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your elbows when bringing the bar up. Do not "lean" too far back when bringing the bar down. For reverse-grip lat pull-downs, use the same bar with a different grip to hit your rhomboid muscles.

Pull-ups are always a great way to work any part of your upper body. To really hit your lats, try a wide grip pull on an assisted dip machine. The assisted dip is a good way to work your way up to traditional, non-assisted pull-ups.

Common Sense Tips

Wear comfortable, form-fitting clothing so you can see your form. Listen to music that motivates you and helps you tune out any distractions. Unless you are in pain, don't quit, instead push yourself. Eat a proper meal an hour before you head to the gym to give you the energy. Don't skip workouts. Unless you make time for the gym, it won't be there! Hydrate – always bring a bottle of water. Special thanks goes to Xsport Fitness for the use of their facility!

Karen Bartuch has been in law enforcement since 2002, working a variety of assignments including patrol, gang patrol, gang team, undercover, narcotics, policy advisor and intelligence. She is the founder and current president of the Women's Tactical Association. She can be reached at womenstactical@sbcglobal.net.

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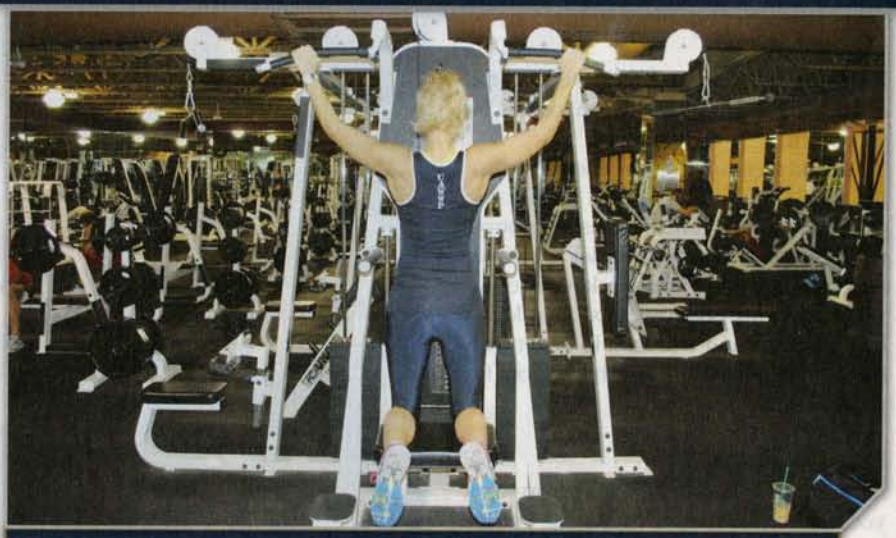


▲ To really hit your lats, try a wide grip pull on an assisted dip machine.

▲ Don't skip workouts. Eat a proper meal before the workout. Form-fit clothes allow you to check your form. Hydrate!

Watch Your Back

Preventative measures reduce the risk.

By Matt Brzycki

Police officers are thought to have a higher risk of low-back pain than the rest of the population. Two factors play a major role: 1) driving and sitting for prolonged periods of time; and 2) having to wear extra gear that can weigh 20 pounds or more. In particular, the duty belt has been fingered as a culprit in low-back pain.

There actually aren't many studies that have investigated the risk and prevalence of low-back pain among police officers. And as it turns out, the scant research that has been conducted on this topic offers conflicting evidence.

For example, a study of the Royal Canadian Mounted Police found that driving a patrol car or wearing a duty belt doesn't increase the frequency of low-back pain. In this study, those who drove for more than half the day or wore a duty belt had the same prevalence of low-back pain as those who didn't drive or wear a duty belt.

