

SAFE LIFTING **IN CONSTRUCTION**

COURSE OUTLINE

- **When we refer to our "back", anatomically we're talking about our spine.**
 - This is what gives our body structure and support.
 - It allows us to move about freely and to bend flexibly.
 - The spine also supports and protects the nerve tissue of our spinal cord, and the roots of the nerves that lead away from it.
- **Although we most often refer to our spine as "the backbone", it actually consists of 33 smaller bones called "vertebrae".**
 - They are stacked on top of each other to create the spinal column.
 - These vertebrae are held together by groups of ligaments, tendons and muscles.
- **The spine has three specialized sections:**
 - The cervical spine carries the weight of the head, and allows it to move.
 - The thoracic spine connects to the ribs, and forms a part of the rear wall of the ribcage.
 - The lumbar spine, the lowest portion, bears most of the body's weight...and the weight of anything that we lift.
- **The lumbar spine is a very hardworking part of our body.**
 - This is the area where most of our movement takes place, which is why lower back pain is so common.
- **Strained muscles and sprained ligaments are examples of "acute" back pain.**
 - With proper treatment these will usually heal within a few weeks.
- **If the pain persists or frequently reoccurs, it's called "chronic" back pain.**
 - This may indicate that something is wrong with the spine itself.
- **When your spine is "at rest", it naturally makes a curve that's shaped like an "S".**

- This shape helps your back distribute and carry weight more evenly, and better withstand physical stresses.
- **Through the "S" Curve, your spine unites the strength of its cervical, thoracic and lumbar sections into a stronger whole.**
 - To lift safely, we need to concentrate on maintaining the "S" Curve.
- **When we are walking, standing or sitting up "straight", our spine is in its strongest position.**
- **To stay injury-free you need to think things through before you lift.**
 - "Listen" to your back... if it feels stiff or painful, don't pick anything up.
- **A back that's hurting is a weaker back, which makes it more prone to trouble.**
 - It's easier to injure a back that has been injured before.
- **Consider what you're wearing.**
 - Make sure nothing will get in the way or restrict the free motion of your arms and legs.
 - Your shoes must provide the support, traction and protection you'll need.
- **Take a good look at the object you want to lift, and ask yourself the following questions:**
 - Is it too heavy or too large for me to lift by myself?
 - Is it hard to hold?
 - Is it unbalanced or unstable?
 - Will I be able to see where I'm going after I lift it?
- **Sometimes safe lifting means not lifting by yourself.**
 - You may be able to pick up an awkward parcel, but if it gets out of control while you're carrying it, you're liable to drop it, or hurt your back trying to recover.
 - If you're carrying multiple items, they could get loose, and that kind of sudden, unplanned motion is bad news for your spine.
- **We carry liquids all the time, but they can still pose special challenges.**
 - When you lift liquids and move with them, they will slosh around.

- You need to keep this in mind so the shifting balance doesn't take you by surprise.
- **A handle on a 40-gallon jug might encourage you to try and carry it with one hand.**
 - This would be a seriously unbalanced load, and a back problem just waiting to happen.
 - Using both hands on a handle is a pretty awkward lift, as well.
- **Using a dolly, or another type of cart, would be a good approach in certain situations.**
 - A 55-gallon drum can weigh hundreds of pounds, so you'll need a specialized dolly, or even a forklift for this job.
- **In some situations, a "flat-bed" cart could be the best solution.**
 - This could be a safe way to transport granular material if it comes in a bag with no handles... if you carry it yourself, the load inside it can shift and injure your back.
 - You'll need someone to stabilize a "flat-bed" cart while you load it up.
- **Thinking before you lift means that you take the time to recognize the lift's requirements, anticipate its difficulties, and plan accordingly.**
 - If the load is oversized or hard to handle, don't risk carrying it by yourself.
 - Ask for help, or use a hand truck or dolly to give you an "assist".
- **How you pick up the load is the most critical factor in safe lifting.**
 - If you set up to lift from an awkward position, you're setting yourself up for trouble.
- **Your lifting should be done with a straight back, so you shouldn't lift when your body is...**
 - Bent over.
 - Turned.
 - Leaning to the side.
 - Hyper-extended, reaching upward or forward.
- **When you lift from an awkward position, you are both flexing or twisting your spine and asking it to support the weight of the load.**
 - This is a bad combination, and a recipe for a backache if there ever was one.

