



# Slips, Trips, & Falls from Height



WE ARE THE ARMY'S HOME



Garrison Safety Office (GSO)  
U.S. Army Installation Management Command

# Issue – S T F

- STF's represents #1 cause of injury
- STF's occur in any part of the workplace whether inside or outside.
- STF's may result in serious outcomes
- STF's cost to both worker and employer can be great
- STF's is like stepping on money

## To Worker:

- pain
- lost wages
- temporary or permanent disability
- reduced quality of life
- depression

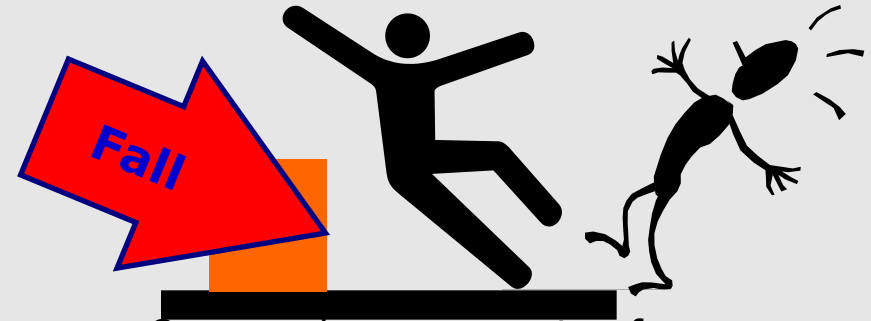
## To Employer:

- loss in productivity and business
- increased industrial insurance premiums
- costs associated with training replacement worker
- cost of medical treatment



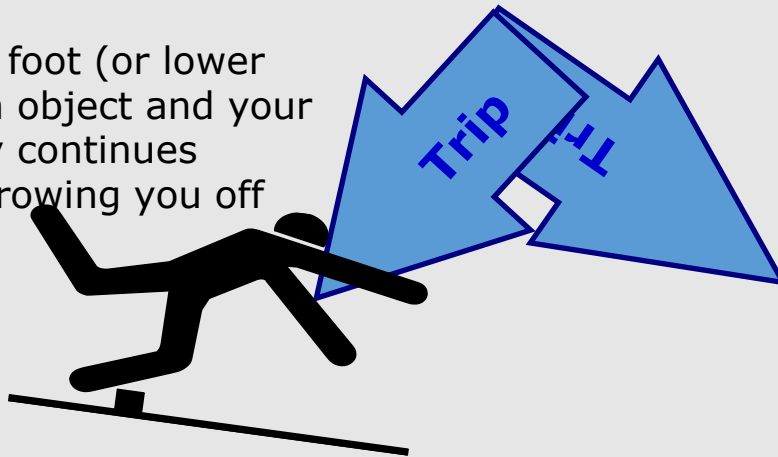
# Definition of STF

When there is too little friction or traction between your feet (footwear) and the walking or working surface, and you lose your balance.



Occurs when you are too far off your center of balance.

When your foot (or lower leg) hits an object and your upper body continues moving, throwing you off balance.



When you step down unexpectedly to a lower surface (**Misstep**) and lose your balance, e.g., stepping off a curb.



**Definition of STF Friction:** The resistance encountered when an object (foot) is moved in contact with another (ground). Friction is necessary in order to walk without slipping.

