Back strong and Beltless by Paul Chek MSS, HHP, NMT and reformatted by Kim Goss CSCS

When it comes to lifting heavy, a weight belt is more fashion accessory than essential workout gear. Remember when the only time you would see someone wearing a weight belt was in the gym, and only when they were performing the heaviest squats, dead lifts and overhead presses? Now it seems everyone who wears a belt-- from the Arnold wannabes to the elite few who make the cover of Power lifting USA--regardless of what exercise they're performing or how heavy they're lifting. Squats? You MUST wear a belt. Bench presses? You SHOULD wear a belt. Biceps curls? Well, you know, just to be on the safe side...

It's getting ridiculous.

The trend to wear a weight belt has now extended beyond the gym doors. Trash collectors, truck drivers, and construction workers often spend their entire workday in a weight belt--as do mail carriers, grocery clerks and even the pizza guy. Some companies have gone so far as to make it a mandatory safety policy that all employees wear a back harness. Next thing you know it's going to be a misdemeanor to drive a car without a weight belt! What's going on here? Do weight belts really protect the back? Will they make you stronger? Can the estimated 85 percent of Americans who will suffer from at least one episode of back pain in their lives find relief, and possibly even avoid surgery, by making a weight belt a habit?
Before I answer these questions, try to dig up recent pictures of the world's best Olympic weightlifters in competition. Not the American weightlifters who are losing the struggle to achieve international respect, but our European counterparts who are breaking records and winning world and Olympic titles. Isn't it interesting that they never use belts when performing the snatch lift, and seldom in the clean and jerk? Even in training you'll find that many of these lifters prefer to train without any forms of artificial support. In fact, Iron Mind Enterprises sells videos of these athletes squatting over 700 pounds without a belt! Either these athletes are really stupid, or they know something that we don't.

INTRA-ABDOMINAL PRESSURE TO THE RESCUE

To determine whether or not weight belts can protect the back, it's necessary to first look at one of the body's support mechanisms for the spine: intra abdominal pressure.
As you bend forward, the pressure in your lumbar disks should increase in direct proportion to the degree of forward bending. When using heavy weights in the squat and dead lift, intra-disk pressure may rise 300 percent above normal--such high levels of stress could cause disk herniation if your body did not take measures to protect these structures.
When you bend forward your abdominal muscles contract and compress the internal organs, forcing them downward into the pelvic basin and upward into the diaphragm. Through this intra-abdominal pressure mechanism there is a decompression of the two lowest vertebral disks (L4/5 and L5/S1). This decompression may be as great as 30 percent or as low as 6 percent. Regardless of the magnitude of the decompression, the important point to remember is that these two lumbar disks carry the greatest load of all spinal disks. If the intra-abdominal pressure mechanism is weakened or faulty, it will proportionally affect the other mechanisms, leaving the lower lumbar disks at a high risk for injury.

ENTER THE WEIGHT BELT

So how do weight belts fit into this picture?
When a weight belt or back harness is wrapped tightly around your torso, intra-abdominal pressure increases. This belt compression creates a mechanical phenomenon known as "hoop tension," and this hoop tension will enable you to lift more weight.
A good way to understand hoop tension is to visualize what occurs when you squeeze toothpaste out of the tube. When you apply pressure to the tube, the hoop tension forces the toothpaste to ooze out one end of the tube. Knee wraps utilize hoop tension around knee joint to help you lift more weight in squats. Because these wraps are compressive and restrict freedom of motion in the hinge joint, an extension force is created in direct

proportion to the level of hoop tension. You can determine how much hoop tension contributes to your squat by seeing how much you can lift with and without wraps.
Hoop tension develops naturally when you contract your abdominals or artificially when you tighten your weight belt. The result is a "hydraulic amplifier mechanism" that assists in straightening the spine. Natural hoop tension is the body's innate mechanism for increasing your lifting ability. However, the more of an increase in capacity you experience from a weight belt, the greater the weakness and functional deficit you have in the abdominal wall.

Wait there's more!

Weighing the value of potential increased strength from wearing a weight belt and potential risk requires you to understand the downside of weight belts as well as the pluses. For example, there's a limit to how much intra-abdominal pressure your body will allow, and this is always less than the pressure in the blood vessels that pass through the diaphragm. If you were able to exceed the blood pressure levels in these vessels, the blood flow to the heart would be stopped!
To ensure sufficient circulation to the heart, when you lift heavy weights your abdominal muscles only contract hard enough to develop the optimal amount of intra-abdominal pressure. Consequently, chronic use of a weight belt will DECONDITION the abdominal muscles' capacity to develop intra-abdominal pressure. This causes a big problem the day you show up to the gym (or work) without a weight belt. For other athletes, especially those involved in contact sports like football and boxing, having deconditioned trunk muscles will subject their lower lumbar discs to considerable stress.
Because weight belts are usually very wide, they restrict motion in the lumbar spine. When you bend forward during exercises like squats or good mornings, 80 percent of the lumbar motion occurs in the lower two lumbar disks. With the addition of a tightly cinched weight belt, the upper lumbar segments become partially immobilized, forcing the lower two lumbar disks to contribute more than their fair share of the work. This stress accelerates degeneration in these disks, which are the most commonly injured to begin with.
A weight belt also affects the natural rotation of the lumbar spine, reducing the work of the lumbar stabilizer muscles. This deconditions and destabilizes the lumbar spine, an effect which also accelerates the onset of disk degeneration, destruction and possibly osteoarthritis. Finally, prolonged use of a weight belt can affect your natural diaphragmatic breathing pattern, resulting in overuse of the accessory respiratory muscles. Clinically, this "chest breathing" is associated with tension headaches, poor posture and accelerated degenerative changes in the cervical spine.

WEANING YOURSELF FROM THE BELT

If you currently use a weight belt, I suggest weaning yourself from it--don't go cold turkey! You need to retrain and recondition the abdominal mechanism first.
Start by wearing your belt only when performing lifts of more than 85 percent intensity. After each two weeks, reduce your use to only lifts of more than 90, 95 and 100 percent. As you become more comfortable without the belt you can eventually stop using it altogether (except perhaps in competitions), relying upon and maintaining the body's own protective mechanism. Weight belts have long been touted for their protective and even therapeutic qualities. In Joe Weider's book ULTIMATE BODYBUILDING the Master Blaster tells us "A weight lifting belt supports your lower back and abdomen, thereby preventing injuries to the middle of your body. It is particularly necessary to use a weight lifting belt when doing squats, heavy overhead pressing movements, or any type of dead lift or rowing motion."

The fact is: Prolonged use of weight belts contributes to dysfunction and injury in the lumbar spine. I realize that despite compelling evidence to the contrary, many power lifters would rather believe their training partners and gym lore and will continue wearing a belt. But the final decision as to wear a belt or not is yours--think carefully before you decide."