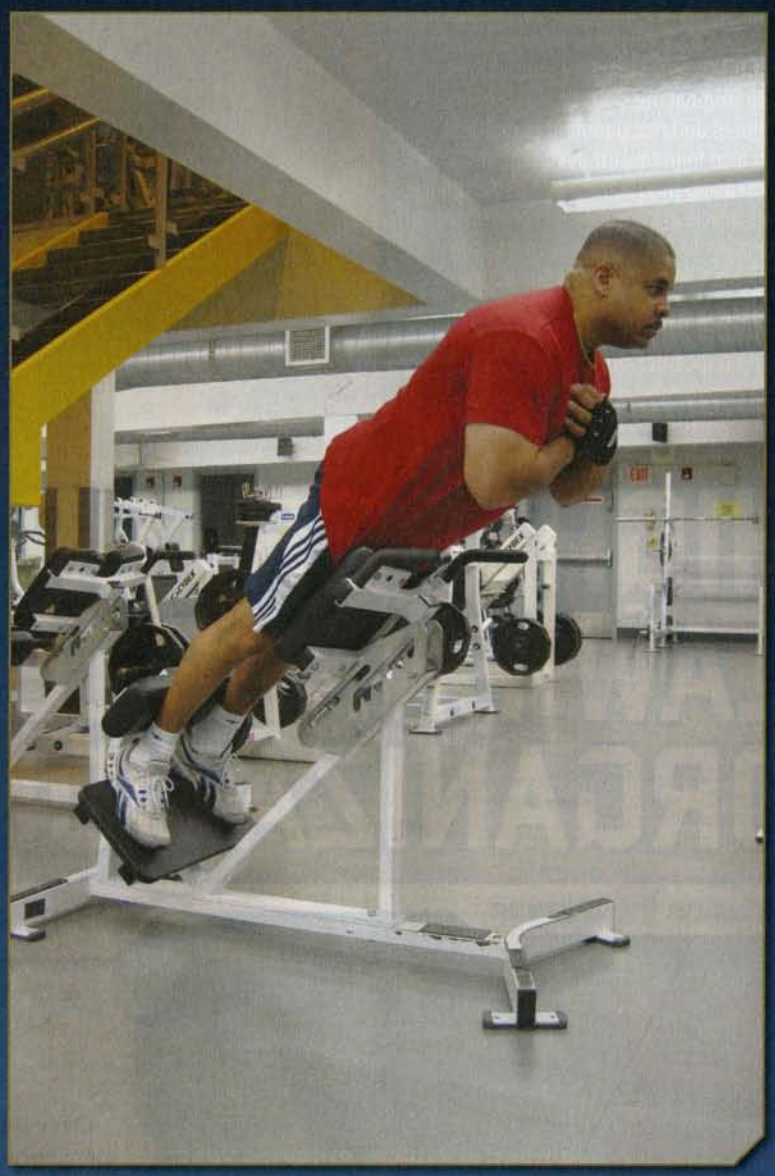
On the other hand, a study of police officers in the United Kingdom found that those who drive a lot – in terms of distance as well as hours behind the wheel – have a high rate of self-reported low-back pain. In fact, according to this study, officers whose job mainly involved driving and sitting in a patrol car all day had more low-back pain than officers

whose job mainly involved sitting, standing and lifting with no more than 10 hours per week of driving.

Normally, more credence should be given to research than anecdote. In this case, however, the sheer volume of personal narratives from police officers who claim that low-back pain is related to certain aspects of their job cannot be ignored. In any event, let's take a closer look at the lower back and some ways to decrease the risk of pain in that region.

The main muscles of your lower back are the erector spinae. These muscles produce movement of the spine in the lumbar (low-back) area. The spine is supported by the pelvis, a bony structure that also contains the hip "sockets" to which your upper legs attach. The primary function of the erector spinae is torso extension (straightening the torso from a bent-over position). In addition, the muscles assist the obliques in torso lateral flexion (bending the torso to the side) and torso rotation (turning the torso).

Insufficient strength seems to be a factor that is related to low-back pain. An obvious solution to the problem, then, is to strengthen the lower back. Exercises that target the lower back are the back extension (pictured) and stiff-leg deadlift. Exercises that address other functions of the lower back are the side bend and torso rotation.



Not all low-back pain is due to weak muscles, however. Sometimes, low-back pain stems from what is known as "anterior pelvic tilt." What this means is that the pelvis is pulled or "tilted" forward, which exaggerates the curve in the lumbar area. When the pelvis tilts forward, it places a strain on the lower back.

A simple way to identify anterior pelvic tilt is when the beltline is significantly higher in the back than in the front. There are several things that can be done to counteract the tilt. First, stretch the lower back. This can be accomplished by lying supine and pulling the knees to the chest. Second, strengthen the abdominals. The lower back and abdominals should receive roughly an equal amount of attention. The abdominals can be strengthened with the sit-up / crunch.

Third, stretch the hip flexors. These muscles are located on the front part of the hips and are involved when bringing the knees toward the chest. The hip flexors can be stretched by lying on one side of the body and pulling the heel toward the hips. Fourth, strengthen the hips and hamstrings. The hips can be strengthened with the ball squat, deadlift, leg press and lunge. The hamstrings are used somewhat during those exercises but it's best to work them directly with the leg curl.

There is a good chance that you will have low-back pain sometime in your life. You can reduce your risk by incorporating these preventative measures.

Matt Brzycki is the Assistant Director of Campus Recreation, Fitness at Princeton University in Princeton, N.J. A former Marine Drill Instructor, he has authored, co-authored, and edited 17 books on strength and fitness. He may be reached at brzycki@princeton.edu.

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