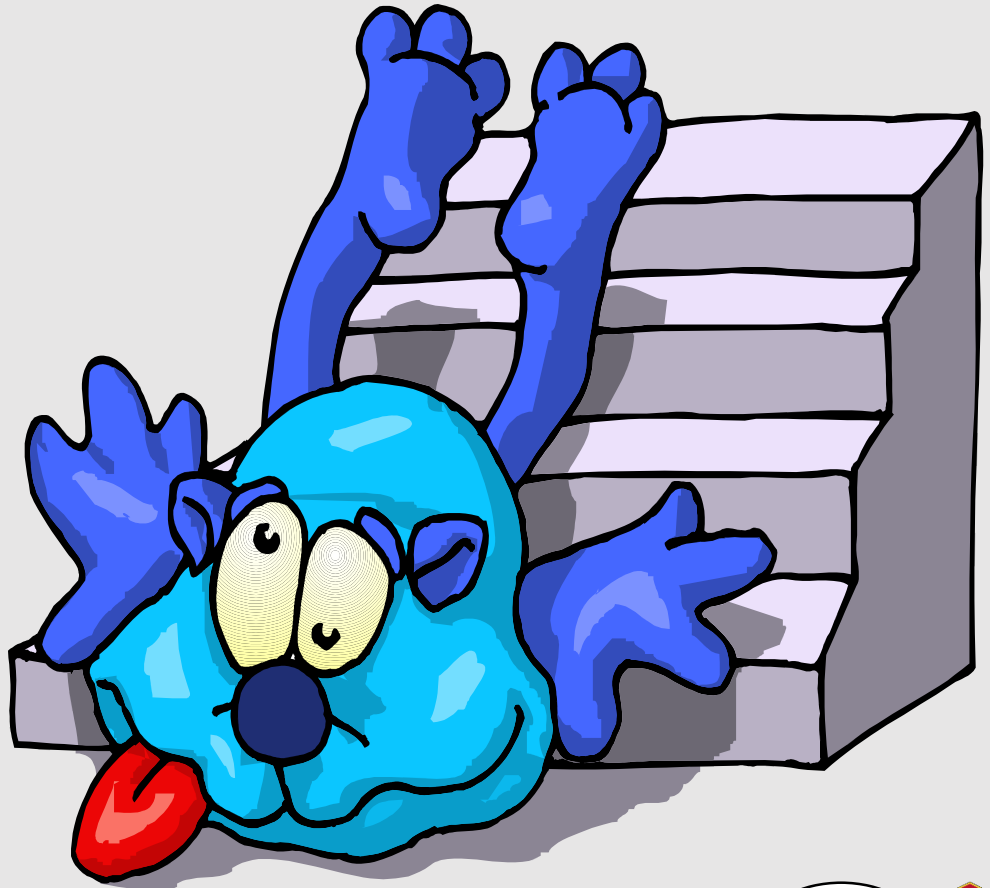
# Common types of STF Injuries:

