The Basketball Seminar:

Thursday, October 28, 2004
4:30 pm to 5:00 Dinner
5:00 pm to 9:00 pm Seminar

This Seminar is perfect for therapists, coaches, parents and even athletes. For more information contact John Gibel at (330) 543-2124. Sponsored by Akron Children's Hospital, Allied Health Rehab Center and Crystal Clinic.

Allied Health Rehab Centers

No matter what the sport, Allied Health Rehab Center is there for you. From youth to adult, from sports medicine to physical therapy, Allied Health will help you get *"back on the playing field"*.

Akron (330) 543-2110
Barberton (330) 753-5113
Cuyahoga Falls (330) 920-1002
Mogadore (330) 628-0736
Tallmadge (330) 630-0630
Wadsworth (330) 335-0026

Quality People, Quality Care, Quality Results

Attention Coaches!!
Allied Health Rehab Centers has recently posted Coaches Seminars on our web site for the rest of 2004! Check it out at ***www.alliedhealthrehab.com.***

Portage Physical Therapists, Inc.
dba Allied Health Rehab Centers
533 E. Main Street
Ravenna, Ohio 44266

Akron Children's Hospital Sports Medicine Center

Allied Health Rehab Centers

CRYSTAL CLINIC

Sports Health & Rehab Center
On The Canal

September 2004

Health Alert — *Protein Supplements*

By: Joseph Congeni, M.D.
Akron Children's Hospital

What are the goals of athletes who use protein supplements?:
To increase strength/power
To increase lean muscle mass

How do protein supplements help the athlete to achieve these goals?

Workouts break muscles down, protein helps to build muscles back up. If protein needs are not met, workouts will not produce desired results. However, if calorie needs are not met (ie primarily from carbohydrates) protein that is ingested, as well as the athlete's own muscle, will be broken down for fuel.
THEREFORE, BOTH CARBOHYDRATE AND PROTEIN INTAKE ARE IMPORTANT FOR STRENGTH AND MUSCLE GAINS.

What are the protein needs of young athletes?

Studies show that young athletes have higher protein needs than non-athletes. Endurance athletes and those on weight loss diets have even higher requirements. The mathematical formula (boring): 1-1.8 grams protein/kg body weight. Therefore, for a 150 lb. athlete this is about: 70-115 grams of protein/day. A general rule of thumb that will get you in the ballpark is about 30 grams of protein for every 50 lbs. of weight. 30 grams of protein is about:

1 4oz. serving of chicken/fish/meat
3 8 oz. servings of dairy (milk/yogurt)
6 servings of bread/cereal
1 serving of most protein supplements

Easy way to increase protein?

Add nonfat dry milk (3 gr. Protein/2T powder) to milk, cereal, on sandwiches, etc. Protein (either as food or supplement) is best taken after work-outs, and spread out throughout the day. Avoid taking immediately before a workout because:Protein tends to stay in stomach longer than carbohydrates, may cause stomachache. Carbohydrates are a better fuel for the workout than either protein or fat.

What are the advantages of protein supplements?

May help athletes on high-carbohydrate or vegetarian diets to ingest enough protein. Convenient to use (esp. after working out).

What are the disadvantages of protein supplements?

Cost. Protein supplements have about the same amount of protein per serving as one serving of chicken/tuna/meat. The consumer is not getting same range of other nutrients as

Akron Children's Hospital Sports Medicine Center

Allied Health Rehab Centers
Quality People, Quality Care, Quality Results

CRYSTAL CLINIC

with food. Supplements are loosely regulated. Buyer beware.

What at the side effects of protein supplements?

There are no known side effects when using reasonable amounts. When young athletes are taking too much protein the kidneys (bodies' filtration system) can become overloaded and lead to kidney failure.

How much is too much?

No one is sure and every individual is different.

What is the current medical recommendation?

Protein supplements are an expensive insurance policy. If athletes are taking enough protein in their routine diet the extra (excess) will be excreted (removed) through the kidneys. If athletes overload the kidneys (very rare) they can have kidney failure.

The Injured ACL:Rehab and Prevention

By Scott McMillen, D.P.T.
Allied Health Rehab Centers

Fall is just around the corner and with it comes a new year of school, sports, and if you are a physical therapist, injuries. We can expect a number of knee injuries and many of these will involve the anterior cruciate ligament of the knee, or ACL. It has been estimated that up to 80,000 ACL tears occur in the United States annually, and women will incur this injury at least 2 times more than men, and probably more.

