

# >> COOL DOWN

After all that exercising, you really ought to ease off a bit. Here's the finest stretching routine known to man

Life conspires to shorten our muscles. Every hour we spend sitting or driving, every mile we run, every weight we lift helps make certain muscles shorter. Unless we stretch these muscles to help them return to their original lengths, they stay short. And shorter, tighter muscles ruin our posture, and make it more difficult to perform simple, everyday tasks.

The stretches shown here will increase your muscles' range of motion to improve performance in sport and exercise, help prevent injury and generally make life more comfortable for you.

As one muscle stretches, another contracts. In this illustration (right), while the calf and hamstrings are stretching, the tibialis anterior and quadriceps are contracting. If any muscle stretches too far, the stretch reflex kicks in and the muscle suddenly goes from a stretch to a contraction to avoid injury. Say you fall asleep in a meeting. As your head nods forward, your neck muscles stretch suddenly, and then just as suddenly contract to jerk your head back up.

In sport, you sometimes have too much momentum and the stretch reflex can't keep the muscle or its connective tissues from stretching too far. A strain, sprain or tear is the end result.

Here's a scary fact: once a ligament or tendon is stretched too far, it never returns to its original length, so the joint it connects to is permanently less stable than before the injury.



## YOUR GOALS

<b>Beginner:</b> Accustom your muscles and connective tissues to stretching exercises, and increase range of motion in crucial joints, such as those in your hips, lower back and shoulders.	<b>Intermediate and advanced:</b> Dramatically increase range of motion for sport and exercise. Some stretches in this programme build strength.
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# BEGINNER

**Frequency:** At least three times a week.

**Stretch duration:** 15 to 20 seconds per stretch.

**Technique:** To perform most of the exercises in this section, simply get into the position shown in the illustration, feel a gentle pull in the targeted muscles, and hold that position. Don't try to push or pull yourself into dramatically deeper stretches; that will simply activate the stretch reflex, and your muscles will contract while you're trying to stretch them. This produces muscle fatigue, if not injury. Your flexibility will improve over time without adding that extra, unproductive effort. Try to perform each

stretch three times. You can do all of the stretches indicated in circuit fashion, one right after the other, and do three circuits. Or you can do each stretch three times before moving on to the next.

**Progress:** Increase each stretch to 25 to 30 seconds' duration.

**How long:** You can use this programme your entire life, and add other stretches you learn. But if you want to increase your strength and flexibility for sports performance, move up to the Intermediate programme.



**TRICEPS STRETCH**



**SIDE BEND**



**SHOULDER STRETCH**

## CAT STRETCH

● Start with your back rounded (A), and then allow it to sag (B). Hold each position for 3 to 5 seconds, and perform for a total of 30 to 45 seconds.



**A**



**B**

## FLEX TIME

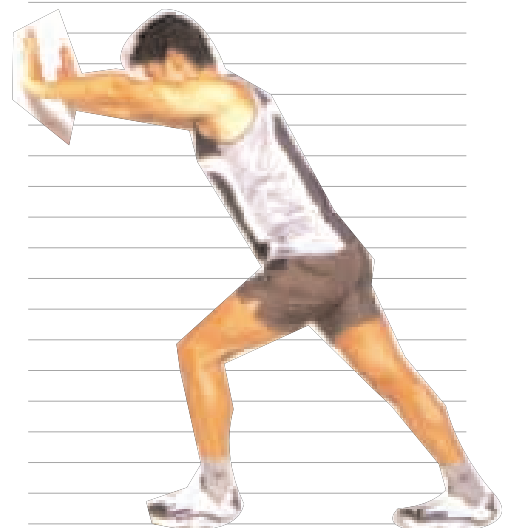
Most of us think the time to stretch is right before a cardiovascular or weight workout. We're wrong: "The biggest myth about stretching is that it's a warm-up," says exercise researcher Len Kravitz. "You shouldn't stretch until you're already warmed up." A cold muscle is easily injured, so you don't want to stretch until you've already raised the temperature in your muscles by several degrees. Stretching after a workout, as part of your cool-down, is ideal. On the other hand, you don't need a warm-up if you just get up from your desk a few times a day and gently stretch out tight muscles.