- Sprains, strains
- Bruises, contusions
- Fractures
- Abrasions, lacerations



# Commonly affected Body Parts:


- Knee, Ankle, Foot
- Wrist, Elbow
- Back
- Shoulder
- Hip
- Head

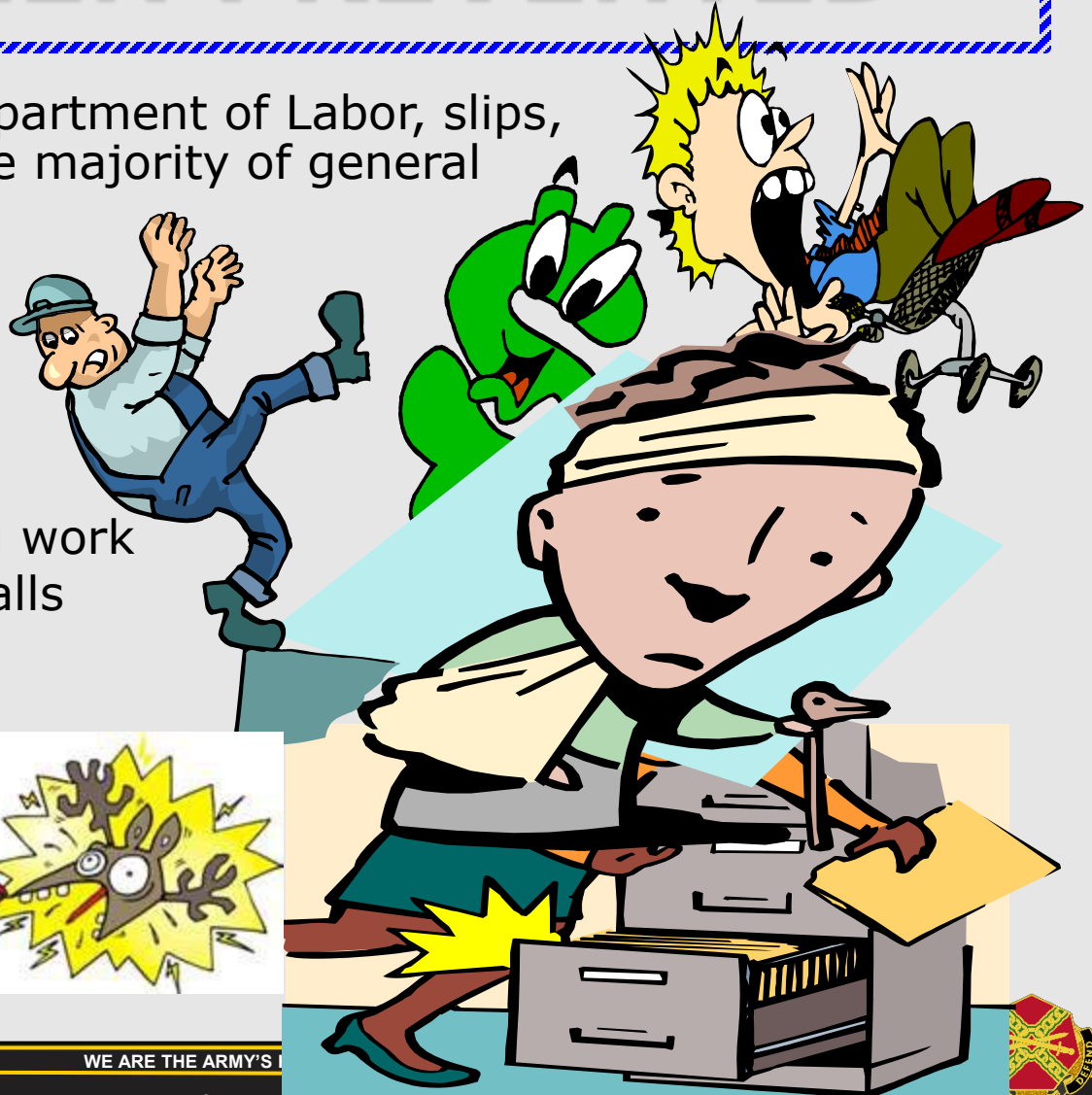






# MANY OF THESE COULD HAVE BEEN PREVENTED

- According to the U. S. Department of Labor, slips, trips, and falls make up the majority of general industry accidents.
  - 25% of reported claims per fiscal year are due to STF
  - Over 17% of all disabling work injuries are the result of falls
- 
- A cartoon illustration of a male worker in a light blue shirt, blue overalls, and a blue hard hat falling backwards off a light blue ledge. He has a pained expression, with his hands raised and eyes wide. To the right, a green cartoon character with large eyes and a wide grin is looking at the falling worker. The background is a solid light blue.



# Human Factors Increasing the Risk of Slips, Trips and Falls

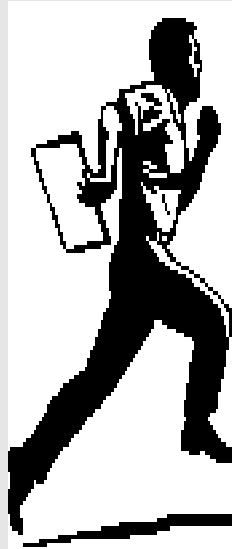
## Factors of STF

Health and physical condition can impair a person's vision, judgment, and balance.

- Eyesight, visual perception
- Age
- Physical state, fatigue
- Stress, illness
- Medications, alcohol, drug

Behaviours – actions you choose and control can contribute to a slip, trip, and fall injury if you set yourself up for one.

Carrying or moving cumbersome objects, or too many objects, that obstruct your view impair your balance and prevent you from holding onto handrails



Poor housekeeping (allowing clutter to accumulate, not maintaining clean dry floors, etc.)

