

# ACCEN MAGAZINE

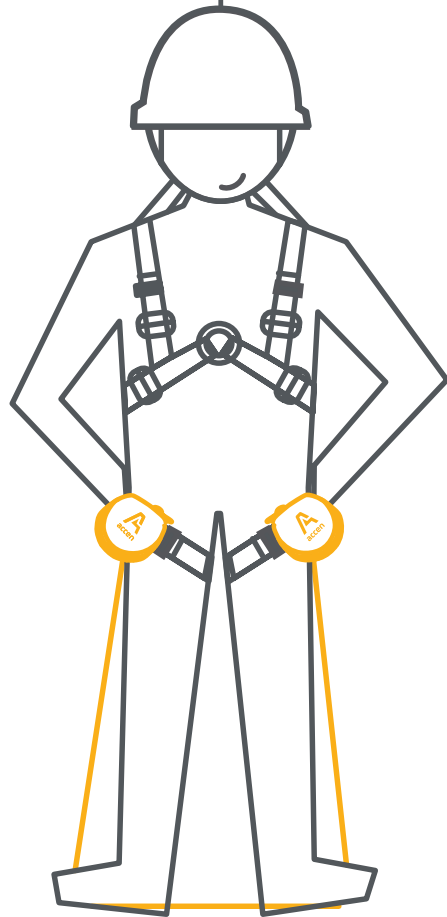
ACCEN  
SHOTS  
nr 05 2020



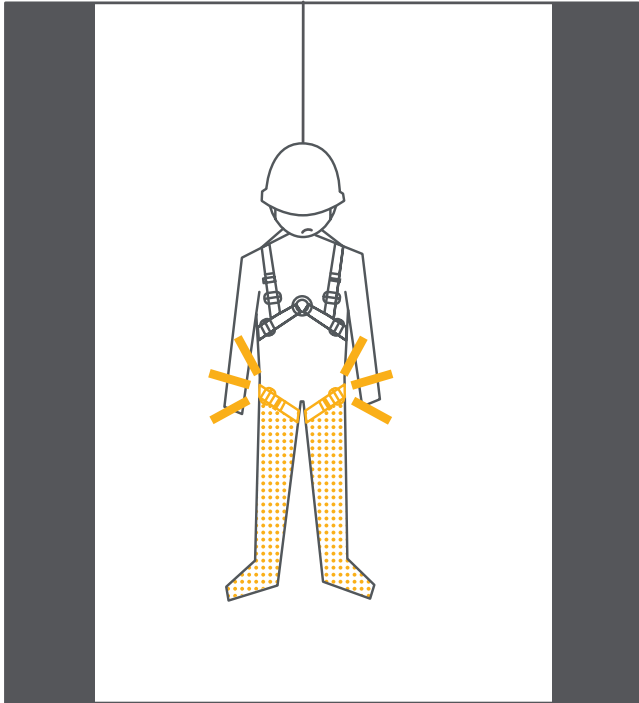
[www.accen.info](http://www.accen.info)

## SUSPENSION TRAUMAS

Definition  
Symptoms  
Procedure – rescue straps  
First aid  
Summary



Suspension trauma is defined as the state of shock caused by lack of blood circulation in the lower extremities due to passive hovering in the safety harness. It occurs when the human body is suspended in an upright position without movement for a certain period of time. This can occur when an employee hangs in a safety harness, e.g. due to a fall from a height. Then the inert mass of your own body causes the pressure of the safety harness straps on the femoral arteries. The muscles of the lower extremities must contract so that blood can return to the heart. The pressure on the femoral arteries prevents this by causing blood to lodge in the lower extremities.



The onset of symptoms appears after about 3 minutes of inert hanging, and after about 20 minutes there is a developed set of symptoms.

Common symptoms include pallor, sweating, shortness of breath, blurred vision, dizziness, nausea, hypertension and numbness in the legs.

As a result, fainting occurs, which can lead to death due to cerebral hypoxia. In a normal situation, the human body defends itself by overturning, which causes the blood to flow back to the brain, and the bloodstream to function normally again. Of course, this will not happen in a hovering situation and special measures are required for prevention and first aid.

