

By Matt Brzycki
Strength Coach
Princeton University

Rehabilitative Strength Training

As much as coaches prepare their athletes for the rigors of wrestling, injuries sustained during practices and competition are still an unforeseen and inevitable occurrence. A coach may also have wrestlers who have various "non contact" injuries such as tendinitis, bursitis, general soreness or other nagging afflictions. Once an athlete is injured, the injured area is usually treated by one or more qualified sports medicine personnel (i.e. athletic trainers, physical therapists, etc.). In many instances, however, the wrestler eliminates all strength training exercises -- even those that involve uninjured body parts. Discontinuing an entire strength training program or even part of it--isn't desirable, especially during the season. In fact, some research has shown that a muscle begins to lose size and strength if it is not exercised within 48-96 hours of its previous workout. Moreover, the rate of strength loss is most rapid during the first few weeks.

There are several different exercise options and program adjustments that can be used by someone who wants to continue strength training an injured body part. It should be noted that these methods are intended for those injuries that aren't viewed as being very serious or extremely painful. As such, it is recommended that an athlete receive approval from a certified sports medical authority before initiating any rehabilitative strength training.

1. Lighten The Resistance

The first step for someone who wants to continue training an injured body part is to reduce the amount of weight being used. This is usually the easiest and most straightforward recommendation. Let's suppose that a wrestler's patellar tendon hurts when he does a leg extension with his normal training weight. Reducing the amount of weight will produce less stress on his tendon and perhaps allow him to perform the exercise in a pain-free manner. The amount that the weight is reduced will depend upon the extent and the nature of an

individual's injury.

2. Reduce The Speed Of Movement

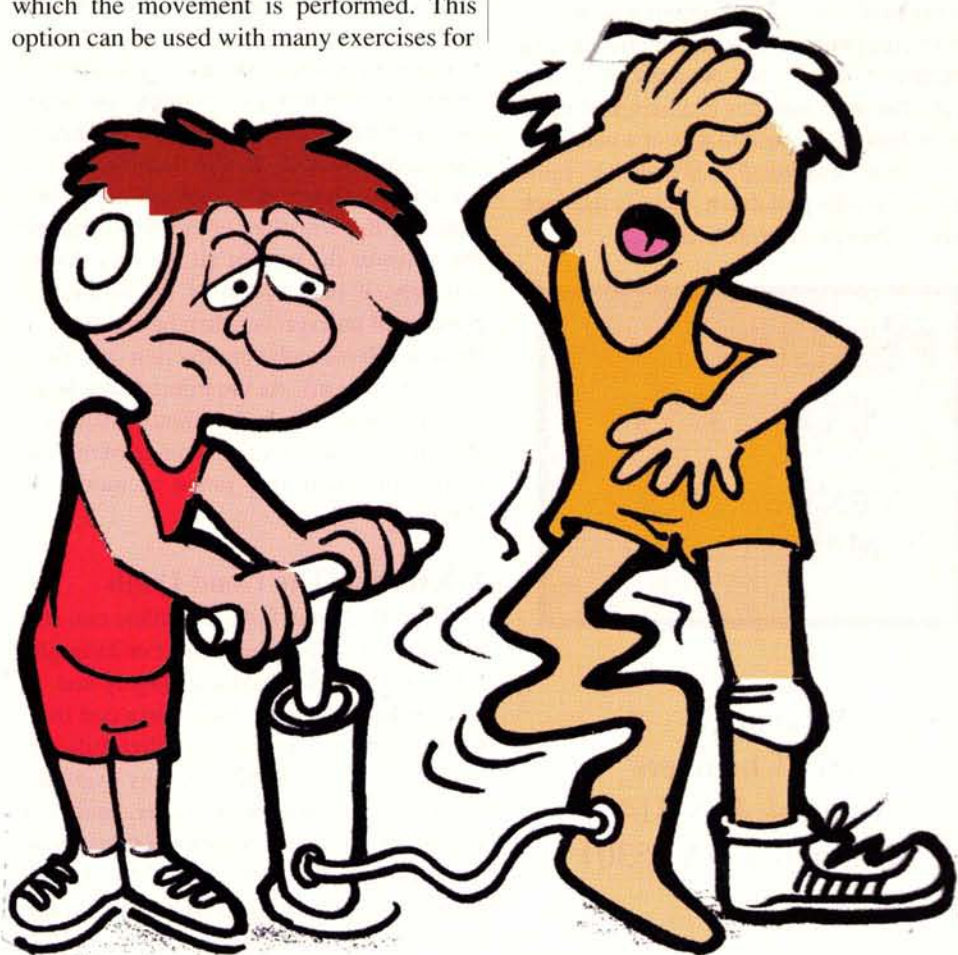
If pain-free exercise is still not possible even after lowering the amount of weight, an athlete's next move would be to slow down the speed of movement. This may involve raising the weight in about 4 - 8 seconds instead of the traditional 1-2 seconds. Reducing the speed of movement will decrease the amount of stress placed on a given joint. Slowing down the speed of movement will also necessitate using a reduced amount of weight thereby reducing the stress even further.

