BACK SAFETY IN INDUSTRIAL ENVIRONMENTS

COURSE OUTLINE

- **When we refer to the "back", we're talking about the spine, as well as the tissues and nerves that are associated with it.**
  - The spine gives our bodies structure and support.
  - It is rigid enough to carry more than half of our weight, but flexible enough to allow us to twist and bend freely.

- **The spine is made up of 33 individual bones called "vertebrae".**

- **The seven vertebrae in your neck are called "cervical" vertebrae.**
  - They support your skull and allow you to move your head.

- **The twelve vertebrae in the mid-back are called "thoracic" vertebrae.**
  - They connect to your ribs and form the "back wall" of your rib cage.

- **The five vertebrae in your lower back are called "lumbar" vertebrae.**
  - They enable you to bend at the waist and support not only the weight of your body…but anything that you lift and carry as well.

- **Vertebrae are "hinged", with "facet joints" that guide their movement and provide stability.**

- **Between the vertebrae are cushioning structures called "intervertebral discs"**
  - These "shock absorbers" have a soft, gelatinous "nucleus" surrounded by a tough, elastic outer casing.

- **A hollow passage through the spinal column called the "spinal canal" contains the millions of nerves that make up the "spinal cord" and which extend throughout the body.**
  - Protecting this delicate "information trunk" is another important function that your spine performs.

- **When it's at rest, a healthy spine forms a natural "S" curve that enables it to bear the body's weight with the least amount of stress.**
  - But if you place enough stress on your spine, then you'll know it.

- **As the body ages, muscles weaken, ligaments become stiffer, and the intervertebral discs begin to wear out.**
  - So the older you get, the more likely you are to have back problems.

- **Back injuries can happen anytime, anywhere…not just at work.**

- **Too much stress on your back can lead to strained muscles or ligaments.**
  - With proper treatment, such as ice packs to reduce swelling and heating pads to relieve stiffness, injuries like these will usually heal within a few weeks.

- **Back pain that lasts less than three months is called "acute" pain, but if the pain persists or frequently reoccurs, it is called "chronic" back pain.**
  - Chronic back pain can indicate that something more serious is happening with your spine.

- **"Ruptured" or "herniated" discs are a common type of spinal injury that can cause chronic pain.**
  - Although people often call it a "slipped disc", intervertebral discs don't really "pop out" from between the vertebrae.
  - What actually happens is that the outer elastic part of the disc ruptures so that the gelatinous nucleus protrudes and puts pressure on the nerves nearby.
  - This can cause severe back pain…as well as numbness or pain in other parts of the body.

- **Most disc ruptures occur in the two lower discs in the lumbar region, because they are the discs that do most of the spine's "heavy lifting".**

- **However, herniated discs can occur in the spine's cervical region as well.**
  - These injuries are often due to "whiplash", which is a condition that results from the head being violently thrown backwards by a sudden jolt, such as a car accident.

- **Properly treated, herniated discs usually heal by themselves, without the need for surgery.**
  - But it can take several years for a disc to heal completely.

- **The human body is designed to move, so standing or sitting still for long periods of time can put a lot of stress on our bodies…which is why having good posture is so important.**

- **"Slouching" puts unnecessary strain on your back.**
  - Instead of slouching, you should stand up straight, and maintain "neutral positions" as much as possible.

- **"Neutral positions" place the least amount of stress on your body.**
  - They distribute the weight of your head and your upper body evenly over the vertebrae, discs, and muscles of your back.

- **You can avoid "hunching over" by raising your work surface, or positioning your work on a sturdy box or other platform to bring it up to a comfortable level.**

- **Placing one foot on some sort of footrest will also help to reduce stress on your spine by maintaining a healthy curve in the lumbar region.**
  - Remember to alternate the legs that you raise.

- **When you are seated, the key to achieving neutral positions is to adjust your chair to fit both you and your workspace.**
  - Your seat should be high enough so that your forearms are at about a 90-degree angle to your upper arms, and are level with your work surface.
  - Your feet should rest flat on the floor, with your thighs at right angles to your lower legs.

- **If your feet don't reach the floor after you adjust your chair to suit your upper body, get a footrest to support them.**
  - Don't "dangle" your legs…it puts stress on your lower back.

