Suspension Trauma Meeting Kit

WHAT'S AT STAKE

Suspension trauma, also known as harness hang syndrome and orthostatic intolerance, occurs after a worker has fallen into a fall arrest harness and is suspended in a hanging position until rescue arrives. When hanging in a fall harness, the leg straps support the body's weight. During this time, the leg straps of the fall protection harness crush the femoral arteries on the inside of the legs, cutting off blood circulation.

SUSPENSION TRAUMA DEFINED

Suspension trauma, also referred to as orthostatic intolerance, is a natural human reaction to being upright and immobile and can be caused by a situation when a person is forced to stay upright without standing. The use of a personal fall arrest system during a fall event can be the cause of this situation.

During a fall event, several things occur that can lead to suspension trauma. Because the worker is suspended in an upright position with their legs hanging, blood begins to accumulate in the legs. This is commonly called venous pooling (the accumulation of too much blood in the veins) which reduces the flow of oxygenated blood to the heart and brain.

When venous pooling happens to someone in a standing position, they lose consciousness, faints and falls to the ground, resulting in the head (brain), heart and legs on the same level and normalized blood flow. Unfortunately, during a fall event, the harness keeps the worker upright. The worker faints but cannot collapse and circulation isn't restored.

WHAT'S THE DANGER

THE DANGER OF SUSPENSION TRAUMA

Suspension trauma is simply fainting in a harness. It will happen to anyone who is held in an upright position and with their legs immobile. You don't need to be ill, injured, or even in a harness to suffer the condition and if you don't stop its progress, then you will lose consciousness and eventually die.

The critical factor is decided by one question: can a worker become suspended in

a harness for more than a few minutes? If the answer is yes, they are at risk from suspension trauma. For the purposes of a risk assessment, you must satisfy this simple rule: any worker must be rescued or repositioned to raise their knees within 10 minutes of falling. If you cannot meet the rule, find another way to do the job. In a true sitting position, patients can last over an hour. Your rescue plan should therefore work towards recovery-to-ground as soon as possible, but the first priority is raising the knees. You have to do that inside the 10-minute window.

WARNING SIGNS OF SUSPENSION TRAUMA

It is important to know the warning signs associated with suspension trauma. They include faintness, breathlessness, sweating, paleness, hot flashes, increased heart rate, nausea, dizziness, unusually low heart rate, unusually low blood pressure and loss of vision.

HOW TO PROTECT YOURSELF

PREVENT SUSPENSION TRAUMA

In a crisis, workers should try to move their legs as much as possible to restore proper blood flow. They can try pumping their legs midair or pushing off from a hard surface to keep their muscles active. Sitting midair or hanging in a horizontal position can reduce the effects of suspension trauma, as well.

Choose The Right Safety Equipment

To prevent poor circulation and fainting, use a harness with suspension trauma relief straps. The straps run from the neck and shoulders of the worker down to their legs. The person can then use the bottom of the strap to stand up midair, so they can still use their feet and legs. This prevents blood from pooling in the lower half of the body. Blood will flow naturally throughout the body, so the person can maintain their balance until help arrives.

Safety harnesses are part of a system designed to arrest falls, but suspension trauma relief straps provide another layer of protection. They give workers the support they need to stay safe in the air.

What Workers Need to Know About Being Suspended in a Fall Arrest Harness

Trapped worker can actually help in their rescue by keeping their blood circulating. One way to do this is to deploy the foot straps. Once deployed, workers stand on the foot straps to keep the harness from cutting off blood flow to and from their legs.

Other Things Workers Should Know When Suspended in a Fall Arrest Harness:

- Continuously pumping the legs activates the muscles and keeps the blood circulating.
- Pushing off against a hard object, like a nearby building, helps keep the muscles active. As the worker swings away from the building, they will eventually swing back toward it, and can push off again.

What Workers Need to Do to Help Rescue a Coworker Suspended in a Fall Arrest Harness

- When a fall occurs, call 9-1-1 right away. One person makes the call while the other workers immediately begin rescue procedures according to your fall protection plan.
- The rescue must be quick to prevent the suspended worker from losing consciousness. Maintain regular communication and encourage the worker to continue moving the legs. Ask if they’re experiencing any symptoms such as faintness, dizziness, nausea, paleness, or narrowing of vision.

SUSPENSION TRAUMA TAKEAWAYS

- You must do everything possible within 10 minutes to rescue anyone who is hanging in a harness.
- Raise the casualty’s knees into a sitting position – even if you cannot rescue them.
- Call for urgent help, even if they are not injured.
- During rescue, never allow them to lie on the ground.
- Keep them sitting up for 30 minutes after rescue, and force ambulance staff to follow these instructions.
- Send anyone who you think has suffered suspension trauma to hospital.

FINAL WORD

There are simple steps that can be taken to mitigate the hazard of suspension trauma, including trauma straps on all fall gear, a fall protection plan for all work at heights that includes a rescue plan, and training on the hazards within the use of fall protection equipment.