



TECHNICAL COLUMN **EXPLORING FLEXIBILITY**

Article by John Swift



Article 1

The physical conditioning aspect of the martial arts is infamous; the attitude, determination, focus and perseverance has been admired by many for years and the enviable speed, strength, flexibility and dexterity seemably incomparable on a number of counts.

Fitness and conditioning in any activity, sport related or not, can be categorised in a number of different ways, for simplicity, and from a variety of sources, I have identified the following components of fitness –

HEALTH Related Components

- Strength
- Flexibility
- Speed
- Muscular endurance
- Body Composition

SKILL Related Components

- Co-ordination
- Balance
- Agility
- Power

Many of the components overlap during training and performance but specific sessions and workouts should be created in order to enable the maximal development of the certain strengths or weaknesses.



For discussion in this article I have chosen the much admired component of leg flexibility!

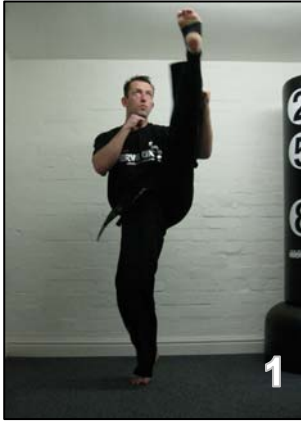
Flexibility can be defined as the 'extent to which a joint can be moved through its normal range of movement'. It goes without saying that by increasing this range of movement performance can be increased and risk of injury reduced. In addition it is also fair to suggest that the more flexible the individual is the more mobile they will be in performance. Further benefits may include greater body awareness and relaxation which ultimately can have implications on skill acquisition and analysis.

The different types of FLEXIBILITY and STRETCHING

Recommendations for stretching change from year to year and even from expert to expert; in brief I have highlighted the following methods and techniques.

1. **Dynamic Flexibility** – involves the dynamic movement of a limb through a specific full range of motion, it can include progression in height and speed.

Example – Photo 1



Straight leg raises – front, side and rear (simulated back kick position).
Knee circles, lunges.

All exercises can be done with or without a chair, wall or punch bag for support and stabilising of movements.

This is a good type of stretch to do daily and also early on during your workout (warm-up) as it should simulate the movements and actions to be later performed in your session hence being quite a sport specific drill. It is unlike static, isometric or PNF stretching as the final end position is not held.

Dynamic stretching is also highly recommended prior to competition or performance rather than the other more intense and tiring forms of flexibility and stretching.

2. **Static Active Flexibility** – this refers to the ability to stretch the antagonist (relaxing) muscle using only the tension in the agonist / prime mover muscle.

Example – Photo 2 and photos in the building strength section highlight this where there is the holding out a specific technique or position.

This form of flexibility requires strength in the opposing muscle group to that being stretched and is an effective way to develop active flexibility, for example whilst throwing out multiple repetitious kicks and being able to hold it out high.



3. **Static Passive Flexibility** - This is a controlled stretch where the individual relaxes into the stretch, holding the position via the weight of their own body, often referred to as relaxed stretching.

Example – Photo 3 and 3/4 - Straddle stretch or free-hanging toe touch

This type of stretch is more frequently described as an intermediate intensity stretch so can be done with most sessions but is suggested at the end of a session and more specifically at the end of one that is focused on stamina or muscular endurance as fatigue can often make it difficult to perform some of the more intense forms of stretching.



4. **Isometric Stretching** – this is a method of stretching whilst the muscles are in contraction and is one of the methods most specific to martial arts kicking (often closely associated with similar static passive flexibility stretches)

For Example – Photo 3/4 and 4

Suspended positions, full weight bearing postures where you squeeze or pinch the floor and upon relaxing you extend the length of the stretch.

A second purpose of isometric stretching is to develop strength in stretched positions but apply with caution as risk of injury is high.