- **A load that's at waist level, such as on a counter, is the simplest type of lift.**
 - First, position the object close to the edge... don't reach forward to grab it, because that stresses your back, and puts excessive weight on your spine.
 - Grasp the object, keeping your arms close to your sides.
 - Keep your back straight, and step back.
- **Lifting above your head is extremely stressful to your neck and lower back.**
 - So avoid reaching with your arms raised above your shoulders when you're lifting something up or taking it down.
 - Instead of reaching up, use a sturdy ladder or mobile stairs to put yourself in a better position before making the lift.
- **The most dangerous lift you can do is when you're handling an object that's "below the waist".**
 - You can hurt your back just by bending over.
- **When you bend at the waist, your spine becomes an unbalanced "lever", with the "fulcrum" at the lower two lumbar vertebrae.**
 - These vertebrae are the main weight-bearing portion of your spine.
- **This creates a 10:1 "lifting ratio".**
 - If your upper body weighs 100 pounds, bending at the waist puts approximately 1,000 pounds of pressure on your lower back.
- **The weight of the object you're lifting is also multiplied by 10.**
 - If your upper body weighs 100 pounds, trying to pick up a 50 pound object when you're bending at the waist puts about 1,500 pounds of pressure on the weight-bearing portion of your spine.

- **You can use a 4 step process to make a "below the waist" lift:**
 - First, get close to the object you want to pick up and lower yourself by bending at the knees.
 - Next, position yourself so that your shoulders are level, centered and facing the same direction as your hips... and make sure to keep your back straight.
 - Then, take a secure hold of the load, keeping your arms close to your body.
 - Finally, lift slowly and steadily with your legs.
- **After you pick something up safely, the next stage is carrying it to its destination.**
 - Your posture should be the same as when you lift...keep your back straight.
 - As you move, your shoulders should be centered and your arms should be at your sides.
 - Keep your head up.
 - Watch where you're going.
 - Be aware of where you're putting your feet.
- **When you're carrying something around a corner, don't turn your upper body while your feet are still moving ahead straight.**
 - That twists the lumbar portion of your spine and puts a lot of strain on your back.
 - Instead, change direction smoothly, with your feet, keeping your legs and torso aligned.
- **To complete a lift we eventually have to put the load down.**
 - Remember not to rush this final stage... you can hurt yourself as badly putting an object down as you can picking it up.
- **The "setting down" stage uses what we already know about safe lifting...but now we're doing it in reverse.**
 - Keep your back straight.
 - Hold the load close to your waist.
 - Lower it with your legs.

- **No product that is currently available has been proven to prevent back injuries.**
 - Plenty of people buy "back belts", but that doesn't necessarily mean that they work.
 - Many back specialists say "back belts" don't provide any real protection at all.
 - The best "safety devices" are the techniques we've just discussed.
- **Before you start a lift you need to scope out your route.**
 - Find out what to expect, and where, and proceed with caution.
 - Make sure your path is unobstructed... and that there is nothing to bump into or trip over.
 - Avoid wet spots and slippery surfaces.
- **Don't compromise your grip on the load by having to open doors single-handedly.**
 - Prop them open ahead of time, or ask a coworker to run interference for you.
- **Note the location of any steps and stairs on your route.**
 - Make sure they are free of objects and debris.
- **Low light increases the risk of an accident.**
 - Make sure the lights are on before you begin your trip.
- **Where you put the load down is critical as well.**
 - Identify where you're going to land before you take off.
 - Trying to improvise under pressure can lead to trouble.

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- **"Listen" to your back, and don't lift if you're hurting.**
- **Think before you lift... estimate the load's weight, evaluate its shape and size, and consider whether the container requires special handling.**
- **Know how you're getting from point A to point B, and make sure that the route doesn't include any surprises.**
- **Know your own limits... ask for help, or use a hand truck, dolly or other equipment when necessary.**
- **Use correct lifting techniques by keeping your back straight, bending at the knees, and lifting with your legs.**
- **Turn corners with your feet, not your back, and put a load down like you would pick it up.**
- **By using "safe lifting techniques", you can work better, healthier and pain-free!**