Using improper cleaning methods (e.g., incorrectly using wax or polish; or trying to clean up grease spill with water)

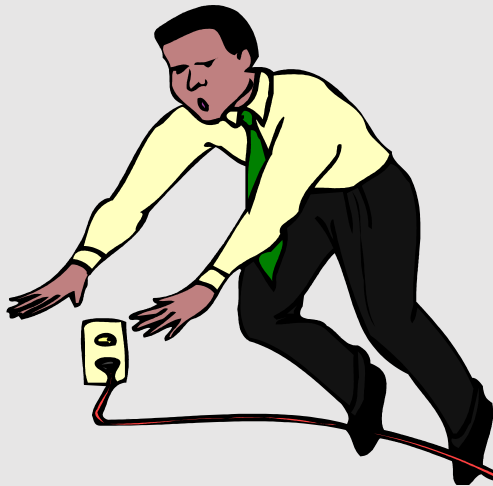
Not using signage when slip or trip hazards exist

Inattentive Behavior: walking, distractions (e.g., using cell phone, talking and not watching where you're going, etc.)

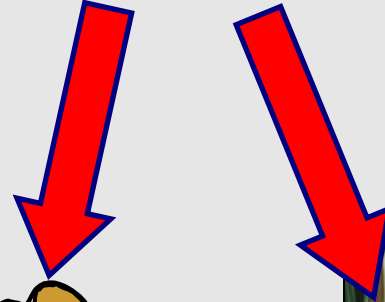
Taking shortcuts; not using walkways or designated, cleared pathways; being in a hurry, rushing around

# Factors Increasing the Risk of Slips, Trips and Falls

**Not Paying Attention**



**Clutter**





# Factors Increasing the Risk of Slips, Trips and Falls

**Not Paying Attention**



**Improper Method of Carrying Items**



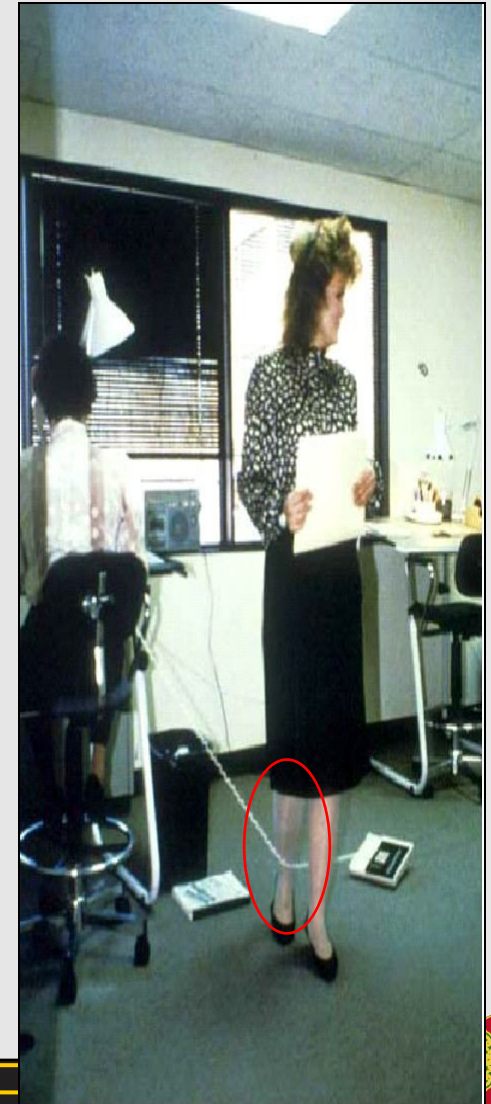
# Factors Increasing the Risk of Slip, Trip and Falls to Look Out For



**Report these dangers**

# Housekeeping

- Close file cabinet or storage drawers
- Report cables/wires that cross walkway
- Keep working areas and walkways well lit and clear
- Report burned out bulbs
- Be aware of your surroundings and report any perceived danger





# Housekeeping DON'Ts.....



- Prop fire doors open.
- Store materials in stairwells.
- Store trash cans in front of doorway.
- Use cinderblock to prop open the doors.
- Use chair to block an emergency cut-off valve.
- Place chairs in dangerous areas. For example, the chair in the picture could represent a struck against hazard. Someone could sit in the chair, and strike their head on the pipe and valve behind it.
- This chair could also encourage smoking in the stairwell.

