

EKGB



A
GUIDE
TO
WARM-UP
STRETCHING
MOBILITY
AND
CONDITIONING
EXERCISES
FOR
KARATEKA



As compiled by the English Karate Governing Body

A Guide To Warm-Up, Stretching, Mobility And Conditioning

Exercises For Karateka

This document was compiled by the E.K.G.B. with the advice of the following Medical Advisers.

Mr. Brad Williamson MB , ChB , FRCS Senior Lecturer in Orthopaedic Surgery University of Manchester , Consultant Spinal Surgeon to the Hope Hospital , Salford and to the Manchester Children's Hospitals. Recently returned from an International Spinal Workshop in America, where he was demonstrating spinal surgical techniques to 50 of the worlds leading surgeons. Brad trained in Karate for nearly 10 years and his 8 year old son has been training for about 2 years.

Ivan Birch BSc, Joint Honours in Science (Zoology / Geography)

MSc Human Biology Senior Lecturer University of Brighton Department of Podiatry. His research involves an investigation into the use of a force measuring system as a means of detection of the sub-clinical symptoms of Parkinson Disease. He is a consultant Bio mechanist to Slough Sports Injuries Clinic. Ivan is a 3rd. Dan his wife a 1st. Dan and his two sons 1st. Kyu and 3rd. Kyu respectively.

Ann Thompson MCSP SRP Ann has been involved in the treatment of sports injuries for over 20 years. She qualified in 1972 as a Chartered Physiotherapist at the Royal Army Hospital in Woolwich, and worked for three years (1976 / 79) at Farnham Park Rehabilitation Centre, which was famous for the rehabilitation of top international athletes. Ann was a founder member and is now the Head of Slough Sports injuries Clinic where she treats and advises athletes from a wide variety of sports activities, including the Wasps Rugby Team and the Jets Ice-Hockey team and the local Karateka.

The illustrations, which capture so well the positions and postures, and with which Karateka can therefore readily identify, were kindly provided by Bryan Evans 3rd. Dan, of Clevedon Karate Club, Avon.

A Guide To Warm-Up, Stretching, Mobility And Conditioning

Exercises For Karateka

Introduction

This document has been produced as part of the E.K.G.B. Instructor Guide-lines, as a guide to exercises for warming up, stretching. Mobility, conditioning and warming down for Karate training.

The need for such a document has been apparent for a long time. Karate is physically very demanding and it is necessary to prepare the body to prevent injury and to maximise performance. Structured Karate-specific exercise routines have existed for many years, but some of the exercises have been labelled as potentially dangerous and concern has been expressed about their long term effect, especially since there are now so many children involved. However, the source of such information was often obscure or ill-informed.

Those involved in the preparation of this document were unanimous in stating that there is little danger if the exercises shown are performed sensibly - in fact these exercises allow the much safer performance of the Karate techniques.

The document was developed through the consultation of Senior English Karateka with a number of medical and physiology experts, some of whom practice or have practiced Karate. They used as a basis some traditional Karate exercise routines, but viewed them in terms of current medical and bio-mechanical knowledge. It is interesting to note that all of the experts involved agreed that the traditional routines were very good, a view supported by their experience in the treatment of sports injuries, which showed that Karateka have a very good record.

The only concerns were:

- 1/ that some of the exercises were unnecessary and only served to make the performer 'feel good', (which is no problem if your prepared to spend the time), and
- 2/ that using a partner to assist in stretching could be dangerous and was best avoided.

Cont

It is accepted that the warm-up and preparation time can vary greatly from person to person, and from situation to situation. Experienced practitioners may develop their own routine with which they are comfortable and which is perfectly safe. They may pay more attention to a particular part of the warm-up or body area, and with experience and common sense this will be safe and acceptable. Many experienced Karateka will combine the warm-up and stretch by doing the actual Karate techniques in a light and careful way - for example by performing one or more Kata with gentle and stretched out techniques.

However, a structured exercise routine prior to Karate training prepares the students mentally for the class, and this is a valuable function which is sometimes underestimated.

It is important to warm-down at the end of strenuous exercise. It is much better for the cardiovascular system to ease off slowly and it helps to dissipate the lactic acid from joints which reduces stiffness and soreness. This in practice means a few minutes of light activity, using a selection of exercises from the war-up and stretching sections.

This document is divided into three main sections. Each section is prefaced with notes.

Section 1 - Shows a selection of warm-up exercises

Section 2 - Deals with stretching exercises

Section 3 - Shows a selection of conditioning exercises

It will still be difficult to remove prejudices that have existed for quite some time. What should be considered very carefully by those who hold these prejudices, is the calibre of those who have been consulted in the process of generating this document. Their CVs are given overleaf. Please note the willingness of the Medical Advisers to endorse these exercises knowing they will be taught to children.

A Guide to Warm-Up, Stretching, Mobility and Conditioning

Exercises for Karateka

Section 1

Warm-Up

The term 'warm-up' is often used to describe all the activity which takes place prior to the actual Karate training. Here, the term describes specifically the process of increasing the blood circulation prior to stretching. Sustained light exercise increases the blood flow to the working muscles and surrounding areas - an increased blood supply brings more heat which makes the muscles and soft tissues more elastic and therefore less prone to injury. It also brings more oxygen and nutrients and switches the metabolism to a more efficient system of generating the amount of energy which is required for a period of intense and dynamic activity.

In anatomical terms, a warm-up is the use of major muscles to pump a faster supply of blood to all the skeletal muscles and surrounding soft tissues. At rest, the heart will supply all muscles and organs with sufficient blood to allow them to function. Too violent a change in the workload can catch the system unprepared and there is then a much greater potential for injury and much less a potential for efficiency.

In practice a warm-up should consist of gentle and sustained working of muscles. A gentle jog around the dojo for 3 to 4 minutes is fine, as is gently bouncing on the spot. Both use the calf muscles as the main 'pump' but the shoulders and arms and many other muscles will also come into play. Such exercises are referred to as aerobic, because they demand oxygen for the blood.

A variety of aerobic exercises are given in the following illustrations –

Again it must be emphasised that at this stage movements should be gentle and controlled, not violent.

An alternative to aerobic exercises might be the simple act of moving the body into different positions, especially if this involves moving to and from the floor. This will eventually warm the body, but will take longer and may not be sufficient if the dojo is not warm enough.

If it is particularly cold, it might be necessary to 'top up' the warm-up, perhaps mid-way through and at the end of the stretching.

A Guide to Warm-Up, Stretching, Mobility and Conditioning

Exercises For Karateka

Section 2

Stretching and Mobility Exercises

Stretched muscles and mobile joints not only help prevent injury, but allow greater reach and speed. The exercises shown have been traditionally used by Karateka and most will be readily recognised. Many of them imitate actual Karate techniques. As was stated in the introduction, these exercises serve the purpose for which they were designed and evolved admirably, as long as they are done without violent bouncing, with control and without forcing joints out of their natural line and range of movement. Light bouncing may be used, but this will warm-up rather than stretch the muscle area.

The best results are obtained when a muscle is stretched to a degree where it feels uncomfortable but not painful. This stretch should be held for about 10 seconds and then the muscle should be relaxed. This process should be repeated 3-4 times.

If the stretch does become too painful, the muscle will tighten to resist over-stretching and damage, and the process becomes self-defeating.