**FIGURE OF FOUR STRETCH**



**BUTTERFLY GROIN STRETCH**



**WALL CALF STRETCH**

# INTERMEDIATE

**Frequency:** 3 to 5 times a week

**Stretch duration:** 20 to 30 seconds for static stretches (in which you hold a single position).

Other stretches are described below. Repeat all stretches three times for maximum benefit.

**Technique:** You'll use three techniques in this routine: CR, CRAC and static.

CR stands for contract-relax, but all you need to know is that you flex a muscle hard for six seconds, then relax and stretch it for 12 seconds.

CRAC stands for contract-relax-agonist-contract, but you don't have to remember that. All it means is that you flex a muscle, then stretch it, then flex the opposite muscle, then stretch the original muscle again. As soon as you feel that last stretch, you'll realise why someone came up with this complicated technique. You'll see your muscles go further than they ever have before. Just as important is that second-to-last step, flexing the muscle opposite the one you're stretching. You'll actually make your muscles stronger here, at the point where they're most likely to be injured in a match or

a strenuous workout.

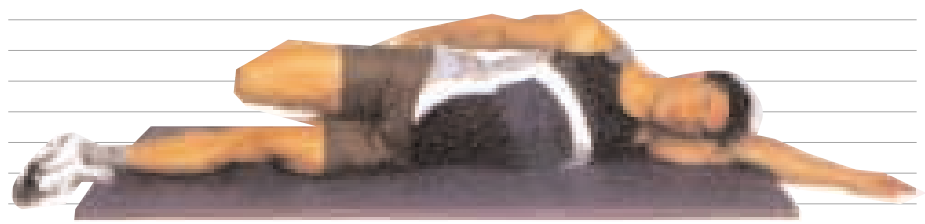
Finally, you'll also do some static stretches; these are simple 'get into a position and hold it' exercises, similar to the ones in the Beginner section.

Static stretches are for your hip flexors, knees and lower back, which might get hurt during more aggressive CR and CRAC stretches.

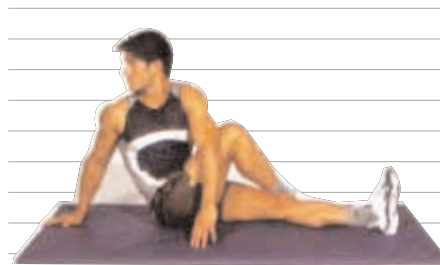
**Precautions:** A study at the University of Mississippi showed that CR stretches can improve flexibility by up to 18 per cent.

That's a huge increase, but it comes with some risk. You should feel all these stretches in the middle of the muscle. If you feel it most strongly in a joint, stop the stretch. The next time you train, try a gentle static stretch for that body part.

**Who needs them:** These stretches are best used during periods of hard training for specific goals – preparing for a sports season or training for an endurance event such as a marathon. At other times you'll probably want to go back to a programme that includes only static stretches.



