requires stabilization to heal and prevent additional injury. These braces are often made from a mold taken of the affected body part for a perfect fit to insure complete support. The second type of equipment is meant to assist with activities of daily living and enable one to complete difficult tasks. These items are often referred to as durable medical equipment.

The most common DME items include canes; crutches; walkers; adaptive strollers; manual and power wheelchairs. Other forms of DME include specialized spoons, dishes, extended straws, and raised commode seats, mechanical lifts, transfer boards and disks, bolsters, and arm troughs. Even though these items are not worn, one will still need to be measured for walkers, wheelchairs and supportive seating. Many of these items are covered by Medicare, Medicaid, and private insurance companies (Munson, 2010). An orthopedic therapist must have in depth knowledge of disorders and injuries of the musculoskeletal system which includes muscles, bones, joints, bursa, ligaments and tendons. The orthopedic therapist must also be trained in the treatment of post-operative joints; sports injuries, such as sprains, fractures, and tears; arthritis, and amputations. One must also be proficient in the use of hot packs, cold packs, and the use of electrical stimulation that is often used to speed recovery.

(Inverarity, Laura D. O. , 2010). Physical therapy assistants held about 63,800 jobs in 2008. Employment opportunities are expected to rise due to the increasing demand for physical therapy services. Employment is expected to rise 35% through 2018, which is much faster than most occupations! Baby boomers are entering the elderly stage making the demand for physical  
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therapy services rise. The elderly are more vulnerable to chronic and debilitating conditions that require therapeutic services.

Technology developments will also increase the survival rate of trauma victims and babies with birth defects creating another demand for rehab services. Opportunities for physical therapy assistants are expected to be very good. Physical therapists are able to manage a much bigger clientele with the help of the assistant. Job opportunities are to be particularly good in acute hospitals, skilled nursing and orthopedic settings, where the elderly are most often treated. (Bureau of Labor Statistics, 2009). The healthcare reform has been a big factor in patients receiving care from a physical therapist. The American Physical Therapy Association (APTA) strongly supports efforts to reform the United States healthcare delivery system to improve coverage, access, and quality of care and reduce unnecessary costs.

APTA stands ready to work with the U. S. Congress and President Obama's administration to meet this policy challenge in 2009. APTA supports the following policy principles for health care reform:

- Enact systematic health care reform that provides patient guarantee issue, renewal, and choice and access to affordable health care for all individuals from the health care provider of their choice.
- Guarantee issue ensures that patients would not be denied meaningful coverage due to pre-existing conditions.
- Guarantee renewal would ensure patients would not have their coverage terminated due to a change in health status.
- Guarantee choice would ensure that patients have a choice in their health care insurance.

- Reduce health care disparities across race, gender, geographic area, setting, and health status.
- Ensure that rehabilitation services, provided by licensed health care professionals, are an essential element of a standard benefits package in any proposal to reform the insurance delivery system. Rehabilitation is a critical part of the health care continuum and ensures that individuals can return to the highest function possible in their homes and communities.
- Enact insurance reforms that: eliminate arbitrary limits on annual or lifetime benefits; -prohibit cost shifting by increased co-payments, deductibles, and/or premiums; and - ensure non-discrimination on benefits or providers.
- Eliminate existing Medicare payment policies that impede patient access to cost-effective outpatient rehabilitation services provided by physical therapists including: - permanently repeal the Sustainable Growth Rate (SGR) formula in the Medicare physician fee schedule and replace it with inflationary indices to accurately reflect costs in delivering health care services; permanently repeal arbitrary outpatient therapy caps on services; and - eliminate the unnecessary referral requirement or certification of the plan of care for patients to access outpatient physical therapy services. This barrier to patient access delays care and adds additional costs for patients and the health care system.
- Ensure that all models of care delivery, such as medical homes and accountable care organizations, enhance patient access to rehabilitation services.

Ensure that any policy set forth regarding bundling payments for post-acute care services meet the following criteria: - Bundled payments should not be implemented into law or regulation without full evaluation of its feasibility and advisability as a payment model for post-acute care services. APTA

recommends demonstration projects to further evaluate this payment methodology and for the gradual phase in of policies that change the payment system from post-acute care. Patient safeguards should be established to ensure patient choice and access to the full range and continuum of post-acute and outpatient care. -Post-acute care should be defined as Part A services within the first 30 days post discharge from an acute care hospital stay delivered by inpatient rehabilitation facilities, skilled nursing facilities, home health agencies, and/or long-term acute care hospitals. • Enhance initiatives to develop a national strategy that will ensure that an adequate health care workforce exists to meet the needs of patients. Enable physical therapists to fully participate in current initiatives, such as the National Health Services Corp, as well as any new programs established to provide workforce incentives to recruit and retain qualified health care professionals in underserved areas. - Expand federal funding for clinical education, fellowships, and faculty development in physical therapy.