An alternative process is to use a technique known as PNF. In this process the same uncomfortable stretch position should be reached, but then the stretched muscle should be firmly tensed for about 8 seconds. Immediately the muscle is relaxed, it will be possible to move deeper into the stretch.

It is best to stretch at least a little every day and comprehensively 2-3 times per week.

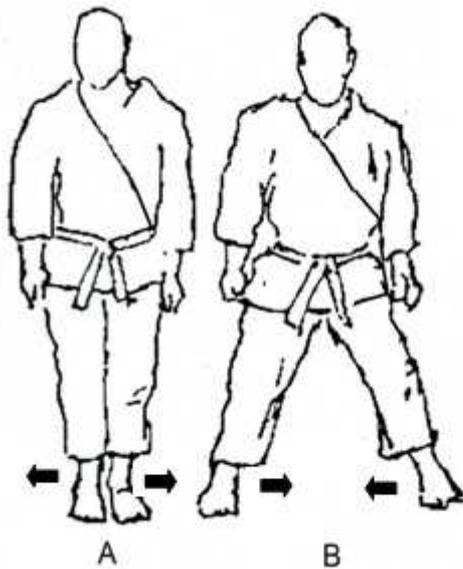
An Instructor should watch to see that students do not modify an exercise in such a way that it becomes less effective or unsafe. Particular attention should be paid to the effect of any modification to the joints.

The illustrations are mostly self explanatory, but mention is occasionally made of the main muscles or joints benefiting from each particular exercise. Generally non-medical terms are used to describe parts of the anatomy - we can all recognise the term ham string, but Biceps Femoris??

WARM UP



1. Bounce on spot



2. Leg open/close, Jump from position A) to position B) and return Repeat continuously



3. Arms with legs
Co-ordinate arms with same leg. Movement as previous exercise — i.e.: Arms are raised as legs are opened. Arms drop as legs are closed



4. Forward/Back on the spot Alternate legs (striding)

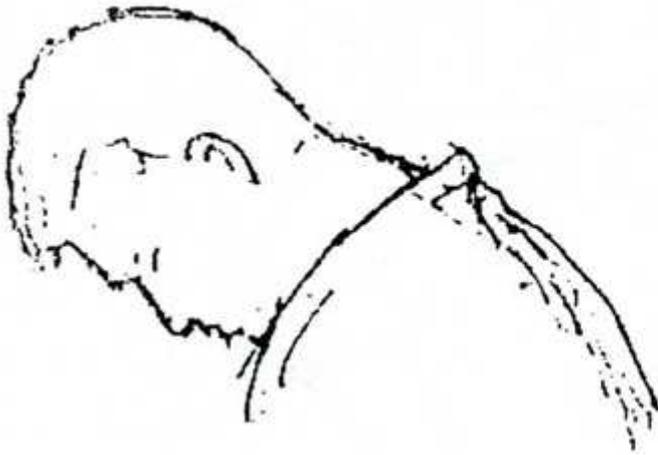
OR



5. Free-style bounce Move around freely change sides

STRETCHING / MOBILITY

NECK



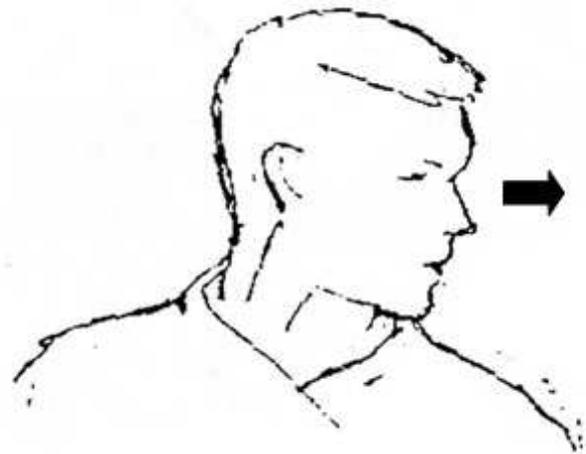
1 Forward



2 Back



3. Side – Ear towards Shoulder -
Repeat other side



4. Twist – Repeat other side



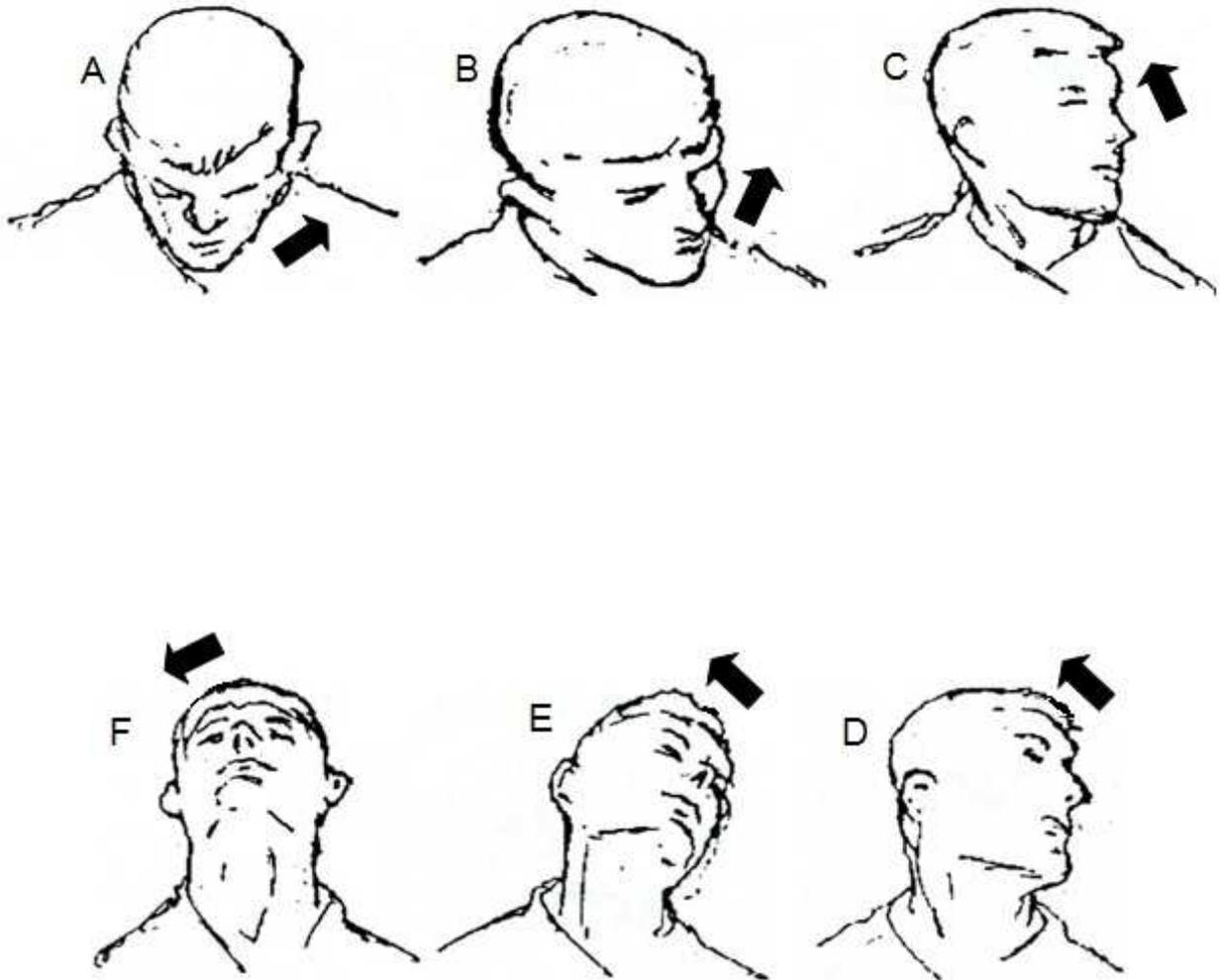
DIAGONAL MOVEMENT

Look to top corner — move head diagonally
so that chin approaches opposite shoulder and return.
Repeat other side