**STATIC SIDE-LYING QUADRICEPS STRETCH**



**STATIC SPINAL ROTATION**



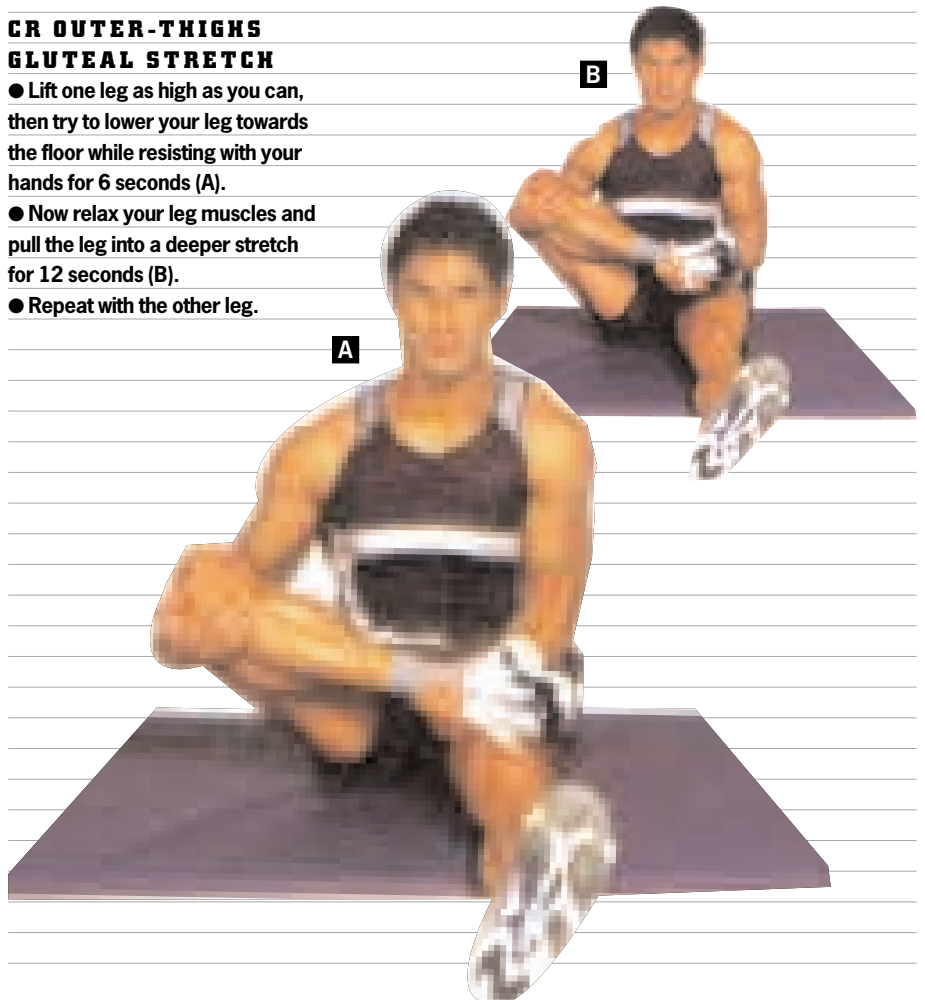
**STATIC STRADDLE STRETCH**

## **CR OUTER-THIGHS GLUTEAL STRETCH**

● Lift one leg as high as you can, then try to lower your leg towards the floor while resisting with your hands for 6 seconds (A).

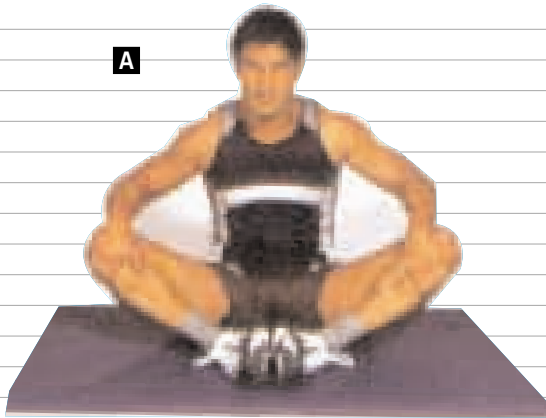
● Now relax your leg muscles and pull the leg into a deeper stretch for 12 seconds (B).

● Repeat with the other leg.

