

# STREET

BY: DR PETER

It would not be stretching the truth to say that good flexibility is essential for a martial artist. But stretching has more to offer than just flexibility. Stretching is an important part of both the warm-up and cool-down that should go with every martial arts workout. This article will explain the value of stretching, when and how it is best to do it, the reasons, and we will demonstrate some effective ways to stretch.

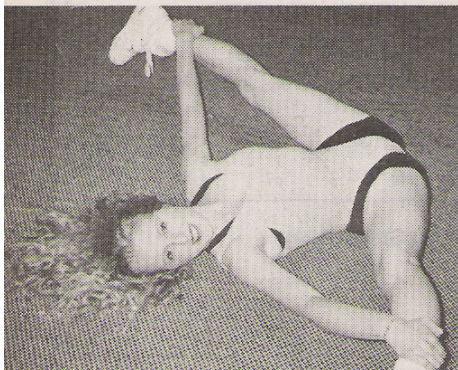
Stretching has three basic goals . . .

1. IMPROVE PERFORMANCE
2. REDUCE INJURIES
3. ACCELERATE RECOVERY

Before we look at these in detail I would like to talk about the relationship between stretching and flexibility.

A common misconception is that if you stretch enough you will eventually be able to do the splits. Unfortunately this is simply not true. There is an absolute limit to how wide the legs will go in a sideways split. For the average person the limit is the flexibility of the adductor muscles. Regular stretching can improve this considerably, but then the law of diminishing returns comes into effect. Dr. Joseph Estwanik from North Carolina has studied this by taking X-rays of martial artists who have been training for more than two years. The X-rays were taken in the full splits position. It looks as if after two years most martial artists are not able to go any wider because they have reached the point where the femur (thigh bone) hits the margin of the acetabulum (hip joint).

Don't despair! The good news is that when we kick, the height of our kick isn't just determined by the flexibility of our adductor muscles, but also by our



This groin stretch can be used also as a P.N.F. stretch.



Groin stretch.

hamstrings and hip flexors. These respond very well to prolonged stretching and there is virtually no limit to their potential for flexibility. Muscle strength and coordination are also important in gaining extra height in our kicks and they certainly can be improved with practice.

Some people are born with a pelvis which allows them a greater potential for doing the splits. Others have tendons and ligaments which are naturally more elastic. These people may display remarkable flexibility even when they are not warmed up. The downside is that they may be more prone to certain injuries i.e. meniscal (cartilage) tears and arthritis. Even those with the worst natural flexibility can still learn to do quite adequate kicks with perseverance and can still become good martial artists by excelling in areas other than high kicks.

## 1. PERFORMANCE

Stretching improves performance in two ways. (A) flexibility & (B) muscle relaxation.

(A) Flexibility is not only important for the legs for high kicks but also is important for posture (hip flexors and calves) and for developing power from rotation of the body (hip flexors, spine and shoulder).

(B) Stretching, as part of a warm-up, helps the muscles to be more relaxed. This means there is less tension or spasm in the muscle so when the muscle has to lengthen suddenly it can do so with less resistance. The movement is faster i.e. if the hamstring is relaxed the quads can contract and straighten the knee faster.

## 2. INJURY REDUCTION

There are several factors which can

contribute to muscle or tendon tears.

A. Pain or spasm in a muscle which can shorten it and reduce its ability to extend rapidly (referred pain from the spine is a common cause of spasm in the muscles of the thigh).

B. Fatigue or exhaustion associated with lack of fitness.

C. Weakness of scar tissue because it hasn't been given enough time or proper treatment to heal.

D. Shortness of a muscle/tendon, which may be due to either inherent lack of flexibility or shortening due to injury and scarring.



Lower back hamstring and calf stretch.

E. Imbalance in the power of agonist and antagonist muscle groups such as frequently occurs between the quadriceps and hamstrings.

F. Inadequate proprioceptive assessment or experience.

Stretching can play a major part in the reduction of injuries from all these causes. Holding a slow sustained stretch for more than fifteen seconds not only works on flexibility but also increases isometric strength. Ballistic stretching helps to develop proprioceptive experience and the

AUSTRALASIAN BLITZ

# CHINING

## LEWIS M.B.B.S.

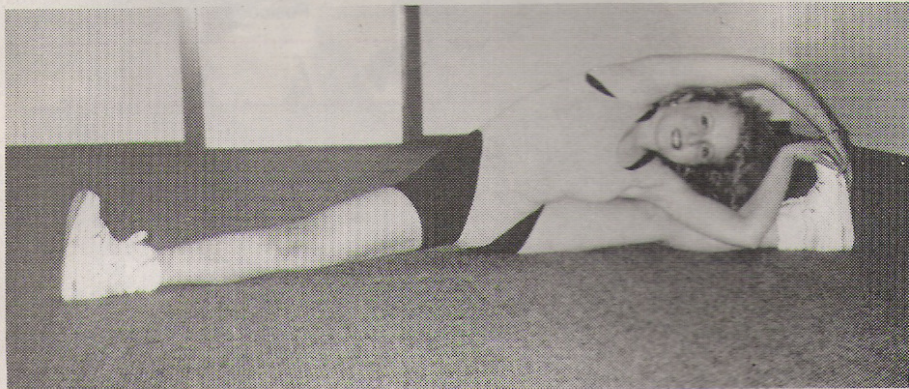
knowledge of how far one can safely move a limb before tearing occurs.