STRETCHING / MOBILITY

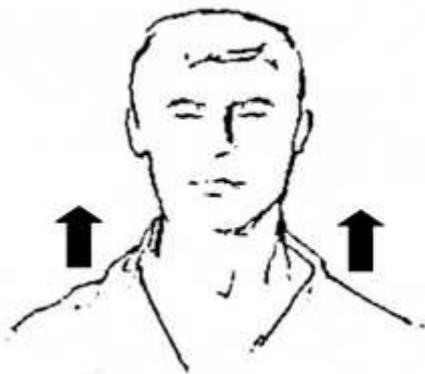
NECK (continued)

NECK ROLL

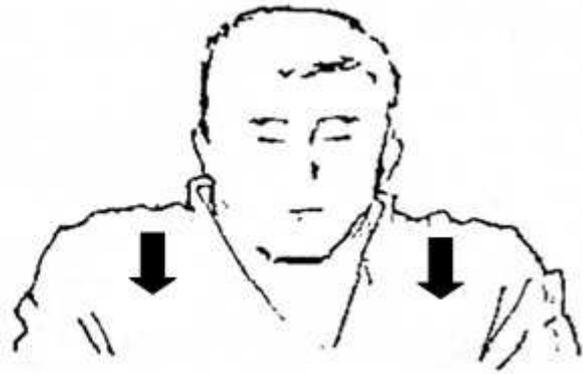


Roll neck smoothly, keeping head close to chest, shoulder and spine throughout rotation

SHOULDERS/ARMS/CHEST



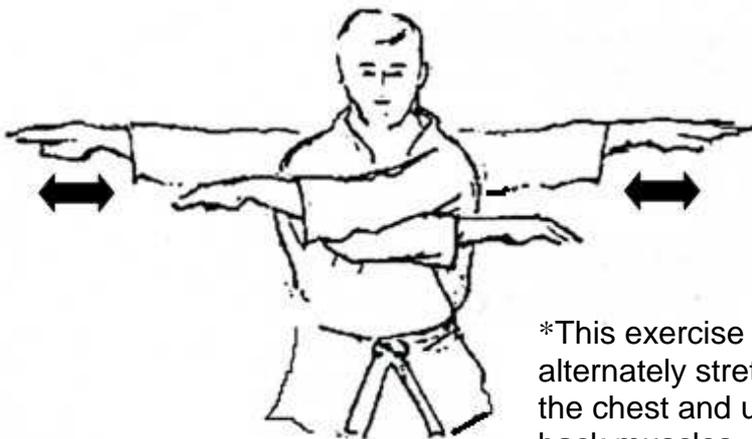
1 Shrugging a) Lift the Shoulders



b) Then press them down

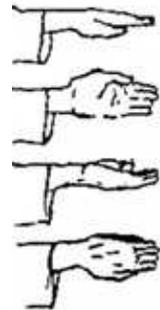


2. Rotating the shoulders (arm circles) forward and back



*This exercise alternately stretches the chest and upper back muscles

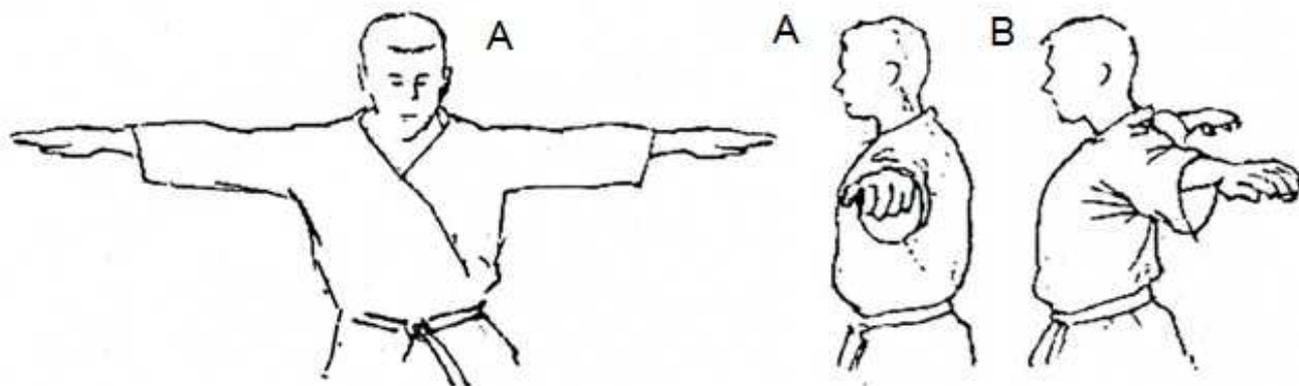
Rotate wrists of both arms to produce a slightly different stretch with each swing



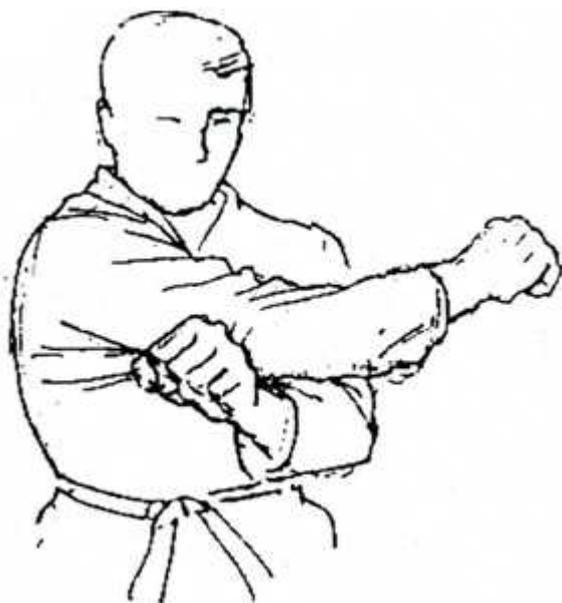
3. Arms swings to sides —start with arms across chest — move arms out and back in line with shoulders

STRETCHING / MOBILITY

SHOULDERS/ARMS/CHEST (continued)



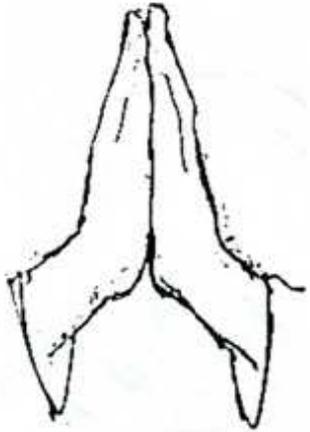
4. As an additional or alternative exercise to the previous exercise, begin by lifting the arms to the sides and keeping the up pull both arms back as far as possible and (hold for 5-6 seconds) This has a strengthening as well as a stretching effect.