3. Change The Exercise Angle

If pain persists during certain exercises involving an injured body part, another adjustment would be to change the angle at which the movement is performed. This option can be used with many exercises for

the upper body--especially those that involve the shoulder joint. Let's say that you have a wrestler who has slight shoulder pain when he does a regular supine bench press. In some cases, if the angle of the bench is changed to either an incline or a decline there will be less stress on the shoulder joint. Likewise, some people experience pain when performing a shoulder press with the bar positioned behind the head. The pain is usually alleviated when performing a shoulder press with the bar in front of the head.

Another exercise which may exacerbate shoulder pain is a behind-the-neck lat pull down with an overhand grip. Often, the pain is characterized as a tightness or a pinching in the shoulder joint. Generally, the discomfort can be lessened by changing the angle of the pull. This is accomplished by grasping the bar with the palms facing the torso and pulling the bar to the upper chest



instead of behind the neck.

4. Use A Different Grip

In the case of the shoulder joint, many times there is less stress if a different grip is used. Again, let's say that an athlete has slight pain when doing an exercise such as a bench press. It is quite possible that there will be a significant reduction in pain by simply changing the grip from that used with a barbell to a parallel grip using dumbbells. It should be noted that any exercise that can be performed with a barbell can be performed with dumbbells. These exercises include the bench press, incline press, decline press, shoulder press, upright row, shoulder shrug, bent over row, biceps curl and triceps extension. As such, an athlete has an option for varying the grip used in movements for just about every major muscle group in the upper torso.



5. Perform Different Exercises

Yet another option is to perform different exercises that use the same muscle groups. For instance, if a wrestler simply cannot perform a lat pull down without experiencing pain or discomfort then perhaps a different exercise can be prescribed that works the same muscles in a pain-free manner. In this case, a seated row or a bent over row can be substituted to involve the same muscles as a lat pull down, namely the back ("lats"), biceps and forearms.

PUBLICATION CONTEST

ENTRIES DUE
MARCH 1, 1993

Send To
Jerry Chambers
Route 4, Box 314
Washington, PA 15301

6. Limit The Range Of Motion

There is a distinct possibility that pain occurs only at certain points in the range of motion such as the starting or the mid-range position of the movement. In either case, an athlete can restrict that exercise's range of movement. For example, an injury such as a hyper extended elbow or knee is especially painful at the beginning (or stretched position) of a movement. In this instance, the wrestler should be instructed not to lower the weight all the way down; similarly, if pain occurs at the mid-range position of an exercise, then he should stop short of full muscular contraction (e.g. flexion or extension). As the injured area heals over a period of time, the athlete can gradually increase the exercise's range of motion until a full, pain-free range of motion is obtained.

7. Exercise The Good Limb

If all else fails, an athlete can still exercise his unaffected limb. For example, suppose a wrestler had knee surgery and, as a result, his left leg was placed in a cast from the mid-thigh to the ankle. Obviously, he would not be able to perform any exercises below the left hip joint. However, he should still be able to strength train the muscles on the right side of his lower body. As a matter of fact, some research has shown that training one side of the body will actually effect

the muscles on the other side of the body! Researchers aren't exactly sure why this occurs, but the fact of the matter is that it does occur. This phenomenon has been dubbed as "indirect transfer" or "cross transfer."

8. Exercise Unaffected Body parts

This suggestion may seem rather obvious but I've seen enough situations to know that this isn't the case. There's absolutely no reason why an athlete with a knee injury cannot perform exercises for the entire upper torso assuming, of course, that the exercises are done sitting or lying and not standing! Likewise, there's no reason why an athlete with a shoulder injury cannot train the muscles of his lower body.

As a coaches, we have a legal responsibility to ensure the physical preparedness of our teams. In many instances, an injured area or body part can be exercised in a safe, prudent and pain-free manner. This will prevent a significant loss in muscular size and strength. And, even though an athlete may not be able to exercise an injured area due to an unreasonable amount of pain or discomfort, movements can still be performed for uninjured body parts. Remember, it's very important to continue some type of strength training whenever possible --even in the event of an injury. ○