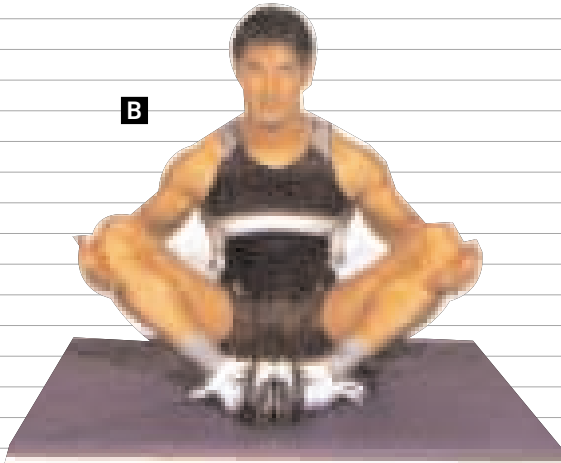


# INTERMEDIATE

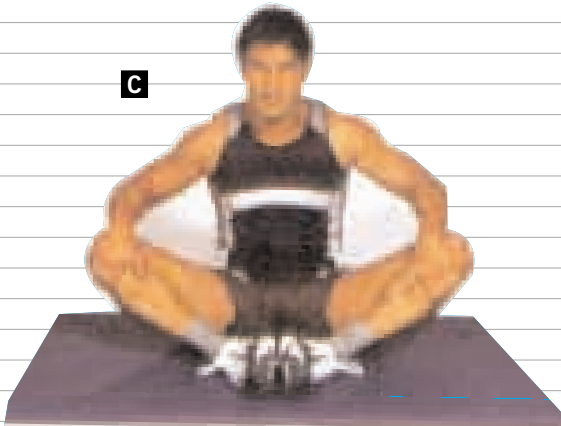
**A**



**B**



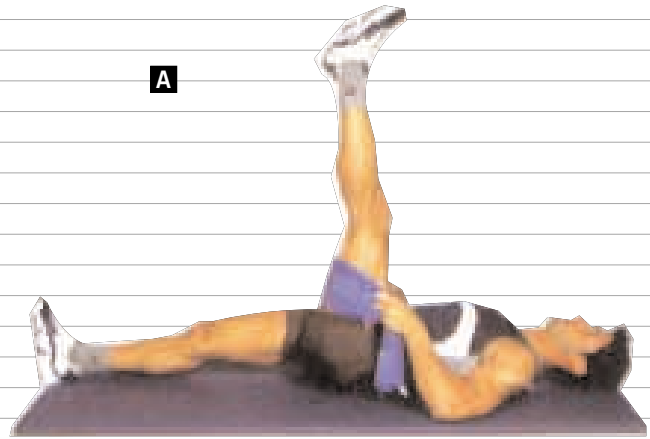
**C**



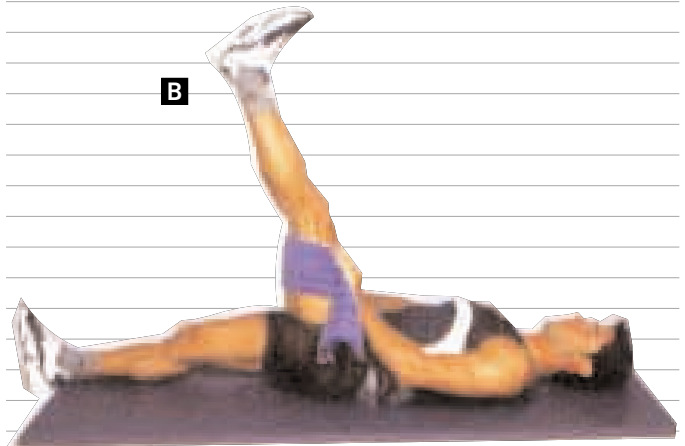
## CRAC GROIN STRETCH

- Contract inner-thigh muscles for 6 seconds, trying to raise knees towards each other while resisting by pushing down on thighs.
- Relax inner-thigh muscles and gently push them into a stretch for 12 seconds (A).
- Place hands underneath thighs and try to push legs up for 6 seconds as you contract gluteals (B).
- Relax gluteals, return hands to tops of thighs, and push down, bringing the inner-thigh muscles into a deeper stretch for 12 seconds (C).

