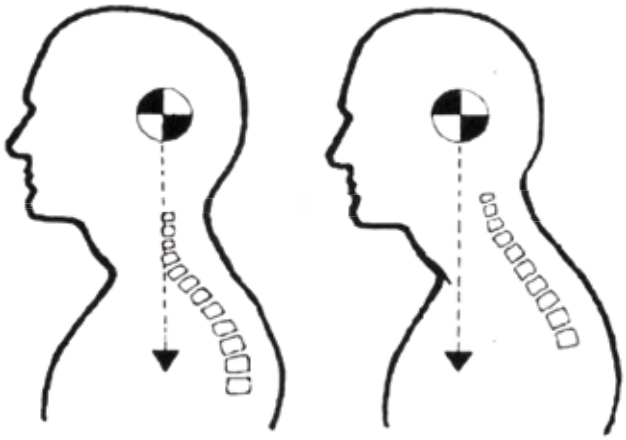


POKING HEAD
This image shows the correct alignment of one's ear in relation to one's shoulders. In the right-hand picture can be seen so-called 'poking-head posture', where the ear is forward of where it should be. This strains the muscles of the neck and upper back, and restricts shoulder movement.

SUPPLE DIFFERENCE

Flexibility boosts performance, improves posture and reduces the chances of getting an injury. Gerald Smith looks at workplace and poolside stretches for swimmers.

BACK STRETCH
Place your arms on the wall and push your bottom as far away from the wall as you can without the hands coming off the wall. Hold for 15 seconds and then increase the stretch further by pushing your backside up to two inches without your hands coming off the wall. Hold for 15 seconds and then increase the stretch one more time.

Finding time to train can often be difficult, but if all you do is swim then you're missing out a key part of your work-out. Flexibility training has been shown to improve posture and range of shoulder motion, prevent injuries, and aid post-exercise recovery.

Stretching is part of most injury rehabilitation programmes, so it makes sense that regular stretching when fit can also help prevent injury and improve performance.

One major factor affecting flexibility is posture, and one of the most serious and common problems for swimmers (and non-swimmers) is 'poking head posture', which results from too much time spent hunched in front of a computer. This results in chest, shoulder and neck muscles becoming shortened and tight, and because these muscles are at the front of the body they pull the head forward.

Such poor posture reduces the blood supply to the brain, which affects your concentration, says physiotherapist Katherine Watkins (watkinsphysio.com). "Breathing is also affected, due to the impingement of key nerves supplying the diaphragm," she says. "Also, the head and the nerves that run through this region to your brain are restricted." The muscles attached to the rib cage are called the intercostals and Watkins says when these are tight, the ability to rotate one's trunk is also restricted. This not only limits stroke length but also forces the body to seek this lost rotation elsewhere – usually from the shoulders – which then are likely to become strained. Plus, when the head comes forward it causes the shoulder joint to be pulled forward, meaning when the arm is raised during a stroke the shoulder muscles rub against the bony structures of the shoulder, causing inflammation. In short, poking head posture is all-round bad news for swimming – in terms of technique, performance and injury, such as 'swimmer's shoulder' (which is actually a confection of ailments, including impingement syndrome, rotator cuff tendinitis, subacramila bursitis, and instability).