### 3. ACCELERATED RECOVERY

Stretching helps both (A) after a workout as part of the cool-down or (B) after injury.

(A) Stretching helps to relieve the pain in muscles after a workout and may accelerate the removal of lactic acid from the fatigued muscle.

(B) During the healing process new collagen is manufactured within the scar. If the scar is gently stretched while it is healing then the collagen fibres will become orientated along the lines of the stress and the final scar will be much stronger.



A multi purpose stretch — groin, waist and shoulder.

### HOW TO STRETCH

This will vary somewhat with the needs of the individual and the event. General rules are . . .

- A. Stretch before and after training.
- B. Make sure you are warmed up before you stretch. Warm muscles are less likely to tear and can also be stretched further.
- C. Start gently and gradually build up.
- D. Go to the point where you feel a tightness, not pain.
- E. The more often you stretch, the better the results.
- F. Stretch all the muscle groups, don't focus on only one region.
- G. The muscle should be relaxed, not weight bearing i.e. sit or lie down.

### TYPES OF STRETCH

There are four basic types of stretch . . . Static, Passive, P.N.F. (proprioceptive neuromuscular facilitation) and Ballistic.

These can be done either partnered or individually. The advantages of doing it with partners is that sometimes you can get a more effective stretch (especially with P.N.F.), it can be fun, and it helps to build a spirit of team work and co-operation within a club. The disadvantages are that you can get injuries if the students are over keen or too competitive and unless you know some fairly advanced techniques only one of the pair is getting a stretch at any one time.

### STATIC

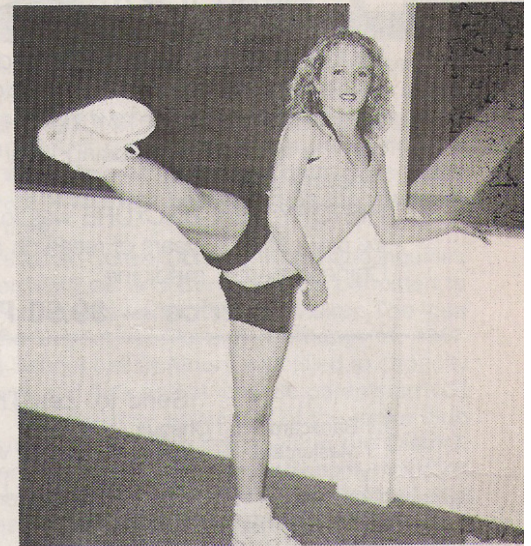
These stretches are done individually. The stretch is usually held for between five and fifteen seconds. It is possible to stretch several muscle groups at the same time with these stretches.

### PASSIVE

These are partnered stretches in which one person lies in the stretched position while the other person gently increases the pressure on the stretch. This must be done slowly and carefully.

### P.N.F.

These are like partnered stretches except that instead of there being a constant pressure the muscle is alternately contracted and relaxed, usually for about five seconds each. The non stretching partner counts to five slowly while the stretcher pushes against them as hard as they can. Then the stretcher relaxes and the stretch is slowly increased until the stretcher says stop. This whole sequence is gone through three times. It produces a great stretch but it takes a lot of time. It is not essential to have a partner to do P.N.F. stretches. you can use a bar,



Ballistic adduction (groin) stretch.

a wall or your arms to provide the resistance.

### BALLISTIC

The word ballistic became unpopular in stretching circles a few years ago because there were some very bad ballistic stretches around. They are useful if they are done in the right way. They should be done as the last part of the warm-up when the muscles/tendons are already warm and stretched. The movement should be smooth and flowing not short or jerky. The last part of the swing should be upwards against gravity to reduce the final strain on the muscle. They are good because they help students to become more aware of their safe range of movement.

### TIPS

Stretching is a good way for students to use their time before the class starts. Even though the instructor may not need to stretch as much as beginners I think it is important for him/her to set an example. Students who are very inflexible can be asked to arrive early to do some extra stretching. They can also be encouraged to stretch whenever they have a spare moment in class.

Questions and suggestions for future topics can be sent to Dr. Peter Lewis c/o Blitz.