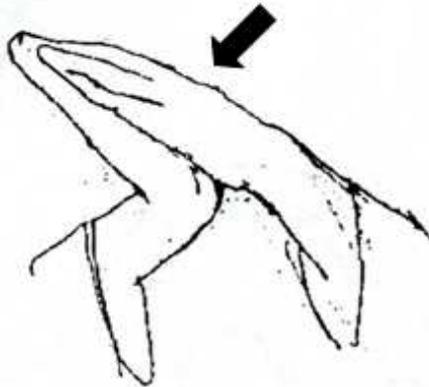
5. Triceps (back of upper arm) and shoulder stretch. use opposite hand to pull arm as far across chest as possible. Repeat other side (hold for 5-6 seconds)

STRETCHING / MOBILITY

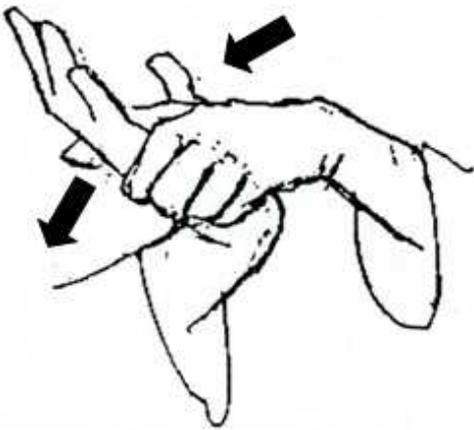
WRIST/HANDS



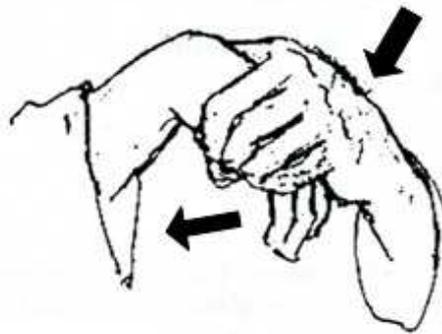
A Begin in Praying Position



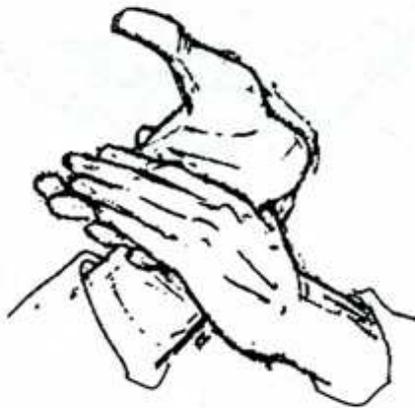
Alternately press one hand
Against other as far as possible



Grasp one hand — push back
of hand towards forearm.

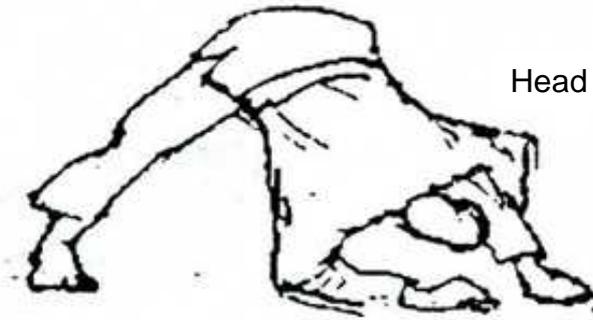


Change grip -- bend wrist
push palm towards forearm

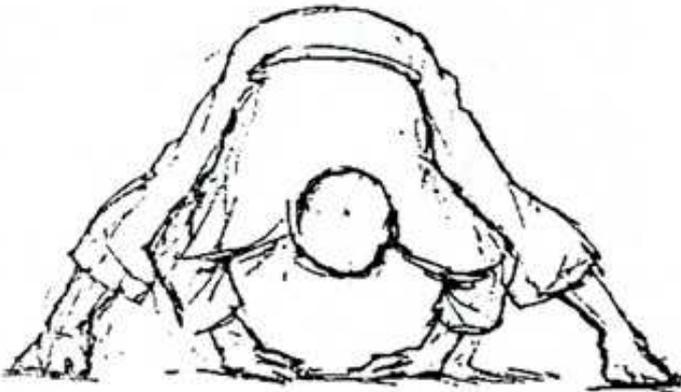


STRETCHING / MOBILITY

TRUNK



Head to Knee



Bending forward from the waist
knees slightly bent
Use hands for support

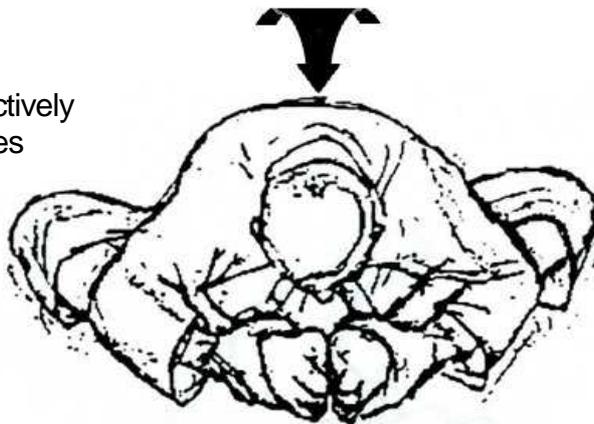


Clasp Elbows

* This exercise also stretches hamstrings (Biceps Femoris)

(It is believed that this position primarily works the hamstrings with any effect on the trunk being secondary)

This exercise more effectively isolates the back muscles



Rather than allowing gravity to pull down the trunk as in previous exercise — this exercise allows YOU to keep control depending on how hard you pull down.

One suggests that it could be incorporated into the exercises to be performed on the floor - The obvious place being as an addition to exercise NO:7 on page 20

STRETCHING / MOBILITY

TRUNK (continued)

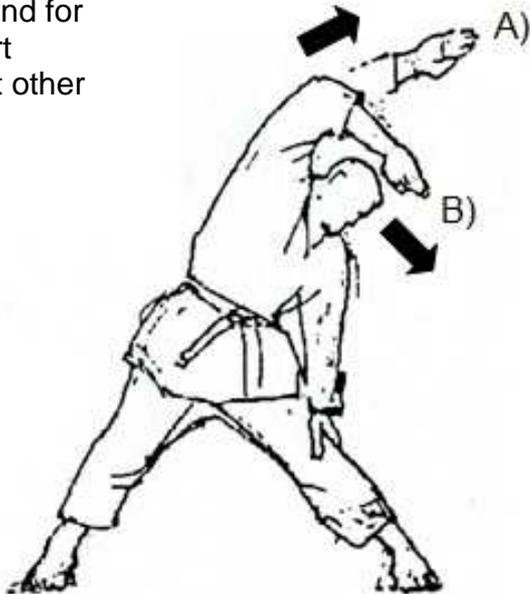
Leaning Back, Legs Straight
Supported by hand on Hips
To avoid back strain

