Broadway Apothecary
1515 Oak Street
Eugene, Oregon 97401

RxTriad

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Broadway Apothecary
Customized Prescriptions for Healthy Living

1515 OAK STREET
EUGENE, OREGON 97401

Pharmacists:
Kate James, R.Ph.
Sheri Cannell, R.Ph.
Heather Wilson, R.Ph.

Tel: 541-684-9352
Fax: 541-684-0858

www.broadwayapothecary.com
broadway@broadwayapothecary.com

HOURS:
9 AM - 6 PM
Monday - Friday

Sports Injuries and Innovative Medications

Loyd V. Allen, Jr., PhD, RPh
Editor-in-Chief
International Journal of Pharmaceutical Compounding
Edmond, Oklahoma

Fall is approaching, the time of year that baseball starts winding down and football, followed by basketball, starts gearing up. Football, especially, is a sport that can present numerous opportunities for injury; proper treatment and symptom relief can help minimize or prevent more serious injuries and problems later in life.

There are numerous risk factors for injuries in athletics, including:

- Training errors, including "too much too soon" and abrupt increases in the intensity, duration, or frequency of training
- Improper equipment
- Inappropriate clothing/footwear
- Poor coaching
- Previous injury(ies)
- Poor conditioning
- Incorrect or improper technique
- Imbalances in muscle-tendon strength and flexibility
- Anatomical problems, including differences in leg length, bowlegs, flat feet, etc.
- Disease(s), including arthritis, poor circulation, previous fractures, etc.
- Menstrual irregularity (possibly resulting in bone thinning)

Pre-sports Physical

To minimize sports injuries, there are a number of actions recommended, including having a "pre-sports" physical by a qualified physician. The goal of this physical exam is to assess overall health, detect any conditions that may lead to injury, detect conditions that may disqualify the individual from participation in some sports, assess the fitness for a specific sport, and make recommendations for the exercise program.

Other Preventive Aids

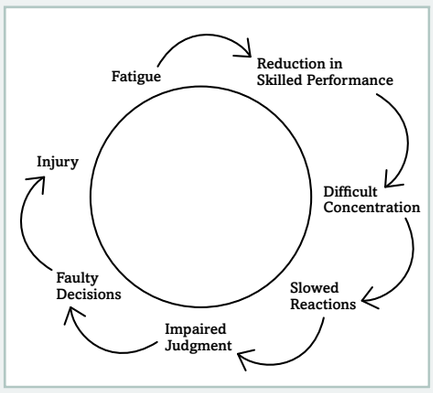
The use of appropriate clothing can contribute to protecting the body from the weather and sun, and allow for freedom of movement. Proper footwear is essential—when a person runs, they can exert about 3 to 4 times their body weight on the foot and leg. Shoes are of many diverse types and different purposes. In addition to proper design, proper fit and protection against blisters and other skin conditions is important.

Respect the Environment

Football season starts in the heat of the summer and ends in the cold of the winter. Proper conditioning and preventive medical care can minimize and prevent injuries resulting from cold, heat, and high humidity.

Injury

There can be a link between fatigue and injury. This can be shown in the following diagram:



Almost all athletes experience an injury at some time; some experience many. Fortunately, most are minor and easily treated, but some are serious and require extensive medical care. A "responsible athlete" will recognize that prompt, proper diagnosis and treatment of all sports injuries is essential to ensure the quickest and most efficient recovery. Failure of an athlete to admit they have an injury may seriously impact their future health status and possibly result in more serious injuries in the future.

Generally, injury can be classified into three categories, as described below:

Mild Injury

A mild injury is where performance is not affected, pain is experienced after a workout, the area is not tender to the touch, there is no or minimal swelling, and there is no discoloration.

Moderate Injury

A moderate injury is where performance is mildly affected, there is pain before and after activity, tenderness to the touch, mild swelling, and some discoloration.

Severe Injury

Severe injury is when one experiences pain before, during, and after exercise; performance and daily activities are affected by pain; normal movement is affected by pain; severe pain with finger pressure occurs; and there is swelling and discoloration.

Injuries can be acute, as in fractures, strains, sprains, bruises/contusions, dislocations/subluxations, hemobursa, and acute compartment syndrome. They can result from overuse, as in tendinitis, neuritis, cartilage wear and tear, osteochondritis dissecans, bursitis, overuse compartment syndrome, and stress fractures.