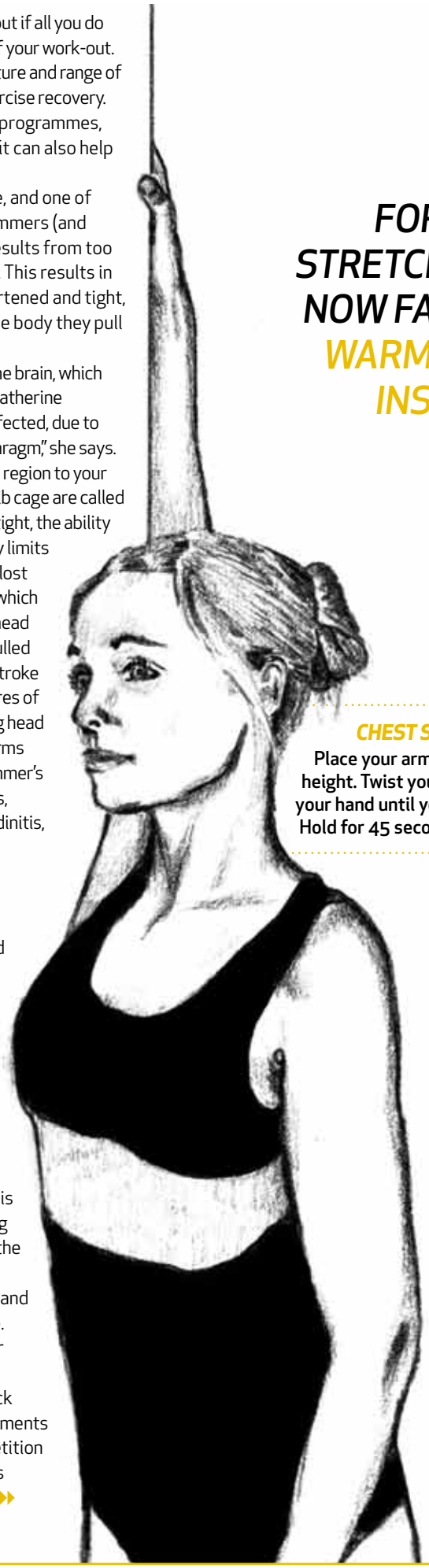
FLEXIBILITY AND PERFORMANCE

Alex Marinof (leanderswimmingclub.org.uk) is a former Greek international swimmer, and is head coach of Leander Swimming Club. He says performance can be improved by 10-15 per cent by increasing flexibility. "It will give you a larger range of motion, increase recovery between sessions, and prevent injury," he says.

As an elite swimmer, Marinof spent more than two hours a week stretching, including a warm up and warm down regimens. Because he has experienced the value of stretching he makes sure that around 4-5 weeks before competition, his swimmers perform a weekly 90-minute stretching session, to aid recovery and help them to taper – the systematic process many swimmers go through leading up to an event of decreasing training load and increasing rest in order to maximise performance.

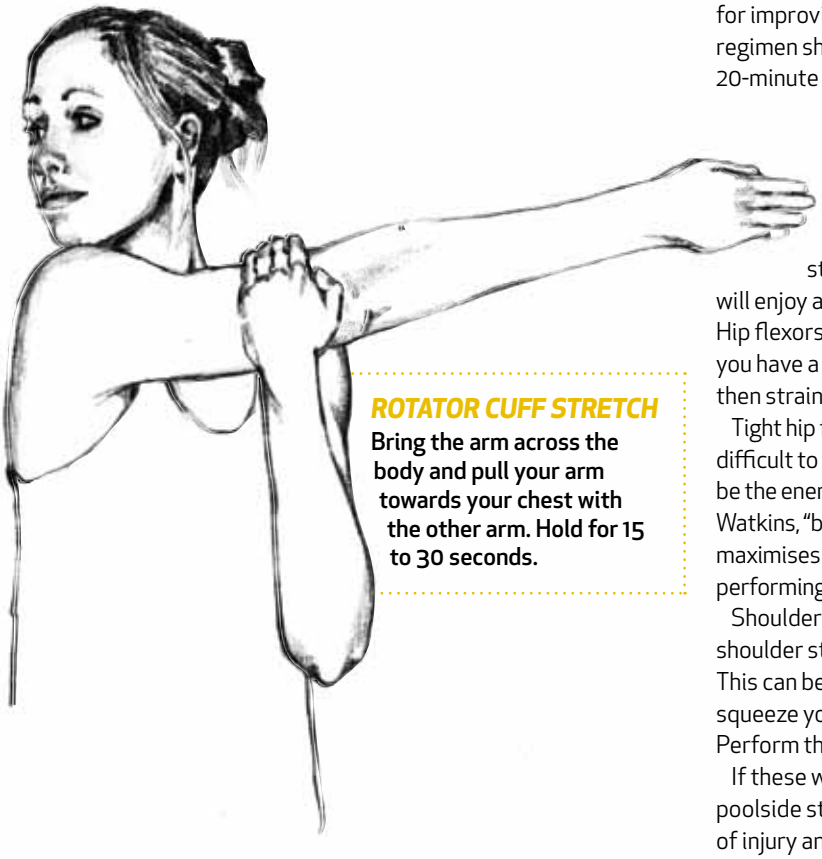
For pre-exercise stretching, athletes now favour dynamic warm-up stretches instead of static stretches. Dynamic stretching entails a large, quick range of motion movements that mimic the movements expected of muscles during the training or competition itself. Research into dynamic stretching shows it's important for both speed and endurance events.

FOR PRE-EXERCISE STRETCHING, ATHLETES NOW FAVOUR DYNAMIC WARM-UP STRETCHES INSTEAD OF STATIC STRETCHES



CHEST STRETCH

Place your arm on the wall above shoulder height. Twist your chest and waist away from your hand until you feel a stretch in your chest. Hold for 45 seconds.



ROTATOR CUFF STRETCH
Bring the arm across the body and pull your arm towards your chest with the other arm. Hold for 15 to 30 seconds.

However, dynamic stretching is less suited than static stretching for improving posture and range of motion, which is why a static regimen should be added to the end of a work out – following a 20-minute warm-down swim to remove lactic acid build-up.

STATIC STRETCHES

Static stretching is when you take a muscle to its full range of motion and hold for up to one minute.