**Do.....**  
**Report these dangers!**



# Slip, Trip and Fall Hazard



## PROBLEM

*Slip*: if it is wet outside and the mat is folded back, then the floor is getting wet instead of the mat absorbing the water.

*Trip*: the mat is folded back and someone could catch their foot on the mat and trip.

*Fall*: both a wet floor and caught foot could contribute to a fall.

**Report this danger!**



# Can you identify the hazard



This slide represents a trip hazard. Here you can see an electrical cord in the middle of the walkway. This cord is plugged into an electrical outlet.

Contact Facilities Management to rearrange the room so that the piece of equipment is close to the outlet or have an additional outlet installed.

If there is no way to rearrange the room or install a new outlet, then run the cord up the wall across the ceiling and down the wall to prevent the trip and fall hazard.

The last resort would be to tape down the cord or use a cord cover as a means of preventing someone from STF.

**Report this danger!**





# Be Mindful of these Other Causes of Injuries

- Metal - cuts, bruises and abrasions
- Teeth - bites
- Vehicle – cars, golf carts, buses, etc
- Coffee containers – burns
- Needles/Scales – sticks, pricks
- Electrical devise - shocks
- Falling objects, e.g. hammer



**CARE MUST BE TAKEN TO PREVENT INJURIES  
THAT MEANS YOU!**



# **Fall Protection Locations Required**

- **Unprotected sides & edges**
- **Leading edges**
- **Hoist Areas**
- **Holes**
- **Form work & reinforcing steel**
- **Wall openings**
- **Precast concrete erection**
- **Dangerous equipment**

## Fall Protection Locations Required

- Ramps, runways, & other walkways
- Steep slope roofs  $>4/12$
- Low slope roofs  $<4/12$
- Protection from falling objects
- Overhand bricklaying
- Excavations, pits, wells & shafts
- Walking/working surfaces not otherwise addressed



## Duty to Provide Fall Protection

- **Protection to be at 4' or greater above work/walk surface in general industry**
- **Walk/work surface to be inspected prior to work commencing**
- **Employees can only be on any surface strong enough to adequately support them without failure**





## Leading Edge Work

• Each employee constructing a leading edge 6' or more above lower levels must be protected from falls by:

- Guardrail systems
- Safety nets
- Personal fall arrest

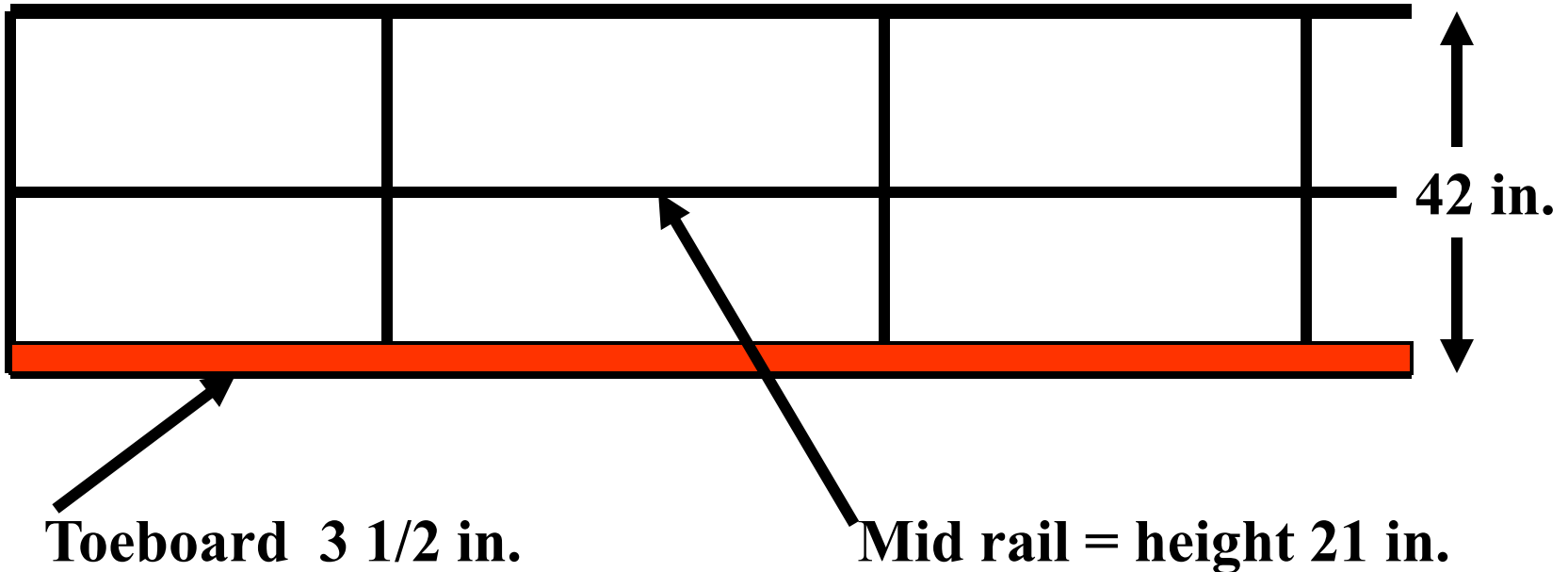


## Guardrail Systems

- **Toprail @ 42" +/- 3" must meet 200 lb force**
- **Midrail @ 21" +/- 3" must meet 150 lb force**
- **Toeboard 4"**



# Guardrail Systems



**3 1/2" nominal (2X4 meets this)**

## **Guardrail Systems Wire Rope**

- **Wire rope guardrail flagged for visibility every 6 feet.**
- **Wire rope may not deflect more than 3” (not below 39” from walking surface).**



## Holes in Walking Surface

- All holes 2" diameter or larger must be covered.
- Marked **COVER** or **HOLE** or color coded.
- Must be secured to prevent displacement.
- Must support 2X the maximum intended load (equipment, employees, and/or materials).





# Personal Fall Arrest Systems



- **Must be inspected prior to each use.**
- **Equipment worn in fall event must be retired from service.**

# Personal Fall Arrest Systems

- **Full body harness must limit arresting force to no more than 1800 lbs.**

- **Nylon strap lanyard = 2800 lbs**
- **Nylon rope lanyard = 2300 lbs**
- **Steel rope lanyard = 4000 lbs**
- **Shock absorbing lanyard = 900 lbs**



## Personal Fall Arrest Systems

- ✓ **Lanyards must have breaking strength of 5000 lbs.**
- ✓ **Lanyard to attach on harness between employees shoulders.**
- ✓ **Self retracting lifelines must stop a fall in 2' maximum & have 3000 lb strength.**



## Fall Arrest Anchor Points

- ✓ **Must support 5000 lbs. per employee.**
- ✓ **Can be designed by a qualified person to meet a safety factor of 2.**
- ✓ **Limit employee fall to 6' & not contact lower work/walk surface.**



## Fall Clearance Distance

- To ensure an employee does not strike the floor or other structure – 12.5 to 19.5 feet of clearance distance is typically needed.