Keep Chin on Chest or look back

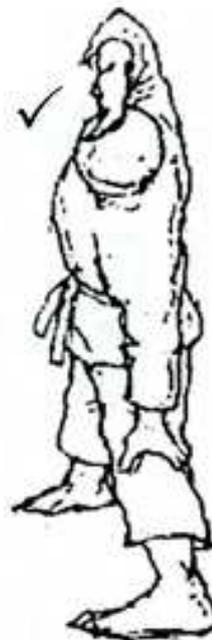


SIDE STRETCH

Lean to side
Use hand for
Support
Repeat other
side



A) Reach to top corner
B) Point fingers towards
opposite shoulder

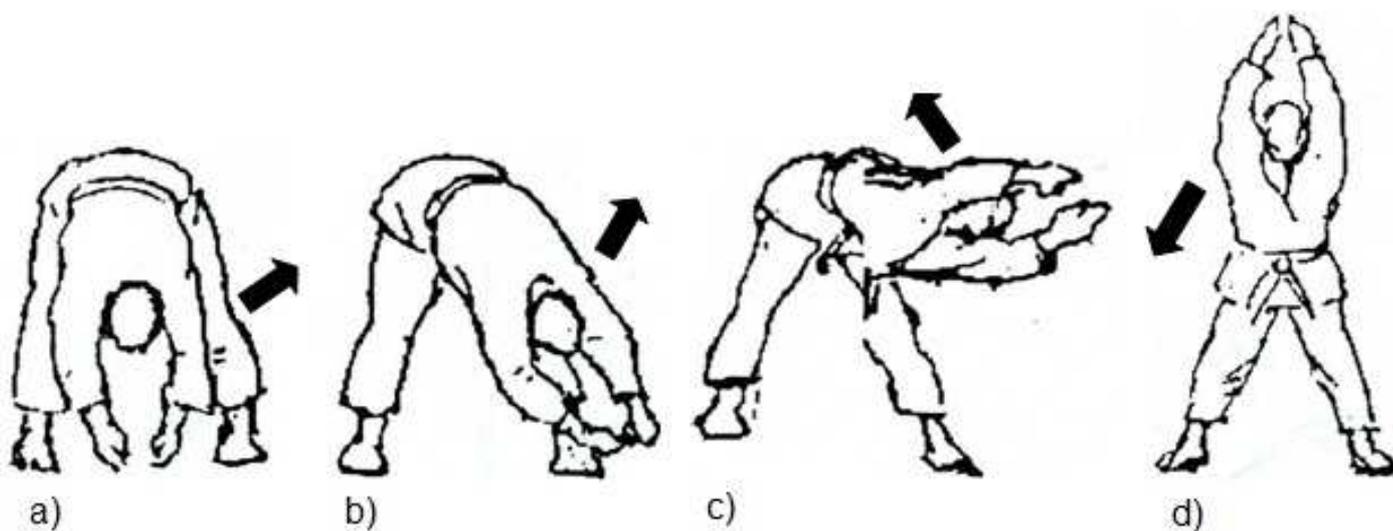


Bend directly to the
side – not forward

STRETCHING / MOBILITY

TRUNK (continued)

4. Rotate trunk as far as possible to one side
And then the other.
(Twist, do not lean or Dip)



5. TRUNK CIRCLES

Start by hanging loosely forwards — arms extended towards floor, Take arms to side and up and around in continuous smooth movement.

Position d) illustrates half-way position — continue until posture again assumes a).

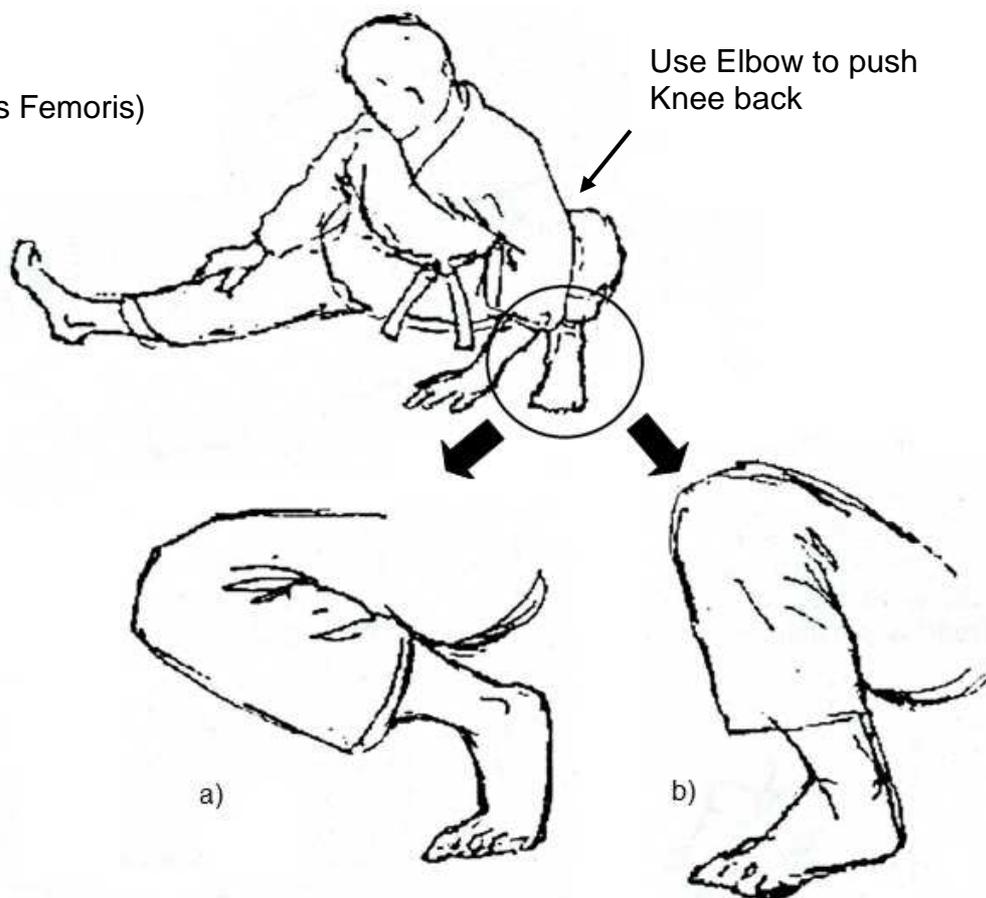
(THIS EXERCISE SHOULD BE PERFORMED IN BOTH DIRECTIONS)

STRETCHING / MOBILITY

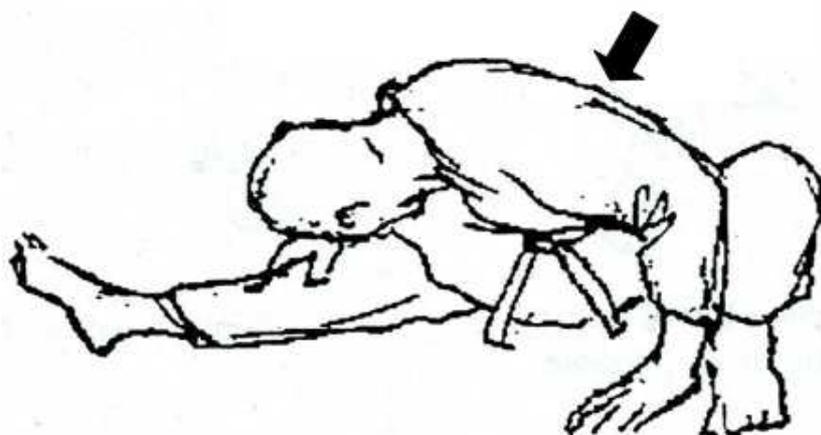
HIP/LEGS/FEET

1. STRADDLE

Groin (Adductors)
Hamstring (Biceps Femoris)