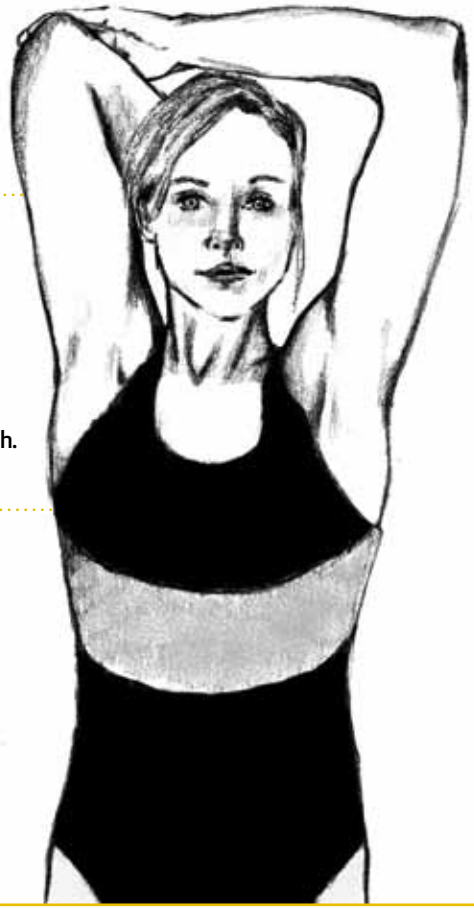
Swimming speed comes from the upper body, so by stretching the shoulders, chest and latisimus dorsi you will enjoy a greater range of motion, as well as improved posture. Hip flexors are also key to swimming performance, especially if you have a sedentary work life, which can tighten flexors, which can then strain the lower back, to which they're attached.

Tight hip flexors can also cause leg-drag, as they make it more difficult to maintain a streamlined body position. Time needn't be the enemy when it comes to combating poor posture, says Watkins, "because concentrating on your posture during the day maximises the benefits of core and flexibility training". She adds that performing pelvic tilts at work "will also help improve core stability".

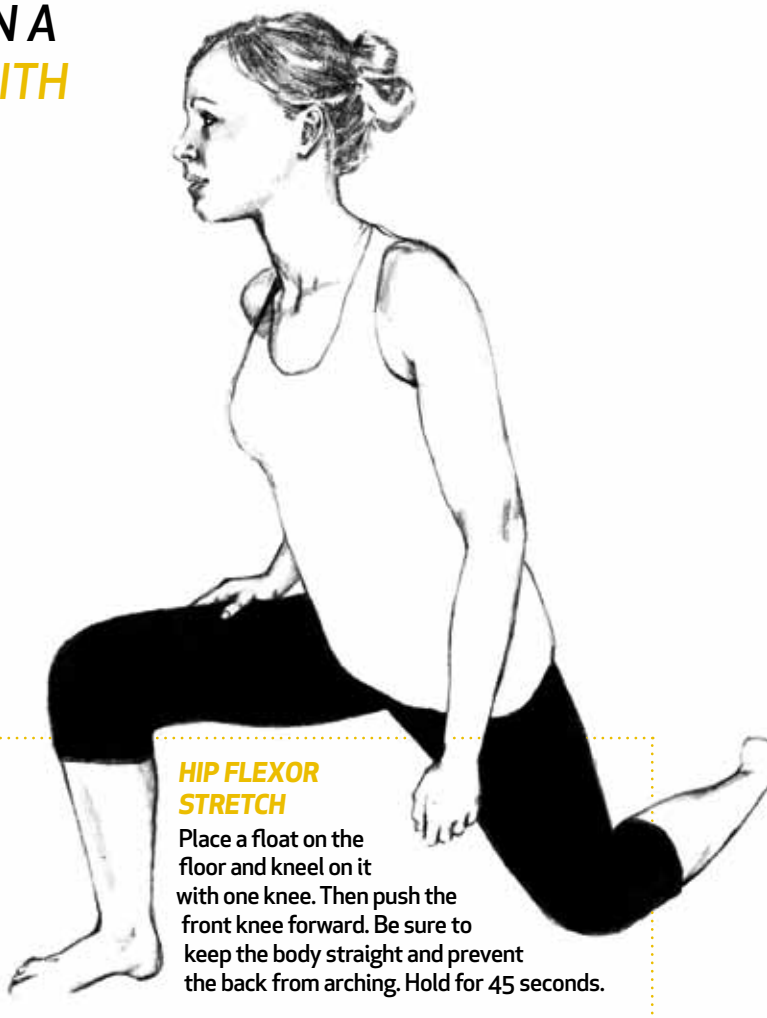
Shoulder-setting exercises are also effective at improving shoulder strength and redressing imbalances caused by swimming. This can be performed while seated at work. Keep your head back, squeeze your shoulder blades together and pull them downwards. Perform this as often as you can during the day.

If these work-place stretches are combined with the simple poolside stretches shown here you should greatly reduce the risk of injury and see an increase in performance. ●

IT'S MORE DIFFICULT TO MAINTAIN A STREAMLINED BODY POSITION WITH TIGHT HIP FLEXORS



TRICEP STRETCH
Place one palm in between your shoulder blades and push down on the fleshy part of your arm to stretch. Repeat.



HIP FLEXOR STRETCH
Place a float on the floor and kneel on it with one knee. Then push the front knee forward. Be sure to keep the body straight and prevent the back from arching. Hold for 45 seconds.