- **To help maintain your spine's natural "S" curve, make sure your lower back is firmly supported when you are seated.**
  - If your chair doesn't provide enough support on its own, place a "lumbar cushion", small pillow, or rolled-up towel behind your back.

- **Don't get "stuck" in one position for too long.**
  - Take a break now and then to get up and stretch.

- **Most of the back injuries that happen in the workplace occur when people lift things the wrong way.**
  - Sometimes the object is too heavy for them…or it's too bulky to carry safely… or they try to lift it while they're in an awkward position.

- **But most of the time, employees hurt themselves by bending at the waist when they lift.**
  - Bending at the waist multiplies the weight of your upper body…and anything that you pick up and carry…by a factor of ten!
  - All of that pressure is focused on the vertebrae in your lumbar spine…so that 30-pound box you're lifting puts an additional 300 pounds of weight on your back.

- **To avoid problems caused by bending at the waist, remember to "think before you lift".**
  - Don't do any lifting if your back feels stiff or painful.
  - Consider the load's size, shape, and weight.
  - If it's too heavy for you to pick up easily, or it's bulky or hard to grasp, as a co-worker to give you a hand, or use a hand truck or dolly.

- **When you <u>do</u> decide to make a lift by yourself…**
  - Get close to the object.
  - Lower yourself by bending at the knees.
  - Consider the load's size, shape, and weight.
  - Keep your shoulders level and centered above your hips.
  - Grasp the load securely.
  - Keep your back straight.
  - Lift the load slowly and steadily…with your legs.

- **Leaning forward when you lift is as hazardous as bending at the waist.**
  - So slide objects toward you and get them
  - as close as you can before you lift them.

- **You should keep your back straight while you're carrying a load as well.**
  - If you need to turn, change direction by moving your feet. Do <u>not</u> twist at the waist.

- **When it's time to put the load down, you need to…**
  - Keep your back straight.
  - Slowly bend your knees.
  - Use the muscles in your legs for control.

- **Handling things that are "up high" presents special problems.**
  - Don't lift with your arms…it puts a lot of stress on your back.
  - Instead, use a ladder or mobile stairs to climb up to where you can make the lift without straining.

- **The habits that you develop to keep your back healthy and pain-free work just as well at home as they do on the job.**
  - Safe lifting techniques come in handy when you're performing any household chores that could strain your back…such as raking leaves, shoveling snow, moving furniture, and carrying groceries.

- **Carrying small children is a leading cause of back pain.**
  - In addition to being heavy, they can suddenly shift their weight and put a severe stress on your spine.

- **Driving a car or truck can lead to neck and back pain as well, unless you adjust the seat to minimize stress.**
  - Position the seat so that your hips and knees are flexed, and you don't have to stretch to reach the pedals.
  - If the seat has a "lumbar" support, adjust it so that it provides a firm base for your lower back.
  - Remember to sit up straight when you're driving, and set the rearview mirror so that you don't have to strain your neck as well.

- **You can also help to keep your spine healthy by maintaining neutral positions when you sleep.**
  - It helps to have a nice, firm mattress.
  - If you sleep on your back, place a pillow under your knees so that your legs are slightly bent.
  - Support the natural curve of your neck with a pillow as well.
  - If you sleep on your side, you can get your legs into a neutral position by bending your knees and putting a pillow between them.
  - Avoid sleeping on your stomach…it forces your neck to twist and places a lot of pressure on the cervical section of your spine.

- **Exercise can be extremely important to your back's health.**
  - Focus on "low-impact" exercises, like walking, swimming, and bike riding.
  - "High-impact" activities such as jogging and playing contact sports can actually increase the risk of back injuries.

- **Your healthcare professional can suggest other ways for you to keep your back healthy and pain-free as well.**

*** * * SUMMARY * * ***

- **Back injuries can occur both in the workplace and at home, but you can develop healthy "back habits" to significantly reduce the chance of having back problems.**

- **Your spine supports your body with remarkable strength and flexibility, but you need to avoid straining it.**

- **You can use "neutral positions" to reduce the stress on your back when you are standing, sitting…even sleeping!**

- **With proper treatment, "acute" back pain from a strain or sprain will usually heal within a few weeks.**

- **"Chronic" back pain can indicate that a more serious condition may exist. So if your back keeps giving you trouble, see your doctor.**

- **Now that you understand how your back works and what you can do to take care of it, you should be able to keep it strong, healthy, and pain-free… every day!**