Changing from the ball of the foot to
The heel will slightly alter the stretch

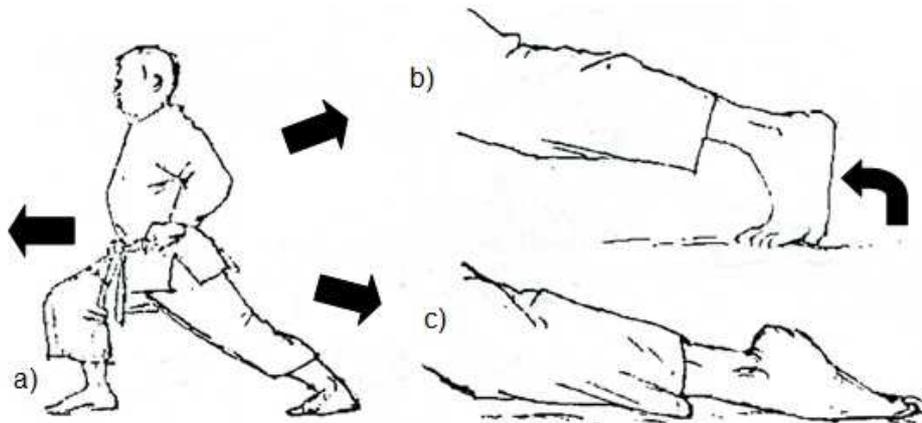


Bend from waist and try and get chest on the
thigh (Heel of opposite foot raised). Increased
stretch to hamstring — Repeat other side.

STRETCHING / MOBILITY

HIPS/LEGS/FEET

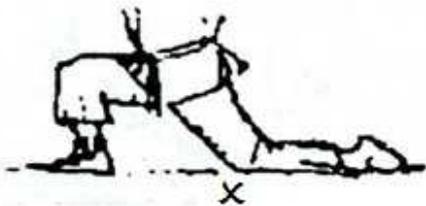
2. ZENKUTSU DACHI



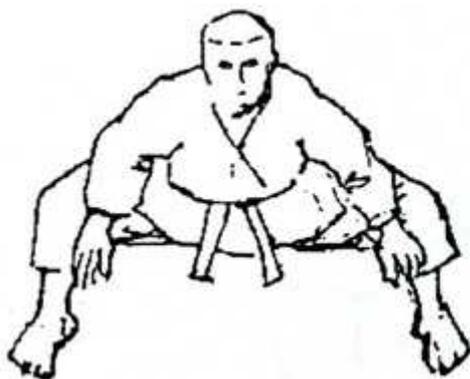
a) Hands on hips — push forward
Front knee should be above toes.
Rear foot should be twisted as
much to the front —
hips square

b) Next — raise heel of trailing foot
— push stance lower.- Maintain
straight back — do not lean forward

c) Next — point toes back, rest on instep
Note: Knee should not rest on floor Try to
straighten leg to effect stretch to front of
thigh (Quadriceps)

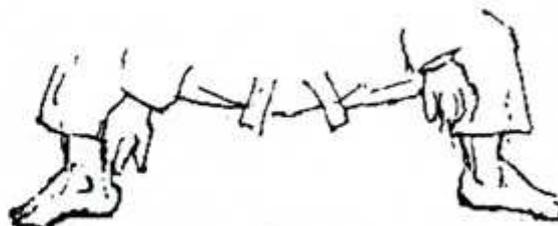


3. KIBA_DACHI



Use elbows to lever knees apart
Lower hips as much as possible

4. SHIKO DACHI

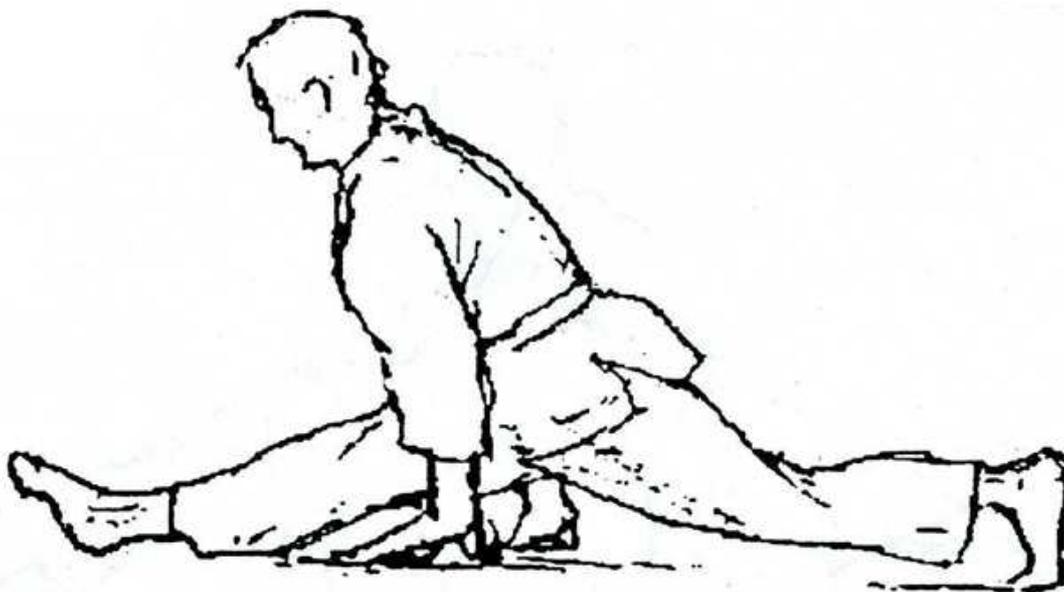


Same position except turn toes out

STRETCHING / MOBILITY

HIPS/LEGS/FEET (Continued)

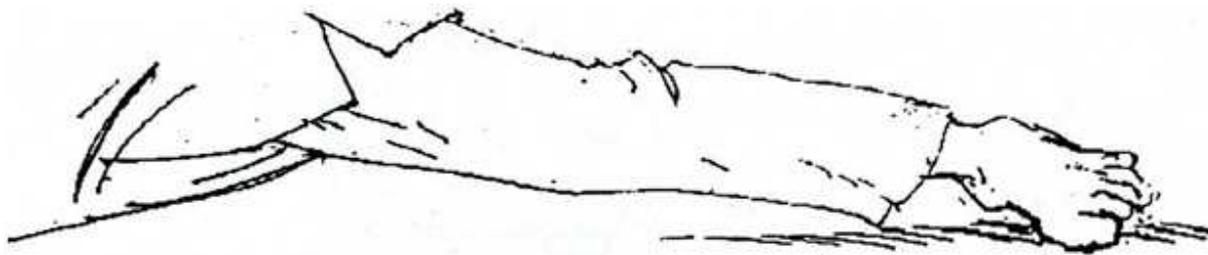
5. FRONT SPLIT



Both hands on floor, spread legs. begin with rear heel raised and lower as far as possible. Attempt to straighten rear leg — do not put knee on floor. Repeat other side.