As isometrics are one of the most intense forms of stretching it requires sufficient rest and recovery periods and is not really suitable for those under the age of 18 years (as the body is still developing). Nor is it a suitable stretch during a warm up or prior to a competition or performance, it is ideally done at the end of a strength based session.



Further types of flexibility include –

- **Ballistic** – sometimes compared with dynamics but ballistic stretching uses more of a jerking, bouncing or bobbing motion to increase muscle length. Due to its nature this method can mean the individual is more susceptible to injury.
- **P.N.F.** (proprioceptive neuromuscular facilitation) – this method involves both passive or active techniques in order to promote muscular reciprocal inhibition. Arguably one of the most effective forms of flexibility along with isometrics but can, in most instances, overlap with previous mentioned techniques.

This method can include a ‘hold and relax’ stage, ‘contract and relax’ stage and then a ‘hold and relax with opposing muscle contraction’ phase. The best example is this is that of a partner based stretch against the wall for example pulling your leg to the ground then relax lift the leg and so on. In an individual context it can be delivered with weights for example abductor flies or even a pulley system.



PARTNER STRETCHING – ‘FOR’ or ‘AGAINST’?

Partner based stretching can add variety to your training sessions and routine but the ‘for’s’ and ‘against’s’ of its productiveness can be argued –

For

- Versatility and adaptability
- Peer pressure – push self to maximum
- Adds variety to your stretching programme / regime

Against

- Partner does not feel what you feel
- Requires trust and co-ordination
- Peer pressure – push too far
- Holder neither rests or stretches

Whether or not you are for or against partner based stretching, always approach its practise with caution.

BUILDING LEG STRENGTH AND FLEXIBILITY

The development of martial arts related flexibility and ultimately kicking ability will be dependent on the suitable development of leg strength. There are numerous exercises and drills for developing leg strength which will help directly improve flexibility, here are just a couple of them.



Holding out kicks (Static Active Flexibility)

The photos show a front and side kick, where the aim is to maintain good body posture and position whilst the leg is held out straight for a specified time.

Obviously do not expect to attain the same height and stretch on kicks as when a kick is thrown out more dynamic natural way but progress will be made with time. Depending on your capability ankle weights can be introduced.

The opposite and alternative for this drill is to pull the leg downwards, rather than attempt to lift it up. This can be done via a 'pulley' system, partner or even isometric style floor squeezes. Again this encroaches on P.N.F. style training.

'Pump' kicks (part dynamic and part static active flexibility)

The photos on the right show a knee chamber which quickly accelerates to a turning kick and should then return to the exact same position. The firing out of multiple, repetitious kicks from the same knee chamber maximising height of strike during delivery will assist in strength and of course allow for the development of a larger range of movement and flexibility.

The same can obviously be done for front kicks and side kicks, and can be delivered in several sets of 10 - 25 repetitions with your weaker leg kicking first.



A good variation of the previous two drills is to almost combine them – known as a 'pulse' kick. With the leg locked out raise and lower the leg no more than 6 inches from your maximum height, a number of muscle groups will benefit from this drill, set realistic heights and number of reps and of course make sure to stretch afterwards!



Tips for developing your flexibility

- Always try and develop all round, balanced strength and flexibility working specific sets in specific workouts. Most commonly forgotten is the lower back, abs, gluts and hips.
- Relax – whilst stretching greater levels of flexibility will be attained through relaxation and control.
- Little but often, like any other body conditioning programme, flexibility requires routine and regularity so ensure you persevere

- Just like muscular development, rest and proper nutrition is essential.
- Set achievable goals, for example toe touch before a leg split and so on.

Finally, as with all aspects of martial arts training don't be in too much of a hurry to achieve the end result as understanding the basics and mechanics as well as ensuring correct technique will maximise results.

John has Taekwondo and Kickboxing schools in the Worcestershire and Bromsgrove District areas as well as affiliated clubs all over the UK, for more information feel free to contact him via email on info@vervemartialarts.co.uk or telephone 01562 827437. Alternatively visit his website at www.vervemartialarts.co.uk.