

DANGERS OF DOUBLE LEG RAISING FROM SUPINE POSITION

From "ATHLETIC ABILITY AND THE ANATOMY OF MOTION" by Rolf Wirhed
(Wolfe Medical Publications)

The haunch muscle (iliacus) and the great lumbar muscle (psoas major) are responsible for powerful flexion at the hip joint.

When these two muscles contract, the legs are brought towards the trunk (or trunk towards legs).

Exercises which require a person to lift straight legs should only be undertaken if the abdominal muscles are capable of stabilising the back.

From "SIMPLE MOVEMENT" by Laura Mitchell and Barbara Dale
(John Murray)
DOUBLE LEG RAISING

As this exercise is so often advocated for strengthening the tummy muscles, let us go through it in detail, to see why it is not a good idea to perform it, especially for women.

The person lies on the ground and is told to lift both legs, keeping the knees straight and moving from the hips. The working muscles are the flexors of the hips. These muscles are always fairly strong already as they are used in every step one takes.

People are apt to think they are simply lifting the weight of their legs, but do remember that every action is governed by the laws of gravity and leverage, in this case third-class leverage.

The flexor muscles are working against the weight of the leg multiplied by the length of the leg. This is about 80-85 cms.

The length of the lever by which the flexors' power is multiplied is only the distance from the hip joint to the upper part of the femur on the inside (smaller trochanter) to which they attach. This is about 3-5cms. They are therefore working at a great leverage disadvantage.

What is called reciprocal relaxation always takes place in any muscular performance, therefore the extensors of the hips (buttock muscles) are relaxed by the central nervous system, while the flexors are working. The buttock muscles are heavily endowed with fat, so no woman wants to make these muscles more relaxed, instead she wants to tighten them up and get rid of the surrounding fat.

So now we have this colossal amount of work given to the flexors to do and to the same extent we have weakened the extensors.

Remember the plus pressure always present within the abdominal pelvic cavity. The flexors of the hips are attached above to the vertebrae of the low back as well as inside the pelvis, and below near the top end of the thigh bone. As these muscles are having so much difficulty raising the long and heavy legs, the upper end pulls the vertebrae forwards and rolls the pelvis downwards and forwards. This stretches the lower attachments of the abdominal muscles.

You may have noticed, if you have attempted to do this exercise, that your lower back comes off the floor: you hollow your back.

Even though your teacher tells you not to do so, you cannot help it.

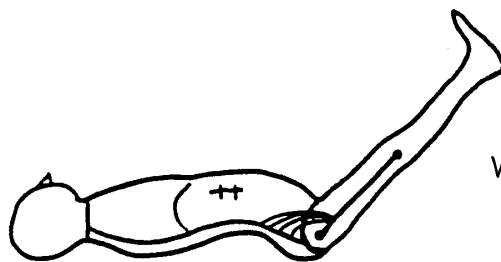
This is because the spinal joints are being pulled forward as described above. Because the pressure inside the abdomen is always a plus pressure, the abdominal wall therefore is distended forwards.

To try to stabilise the moving spinal joints, the abdominal muscles try to work. They have now been pushed into their stretched, outer range position and are trying to work statically. These two conditions are the most difficult for any muscle, and in any re-education programme are only used when the muscle has been given considerable strengthening training.

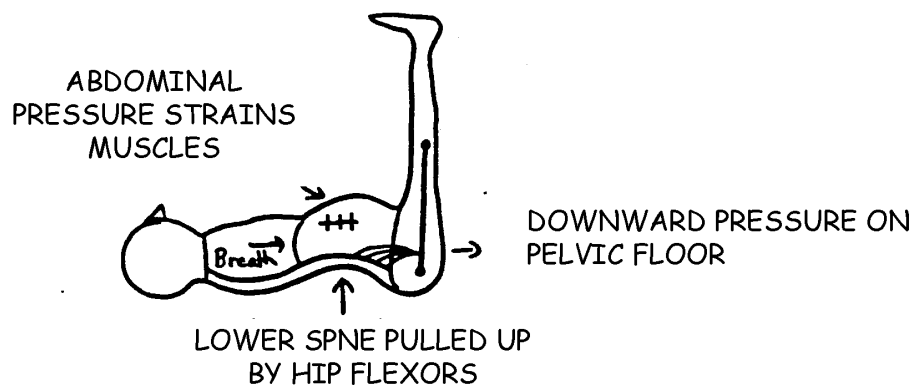
THE DANGERS OF DOUBLE LEG RAISING & LOWERING



HIP FLEXORS
ATTACH FEMUR TO
PELIS & SPINE



WEIGHT OF LEGS X LENGTH OF LEGS =
PULL ON LOWER SPINE



SINCE DOUBLE LEG LIFTS DO NOT TONE THE ABDOMEN AND SIMPLY
PLACE GREAT STRAIN UPON THE LOWER BACK & ABDOMINAL MUSCLES-
THEY HAVE BEEN PROHIBITED BY THE BWY .

ALSO CARE NEEDS TO BE TAKEN WHEN DOUBLE LEG LIFTING IS PART OF
ANOTHER ASANA. HERE FOR EXAMPLE IN LOWERING FROM A SHOULDER-
STAND, THE LEGS SHOULD BE KEPT BENT TOWARDS THE CHEST TO
RELEASE THE STRAIN OF STRAIGHT LEGS BEING LOWERED.