The ACL ligament runs from the top of the tibia (lower leg) to the notch of the femur (upper leg) and acts to stabilize the femur on the tibia, preventing the tibia from rotating and sliding forward during agility, jumping, and deceleration activities. It is often injured or torn when an athlete quickly cuts or pivots in sports such as football, soccer, or basketball. Skiers can tear the ACL if the edge catches and their body turns over the fixed foot. Interestingly, of all ACL injuries reported, about 70% are non-contact injuries. Coaches will tell you that their team's success often depends on their team's health. To this end, preseason programs designed for prevention of ACL injury felt that the most important components in the prevention of ACL injuries are neuromuscular control and proprioception. These are different from pure, brute strength and refer to the ability of one's body to intuitively "know" where the joint is in relation to the body, and for the "correct muscles" to fire at the "correct time" in order to stabilize the knee. This should occur automatically without the athlete thinking. If it does not then it must be "taught" through exercise and training, much like shooting a basketball is taught through training and repetition. Exercises that accomplish this challenge the athlete's balance and coordination and train the entire muscular system surrounding the knee to react appropriately to stabilize the knee, as opposed to strengthening each specific muscle individually.

Results of current programs to decrease the incidence of ACL tears are promising, but injuries still occur. Once the ACL is torn, it does not necessarily have to be repaired. The person who does not have it repaired will need rehab, first to decrease swelling and regain full range of motion in the knee, second to gradually strengthen each of the muscles surrounding the knee, and finally to progress to a program to increase neuromuscular control and stability much like the prevention program described before. The intensity of the stability program depends on the goals of the individual. The athlete trying to return to sports and possibly finish the season would obviously need a more intense program than the person with a desk job who is at best a "weekend warrior." On the other hand, the person who is more than just an occasional athlete and who plays regularly and competitively, or the person whose knee is unstable when performing normal activities such as walking or turning the corner will probably need to have their ACL repaired. After the surgery it is back to rehab which will progress much like the "torn ACL" rehab but slower and more deliberately. Early priorities after repair include pain relief, decreasing swelling and inflammation, and gaining range of motion with slow, easy movements. Typically crutches will be used for a couple of weeks until the person can walk normally without them.

Walking *correctly without limping* is more important than walking without crutches. The program progresses to strengthening. For my patients, I prefer "closed chain" strengthening exercises in which the foot is planted and weight bearing (squats, for example) as opposed to exercises in which the foot is non-weight bearing and free to move in space (knee extensions, for example). Closed chain exercises give the patient more control at the knee and increase muscular strength without placing excess strain on the new ACL graft or overly increasing joint forces and stress at the knee joint and patella (knee cap).

These exercises are also more functional and create a nice segue to more sport specific activities like hopping, agilities, and running. Formal rehab will take 2 to 5 months depending on progress and the patient's goals, but the athlete will have to continue training for up to a year with running beginning at 3 to 4 months post-op. At that point you would be full circle: another fall and another preseason in the preventative program to protect the repair (as well as the unaffected knee) from further incident.

Shoe Selection for the Running Athlete

By Craig B. Sisak, M.S., P.T.
Allied Health Rehab Centers

In the multi-billion dollar shoe industry, marketing focuses primarily on fashion and famous athlete name association, i.e. Jordan, LeBron and Iverson. Although endorsements give the consumer a connection to the shoe and sport, they do not guarantee performance. In order to guarantee performance, several key points need to be identified including purpose of the shoe, sole, construction, uppers and foot type.

Of the many sport shoes on the market, there are only several types of shoes such as cleat, turf, court, cross trainer and running. The important question to ask is for what sport will I be wearing my shoes? Cleat and turf shoes are typically worn on Astroturf and grass surfaces for playing soccer, football, softball and baseball. There are several different types of courts on which athletes play including tennis, racquetball and basketball courts. Racquet sports shoes are typically similar and basketball shoes stand by themselves. Cross trainer shoes are for those who would like to participate in many different physical activities, such as aerobics, walking or weight lifting, and wear only one shoe. Running shoes continue to be an evolving science with several manufacturers developing air chambers, gel cushions and torsion bars to provide cushion or support. The following will take an in depth look at running shoes and how to select the best shoe for you.

In general, running shoes are broken down into three main categories: motion control, stability and cushion. Each has features that help manage the foot when it strikes the ground which include shape, construction, midsole, uppers and outsole. In order to select the correct features for your foot, you should see an experienced shoe fitter or physical therapist to identify your foot type. A footwear recommendation will be made so a correct shoe can be purchased. The shape of a shoe can be straight, curved or semi-curved depending on your foot shape, which will determine an appropriate foundation for your foot. The construction of the shoe can be slip, board or combination to increase rigidity. Midsoles can have a combination of single/double density rubber, EVA and polyurethane to control the amount of pronation that occurs. The uppers can range from very narrow to wide toe box, deep toe box and reinforced/extended heel counter. The ground contact surfaces or outsoles of running shoes can combine rubber, high-density rubber, blown rubber or polyurethane. In addition, other materials and devices have been added to control motion and provide cushion. The following chart will provide information regarding matching foot type with an appropriate shoe type.

\\Foot Type	Shoe Type	Last Shape	Last Construction	Midsole	Stabilization Device
Pronated (flat) Foot	Motion Control Shoe	Straighter	Board/ Combination	EVA/ Polyurethane	Yes
Neutral Foot	Stability Shoe	Semi-curved	Combination/ Slip	EVA/ Polyurethane	No
Supinated (high arched) Foot	Cushioned Shoe	Curved	Slip	EVA/ Polyurethane	No