- Reduce unnecessary regulatory burdens on physical therapists to enhance efficiency and effectiveness in delivering health care to their patients at the right time and place.
- Eliminate referral for profit arrangements in health care. Include prevention and chronic care management programs and services to reduce health care costs or to manage those costs in an efficient and effective fashion.
- Expand health information technology incentives to all health care professionals to ensure greater efficiency, improve patient care, facilitate outcomes measurement, and enhance collaboration and integration between all members of the health care team across patient settings

Payment incentives, training and education should be phased in

over a period of time to enhance compliance and effectiveness. (APTA 2009)The anatomical structures involved in an anterior cruciate ligament (ACL) tear are the three different bands that make up the anterior cruciate ligament. These are; the anteromedial, intermediate and posterolateral bands. Along with the thigh muscles the ACL works to stabilize the knee joint, it prevents the femur from moving posteriorly while bearing weight and stabilizes the tibia from excessive internal rotation.

Other structures that may be involved in an ACL injury are other supporting structures such as the anterolateral or anteromedial joint capsules, the LCL and MCL and the PCL (Arnheim-Prentice-Ch19, 1997). There are three bones that meet to form your knee joint: your thighbone (femur), shinbone (tibia), and kneecap (patella). Your kneecap sits in front of the joint to provide protection. The meniscus is on either side of the joint and offers a layer of articular surface for weight bearing and shock absorption purposes. The bones are connected by ligaments to provide stability to the joint. The anterior cruciate ligament runs diagonally in the middle of the knee to prevent the tibia from sliding out in front of the femur, as well as providing rotational stability to the knee (American Academy of Orthopaedic Surgeons, 2009). The ligament most vulnerable to injury is the anterior cruciate ligament (ACL).

The major mechanism involved in an ACL tear occurs when a running athlete suddenly decelerates and makes a sharp “cutting motion”. This is called a single plane injury and occurs when the lower leg is rotated while the foot is in a fixed position. A direct blow to the knee can cause hyperextension and also cause an ACL tear. An athlete that experiences a tear feels or hears a ‘  
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pop’ with immediate instability, pain and swelling and may complain that it feels as if the knee is coming apart (Arnheim-Prentice-Ch19, 1997). Other symptoms associated with ACL tears include joint swelling or stiffness, knee instability (or “ giving away” symptom), loss of full range of motion, discomfort with walking, or tenderness along the joint line (Journal of Neurophysiology, 2006; American Academy of Orthopaedic Surgeons, 2009). The anterior cruciate ligament (ACL) is the most commonly injured ligament generally among persons who participate in high risk sports. Actions such as pivoting, sidestepping maneuvers, direct contact, slowing down by running or awkward landings have caused this type of injury.

Females have a higher risk of ACL injury than males in certain sports due to differences in conditioning of the body, muscular strength, and neuromuscular control (American Orthopaedic Surgeons, 2009). Treatment for a partially torn ACL is far more favorable than a complete ACL rupture. Partial ACL tears typically have a recovery and rehabilitation period of three months; however, if a patient continues to have instability symptoms, patients are advised to participate in a complete course of physical therapy with clinical follow-ups. Complete ACL ruptures leave a patient unable to participate in pivoting type sports or other various activities, such as walking. Patient treatment also varies on that person’s individual needs, which allows the patient to choose between non-surgical or surgical treatment options. ACL tears typically do not heal without surgery; therefore this option is best for those persons with a low activity level or quiet lifestyle. Patients may recommend bracing and/or physical therapy.

If a patient would prefer to return to their high activity lifestyle, then the surgery treatment option would be recommended. Opting for surgery would require the doctor to rebuild the torn ligament by replacing the ligament with a tissue graft. The healing process could take up to 6 months or more (American Academy of Orthopaedic Surgeons, 2009). Physical therapy plays an important role in rehabilitation whether there is surgery or not. It helps reduce swelling, increase mobility and build strength and stability by using various methods. A physical therapy program should focus on returning motion to the joint and surrounding muscles. Followed by strengthening the surrounding muscles to protect the new ligament and give it stability.

After the athlete is able to get back to normal activities then the program should focus on gaining strength that will pertain to the athlete's sport.

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