The extreme position which few can achieve. hips square to the front. Front leg hamstring resting on floor — Quadriceps to trailing leg resting on floor.

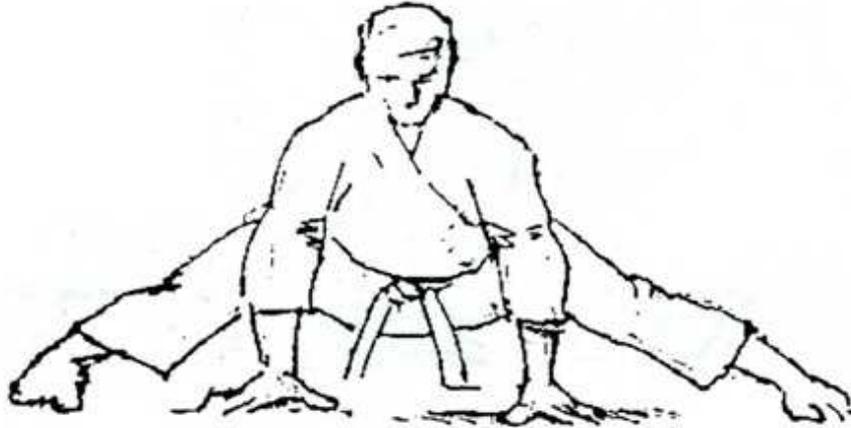


Turning the foot out may put undue pressure on the knee. It also changes the stretch from the back of the leg to the inside of the leg.

STRETCHING / MOBILITY

HIPS/LEGS/FEET (Continued)

6. BOX OR SIDE SPLITS



a) Put hands on floor for support — spread legs



b) This will strengthen rather than stretch, as relaxing the muscles will put undue strain on the inside of the knee



c) The extreme position which few can achieve

STRETCHING / MOBILITY

HIPS/LEGS/FEET (Continued)

d) Sit on floor with legs as far as possible.
Hands in front on floor
Slide forward, try and get Chest to floor



1) Also head to knee



7. Feet to groin, use elbows
To push knees down

a)



Straighten one leg, grasp ankle
Or foot and pull chest down.
Try to keep bent knee down.
Repeat other side

b)



Support the knee with one hand
And lift the foot as high as possible.
Repeat other side.
(good for Name-Ashi)

c)



STRETCHING / MOBILITY

HIPS/LEGS/FEET (Continued)

8 Legs together bend
Forward. Hamstrings
/calfs



9. CROSSOVER

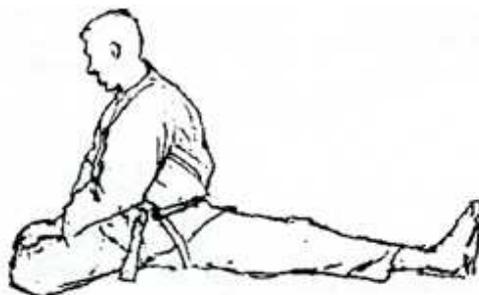
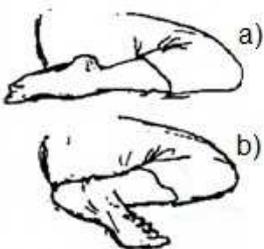
a) Push knee across with
opposite arm twist
trunk in opposite direction.
Repeat other side.



b) Crossover as before but
pull other leg in so that
heel approaches buttock



10 HURDLE STRETCH (i) Twist behind



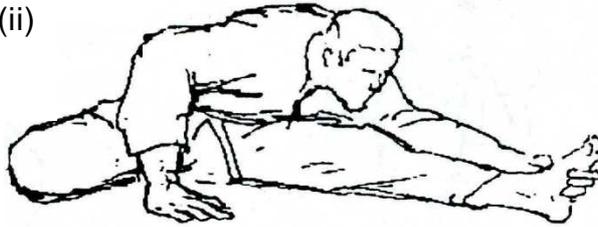
This exercise can be done with the back foot in position
a) or b), though position b) might cause discomfort to
the rear knee – if so, do not force

STRETCHING / MOBILITY

HIPS/LEGS/FEET (Continued)

11. HURDLE STRETCH (ii)

Bend forward.
Repeat other side



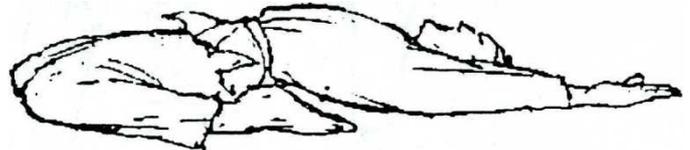
a) Sit on insteps



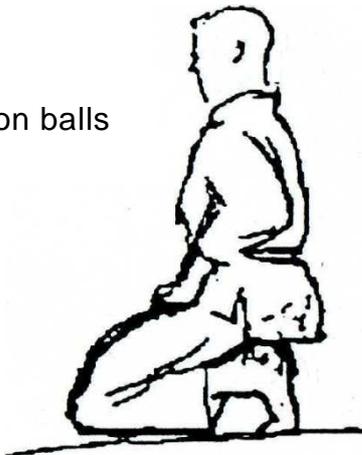
b) If flexibility permits
- lean back – support
with elbows or hands



c) Extreme Position



d) Sit on balls
of feet



e) Hands behind
leaning back



STRETCHING / MOBILITY

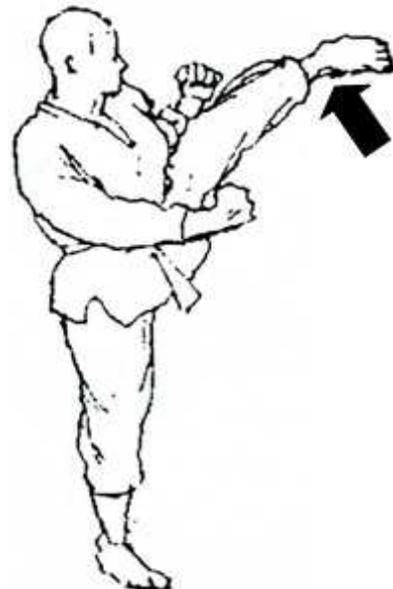
HIPS/LEGS/FEET (Continued)

12. As on page (10) Swing Arms

13 Leg Swings

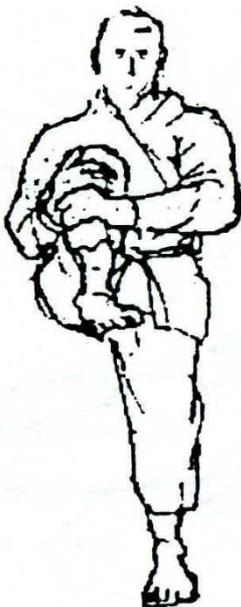


a) Front



b) Side

14. Lift Knee



a) Front (Pull to Chest)



b) Pull to side



c) Grasp ankle and knee -
Change to Mawashi Type
action

STRETCHING / MOBILITY

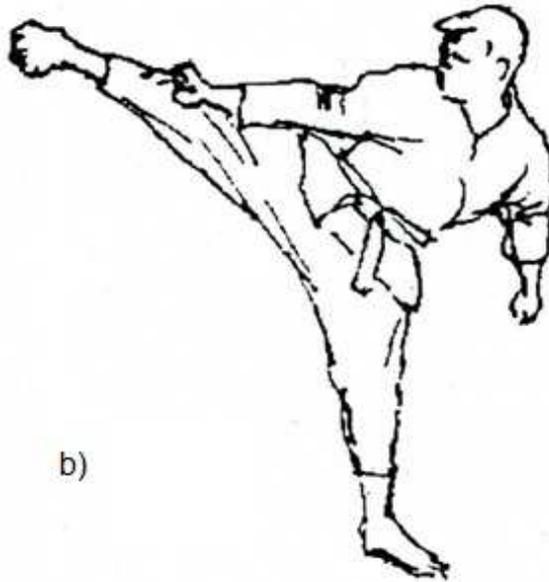
HIPS/LEGS/FEET (Continued)