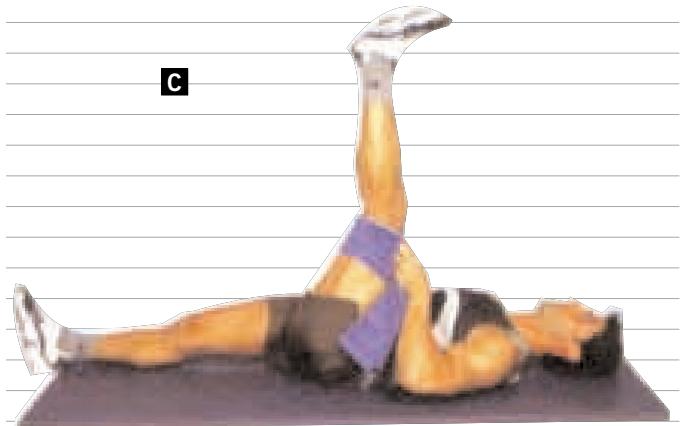
**A**



**B**

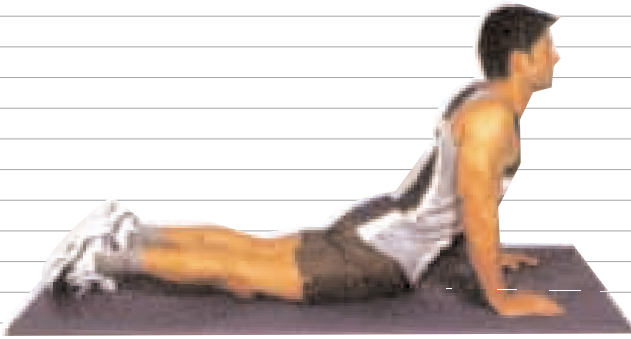


**C**



## CRAC HAMSTRING STRETCH

- Contract left hamstrings for 6 seconds, trying to lower leg to the floor while resisting with a towel.
- Relax hamstrings and gently pull left leg into a stretch for 12 seconds (A).
- Contract left quadriceps as you try to push leg down with both hands for 6 seconds (B).
- Relax quadriceps and pull hamstrings into a deeper stretch for 12 seconds (C).
- Repeat with the right leg.

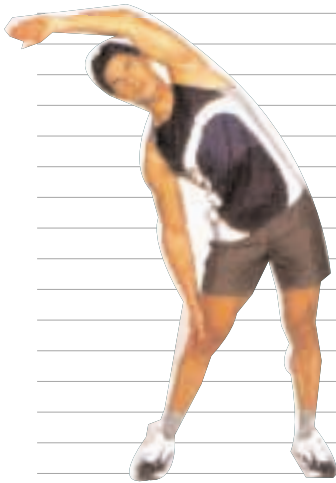


**COBRA STRETCH**



**CR TRICEPS/LATISSIMUS STRETCH**

- For 6 seconds, try to straighten your bent arm as you resist by pulling on a towel with your other arm (A).
- Now relax your bent arm and pull it into a deeper stretch.
- Repeat with the other arm. for a count of 12 seconds (B).



**STATIC SIDE STRETCH**



**PECTORAL/SHOULDER STRETCH**

**FLEXIBLE OPTIONS CHEAT SHEET**

TECHNIQUE	HOW TO DO IT	THEORY	REALITY
<b>Static</b>	Get into a position and hold it, usually for 15 to 30 seconds.	A safe and effective way to increase range of motion and limit injuries.	No downside here; it seems to work well for everyone.
<b>Active-Isolated (AI)</b>	Contract a muscle for 2 seconds, then relax and stretch that same muscle for 2 seconds.	If you hold a muscle in a stretched position for longer than 2 seconds, the stretch reflex kicks in, rendering the stretch useless and possibly dangerous.	Two seconds in a stretched position is not enough time to fully stretch muscle and connective tissue, unless the stretcher is already a highly conditioned athlete.
<b>Proprioceptive Neuromuscular Facilitation (PNF); includes CR and CRAC techniques described previously</b>	Contract a muscle for 6 seconds, relax it, and then push or pull the muscle into a deeper stretch. Often, a therapist or trainer helps you perform the stretches.	These techniques 'switch off' stretch-reflex mechanisms, allowing a greater increase in range of motion.	Physical therapists have been using PNF successfully for 50 years. It requires far more effort than static stretching though, making it a bad idea if you have a muscle or bone disease.