## Symptoms of shock



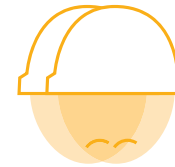
pallor



sweating



shortness of  
breath



blurred vision



dizziness



nausea



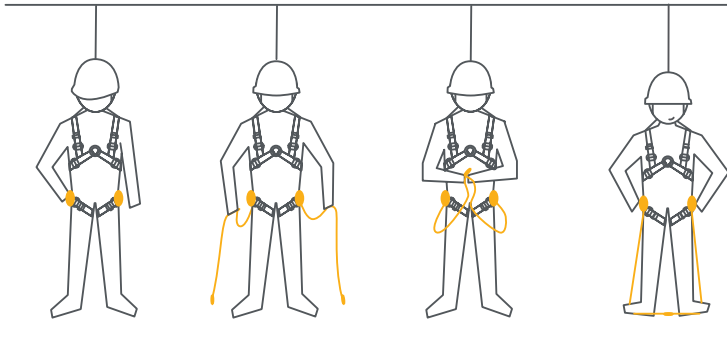
hypertension



numbness in the legs

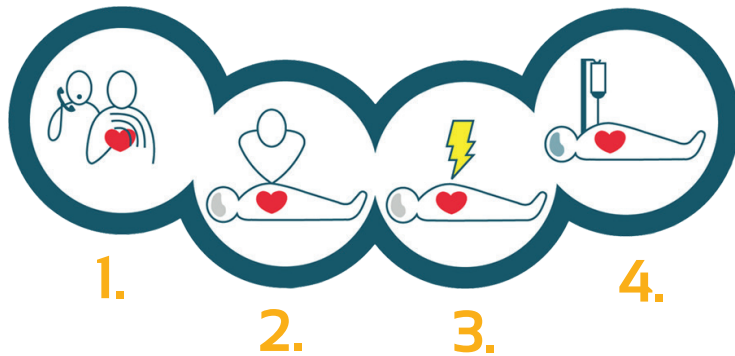
## Procedure – rescue straps

If an employee hanging in a safety harness is conscious, it is helpful to support his legs on something that will allow him to use his leg muscles. This way the blood can go back to the heart. It is not recommended to move his legs in the air. Although this would maintain the flow of blood from the legs to the torso, eventually, if a person gets tired, the legs will start to accumulate blood. **The best solution is to use rescue straps**, which form a kind of stirrup in which an employee „stands“. This relaxes the pressure on the femoral arteries and allows for leg muscle movement. The rescue straps are rolled up and fastened on the sides of the safety harness at waist height. During the rescue operation, the employee fastens the straps together, adjusting their length so as to stand in them, improving blood circulation from legs to heart.

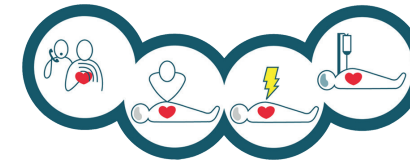


# First aid – Chain of survival

If the injured employee is unconscious, he should be evacuated as soon as possible to a place where he can be helped. If he's breathing and has circulation maintained, place him in the recovery position. In case of cardiac arrest we perform cardiopulmonary resuscitation.



source: [www.prc.krakow.pl](http://www.prc.krakow.pl)



## Chain of survival

1. Early diagnosis of cardiac arrest and calling emergency services (to prevent sudden cardiac arrest)



2. Early undertaking cardiopulmonary resuscitation (to „buy time“ for the victim)



3. Early defibrillation (to restore normal heart function)



4. Early undertaking of advanced resuscitation treatments and appropriate post-resuscitation care (to restore quality of life)

source: [www.prc.krakow.pl](http://www.prc.krakow.pl)

# First aid

After the evacuation of an employee who has been suspended for a long time, he should sit down with his legs bent for at least 30 minutes. In this position, the employee sits straight on the ground, with his back straight and legs bent, keeping his knees in line with the chin.

Sitting like this allows blood to flow slowly from legs to heart. It also helps to better filter the collected blood. The injured person must not be placed lying down, because a change in body position causes such an inflow of blood to the heart that exceeds his ability to enlarge the ventricles and, as a result, stop the circulation. Therefore, the transition to a lying down position should be gradual. Continuous monitoring of breathing and circulation is required.

Whenever an employee has been hovering for more than 20 minutes, even without symptoms, call for medical attention.

## After the evacuation...



The injured person must not be placed lying down, because a change in body position causes such an inflow of blood to the heart that exceeds his ability to enlarge the ventricles and, as a result, stop the circulation.

# Summary

A situation in which an employee may find himself in a hovering position, e.g. as a result of stopping a fall from a height, is unpredictable. Various factors such as fatigue, human error, weather conditions can lead to such an event.

It is recommended that every employee be equipped with rescue straps that can protect them from suspension trauma.

A rescue plan should always be drawn up when working at height and a team of employees equipped with equipment for evacuation from height.

SUSPENSION STRAP →



**RESPECT  
YOUR LIFE.**



## SUSPENSION TRAUMA

Effects of hovering in the safety harness



### BRAIN

Hypoxia can cause unconsciousness and ultimately death

### HEART

Hypoxia of vital organs.

### LEGS

Pressure on the femoral arteries through the harness straps. Skeletal muscles of the lower extremities do not contract, preventing blood transport to the heart. Blood accumulation in the lower extremities



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Accen Fall Arrest Sp. z o.o.  
ul. Gzichowska 115, 42-500 Będzin  
Tel: +48 602-398-006  
e-mail: [biuro@accen.pl](mailto:biuro@accen.pl)



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Accen Magazine is a combination  
of Accen Works (company projects  
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(online instructional monthly).

Accen Shots discuss issues related  
to the implementation and use of  
fall protection systems and work  
at height.