14. Lift Knee Cont.

d) Grasp ankle, take foot back and up – lean slightly forward for balance



a)



b)



c)

15. Grasp trouser leg and lift as high as possible maintaining balance –
To a) front, b) side and c) behind

A GUIDE TO WARM-UP, STRETCHING, MOBILITY & CONDITIONING EXERCISES FOR KARATEKA

Section 3

Conditioning Exercises

Karateka will benefit by supplementing their Karate training with general fitness training.

for example:

endurance (cycling, running, jogging, swimming, rowing)

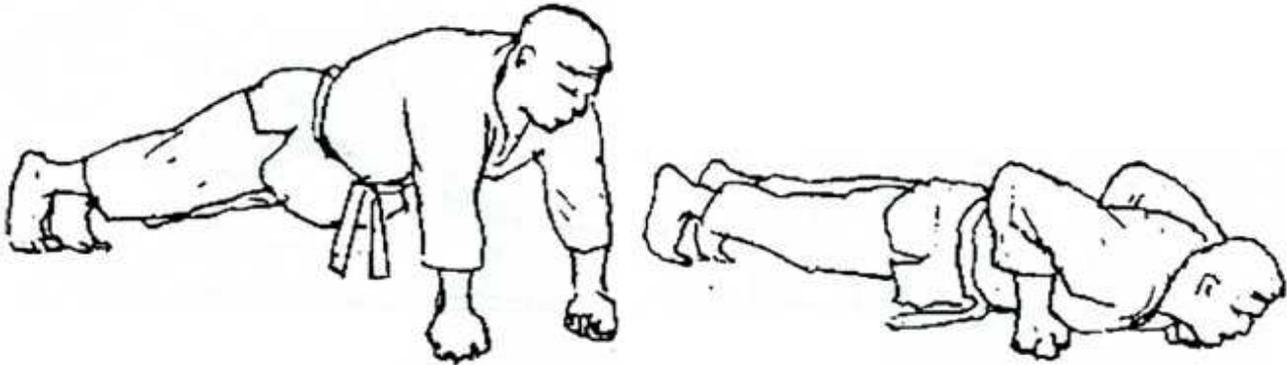
speed (sprinting)

strength (weights, general resistance)

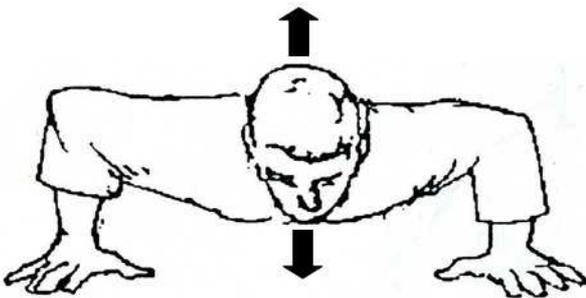
Most of the above activities are self-explanatory. This section is meant as a guide for exercises to strengthen the major muscle groups in the legs, arms and torso.

STRENGTHENING / CONDITIONING EXERCISES

1. PUSH UPS



Push-ups for adults can be done on knuckles or flats of hands.
Children must not do knuckle push-ups.
Allow elbows to brush sides as body is lowered and raised.



Variation: Hands positioned further apart to stretch chest. As body is lowered, also emphasises triceps rather than legs than previous example. Hands (palms) flat on floor.

* Persons with weaker upper body strength can start with knee also on the floor

2. SIT-UPS

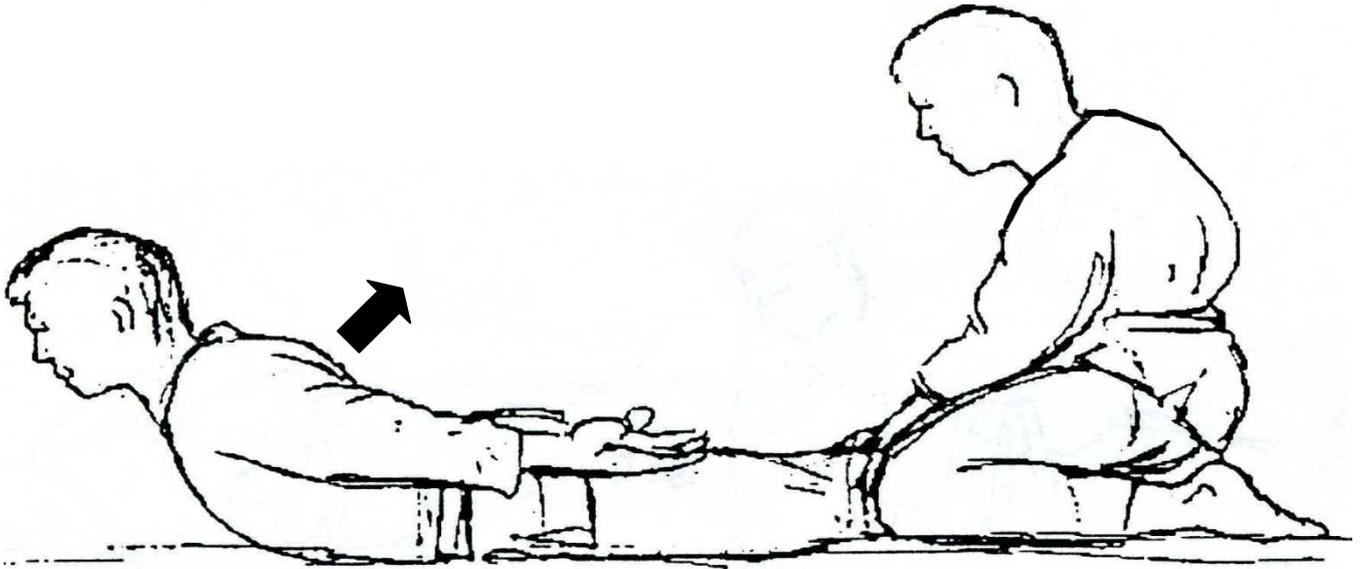
Knee bent soles flat on floor. Arms crossed at chest, or hands held by temple. Do not arch back.

Feet can be secured under object or held by partner



STRENGTHENING / CONDITIONING EXERCISES

1. BACK RAISES



Front lying. Feet secured place back of hands on thighs. Raise chest off floor as high as possible. Can be held statically for a count or done as repetitions.

4. SQUATS

Using a wall as support — slowly lower body by bending knee until they form a right angle. Push up until legs are almost locked-out. Repeat