Common acute injuries include sprain, strain, fracture, laceration, incision, puncture, abrasion, excessive bleeding, internal bleeding, shock, tendinitis, bursitis, plantar fasciitis, osteochondritis dissecans, neuritis, epicondylitis, stress fracture, mechanical lower back pain, and others.

Treatment

Rest, ice, compression, and elevation (RICE) can be important in the treatment of many sports injuries. However, there are many injuries where other options are required.

Physicians have a wide variety of therapies available for use, including physical and pharmacological. Pharmacological treatments include analgesics (nonsteroidal anti-inflammatory drug [e.g., ketoprofen, diclofenac, naproxen, indomethacin]), skeletal muscle relaxants (baclofen, cyclobenzaprine), corticosteroids (dexamethasone), rubefacients, etc. Commercially manufactured drug products include many oral products (tablets, capsules, liquids), topicals/transdermals (ointments, creams, lotions, gels), injections, suppositories, etc. However, in many cases these products contain only one drug. Also, they either do not contain the right combination of drugs requiring multiple dosing or the drug is not in the right dosage form for the patient.

Compounding pharmacists have a wide variety of dosage forms that can be prepared for specific patients. Many different specific dosage forms can be prepared, including transdermal gels, sprays, creams, lotions, and ointments; ultrasound gels and iontophoresis solutions; capsules; and liquids containing the specific drugs and specific dosages required for the patient.

Healing

Generally, for high school, college, and professional athletes, healing times are fairly short because they are very motivated and tend to do what is asked of them. Also, these athletes (patients) are in very good shape. Generally, the better shape someone is in before an injury, the quicker the recuperation times tend to be. Today, there tends to be more arthroscopic and minimally invasive surgeries that can lead to shorter hospital stays, less pain, and quicker rehabilitation.

Conclusion

Making a selection from one of the various options to treat a patient with a sports injury has a commonality with the selection of treating a patient with any physical dilemma—you must consider the uniqueness of each patient, as they may have allergies or adverse affects to certain ingredients, or they may have compliance issues. The compounding pharmacist helps fill the void that exists between manufactured drugs and inadequate treatment by preparing medications specifically for those patients for whom standard pharmaceuticals are not the answer.

Contact the compounding pharmacist from whom you received this RxTriad for additional information about the formulas provided.

TYPICAL COMPOUNDS USED TO TREAT SPORTS INJURIES

MUSCLE RELAXANTS FOR MUSCLE SPASMS, CRAMPS, AND LOW BACK PAIN

Rx
Baclofen 5%, Lidocaine 10%, and Guaifenesin 10% in PLO Transdermal

Rx
Guaifenesin 10% or 20% in PLO Transdermal

Rx
Guaifenesin 10% and Dextromethorphan HBr 10% Transdermal Gel

Rx
Cyclobenzaprine 0.5, 1%, or 2% in PLO Transdermal

INFLAMMATION AND PAIN

Rx
Capsicum Oleoresin 0.3% and Ketoprofen 10% in PLO

Rx
Diclofenac 8% Gel

Rx
Diclofenac 8% Cream

Rx
Diclofenac 8%/Bupivacaine 1% Cream

Rx
Ketoprofen 5%, 10%, and 20% Transdermal Gel

Rx
Ketoprofen 10% Cream

Rx
Diclofenac Sodium 1% Gel Soft Patch

Rx
Diclofenac Sodium 1% Lipophilic Gel Soft Patch

Rx
Ketamine Hydrochloride 5% and Ketoprofen 5% in PLO

Rx
Ketoprofen 100-mg/5-mL Mouth Rinse

Rx
Piroxicam 1% Soft-Patch Gel

Rx
Piroxicam 1% Lipophilic Gel Soft Patch

WOUND CARE

Rx
Lidocaine, Epinephrine, and Tetracaine (LET) Topical Spray

ULTRASOUND GELS

Rx
Dexamethasone and Lidocaine Phonophoresis Gel

Rx
Ketoprofen and Cyclobenzaprine Phonophoresis Gel

Rx
Piroxicam 0.5% Phonophoresis Gel

IONTOPHOREIS SOLUTIONS

Rx
Acetic 2% or 4% Aqueous Solution for Iontophoresis (to reduce scar tissue)

Rx
Dexamethasone 0.4% Aqueous Solution for Iontophoresis

Rx
Dexamethasone 0.4%/Lidocaine 4% Solution for Iontophoresis

Rx
Lidocaine 4% Solution for Iontophoresis

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