## Training Requirements

- **Employer must train each employee who might be exposed to fall hazards. This training must enable the employee to recognize hazards of falling and how to minimize these hazards.**
- **Employees must be trained by a competent person.**

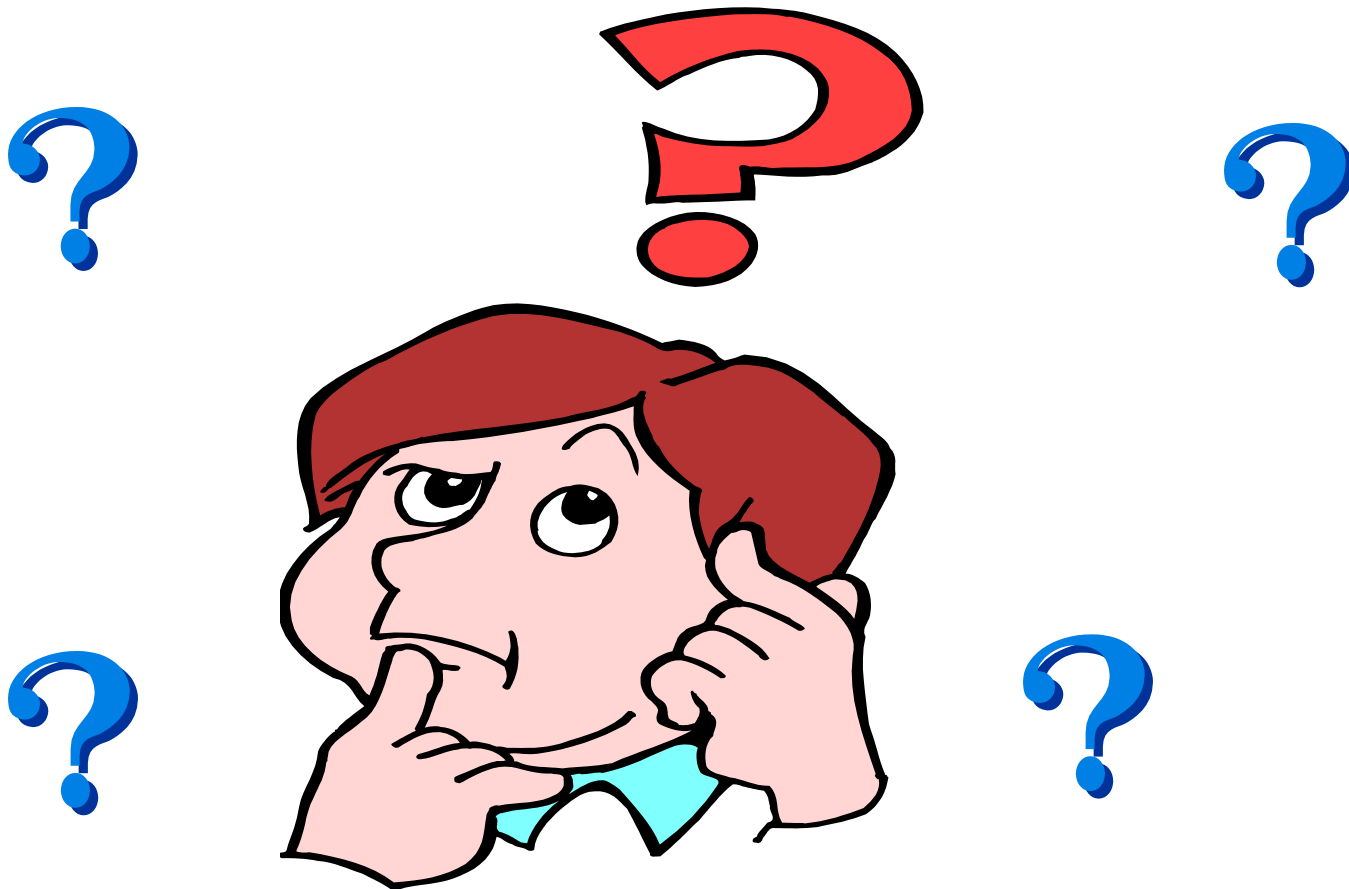






*.....for taking the time to learn about safety  
and health and how to prevent future injuries and  
illnesses.*

# Questions



E-Mail: [risk@nova.edu](mailto:risk@nova.edu)

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