

Hello,

The folders on in the 2016 Annual Safety Training file contain the materials the presenters used for their safety topics. I apologize that both recordings of the first and second session were cut short. Only the first 28 minutes of the presentations were recorded. This must have been a limitation of the camera and was not discovered until after the training. The .mov file contains the opening remarks and about half of Jim Muscovich's presentation.

Please review the materials provided by the presenters in the respective folders for an overview of each topic. I would be glad to meet with anyone to discuss the training in more detail or feel free to give me a call anytime with questions and comments.

Service first, Safety Always!

Greg Coleman

Safety Coordinator

## All-County Safety Training 2016

7-20-16

Welcome to our 2016 All-County Safety Training. My name is Greg Coleman and I have the pleasure to serve as your Safety Coordinator. Really, it's a pleasure, because I LIKE SAFETY.

Safety is important. When we make an intentional effort to be safe, we make life better. Starting with each one of us, our safe acts, like ripples across a pond, touch our families, friends, co-workers, and strangers alike. Being safe helps prevent injury - and the pain, inconvenience and expense associated with accidents.

I say "intentional effort" because safety isn't a one and done. After today's training, you are not certified safe for another year. Knowledge from a class does not make you safe. Using proper personal protective equipment does not make you safe. Following policy and procedures does not make you safe. Those are all tools that can help, but safety comes from the inside. It is an attitude, an awareness, a continuous decision. Being safe, working safe is what the public, our employers, expects from us and what we all deserve.

Service First, Safety Always.

I hope you can stay for the Health Department's BBQ Lunch prepared by your favorite Commissioners at noon.

And we have prizes...Jill can you tell us about the prizes?

We have a great line-up of training today. Starting us off is Jim Muscovich with MACo. He is going to share his extensive experience on Incident Reporting/Accident Investigation and Slips Trips and Falls.

---

The Sheriff's department regrets they will not be able to lead the Active Shooter Training due to an unexpected change of plans. Active Shooter or Threatening Person is an emergency covered in our Emergency Action Plan.

## The Emergency Action Plan

The Emergency Action Plan is our plan for danger in the workplace.

- Two days ago, the Attleboro courthouse was evacuated – the danger, bed bugs and lice.
- July 15<sup>th</sup>, Broward County courthouse – escaped murder suspect.
- July 11<sup>th</sup>, Berrien County Courthouse shooting.
- July 7<sup>th</sup>, Spokane courthouse evacuated – employees sickened by a malicious mail sent to the judge and prosecutor.
- June 29<sup>th</sup>, Josephine County Courthouse, Grants Pass Oregon, - evacuated due to suspicious package.
- June 27<sup>th</sup>, Norfolk Courthouse evacuated – Inmate tampered with sprinkler head setting off the sprinkler system and fire alarm for the whole courthouse.
- June 27<sup>th</sup>, Nueces County courthouse evacuated for bomb scare.
- June 23<sup>rd</sup>, Miami Dade Courthouse evacuated – Bomb threat.
- June 23<sup>rd</sup>, All-clear issued after bomb scare at the Hinds County Courthouse.
- June 20<sup>th</sup>, Detroit City Hall evacuated on report of possible gunman.
- June 20<sup>th</sup>, Ocean City Courthouse evacuated – bomb threat.
- Madison County Courthouse closed due to unknown sulfur-like odor.
- May 3<sup>rd</sup>, Fort McMurray courthouse evacuated with the rest of the town due to wildfire.

From rural settings just like ours to the big cities across America, courthouses are becoming more dangerous every year. There are two options when danger comes to our workplace – Shelter in Place or Evacuate.

## Review Emergency Action Plan

Right now there are two methods of warning. The fire alarm and our phone intercom system using \*85. Department Heads are responsible for evacuation of your workspaces and any public that may be present. At your next staff meeting, I would ask that you discuss any special needs you have in your workspace – sensitive information, money, etc.... and write down what your staff needs to do to evacuate safely from your office/workspace. Ideally, everyone would leave at once, but some departments have special considerations. Also consider how you will assist anyone with special needs and how you will account for everyone that was working at the time of the evacuation. Our updated Emergency Action Plan will be a combination of your office/workplace plan and the County plan.

Beyond our plans, we must be vigilant and aware of our surroundings. Every time I see an unattended bag, I report it to law enforcement. How about strange people hanging around? If you feel uncomfortable or unsafe, report it by calling 911. Most of the time, it's nothing, and that's OK. The goal is to catch the one time it is something before people are injured.

# Park County

---

Accident Investigations and  
Slips, Trips, and Falls



Park County

INCIDENT / ACCIDENT INVESTIGATIONS

# Park County

- Safety Incident Procedures
  - Identify Extent of Incident or Accident
  - Secure Area So As To Reduce or Abate Hazards
  - Determine if Event is an Incident or an Accident
  - Document Details of Incident / Accident
  - Detail:
    - Position
    - People
    - Parts
    - Paper



# Park County

- Identify Extent of Incident
  - Are There Hazards That Require Addressing Immediately?
  - Does Incident or Accident Involve Injuries?
  - Will Incident or Accident Incur More Than \$500 In Costs?

# Park County

- Secure Area So As To Reduce or Abate Hazards
  - Utilize Staff To Prevent Others From Entering Affected Area
  - Utilize Barriers To Prevent Others From Entering Affected Area



# Park County

- Determine If Event Is An Incident or Accident
  - Was The Event A Near Miss?
  - Will Incurred Costs Be Over \$500?
  - Was The Event Preventable?

# Park County

- Document Details of Incident / Accident
  - Utilize Approved Format For Documentation
  - Ensure That All Witnesses Provide Information Of The Event



# Park County

- Detail:
  - Position:
    - Position of:
      - People
      - Equipment
      - Materials
      - Other Relevant Factors In The Area Of The Event



# Park County

- Detail:
  - People
    - Name of Individuals Present During The Time of The Event
    - Title/Position Individuals Present During The Time of The Event
    - Title/Position Individuals Who Should Be Involved In The Investigation

# Park County

- Detail:
  - Parts
    - What Were Staff Utilizing During The Event?
      - Tools
      - Equipment
      - Materials



# Park County

- Detail:
  - Paper
    - Training Records
    - Maintenance Logs
    - Job Safety Analysis
    - Schedules
    - Procedures
    - Inspections



Park County

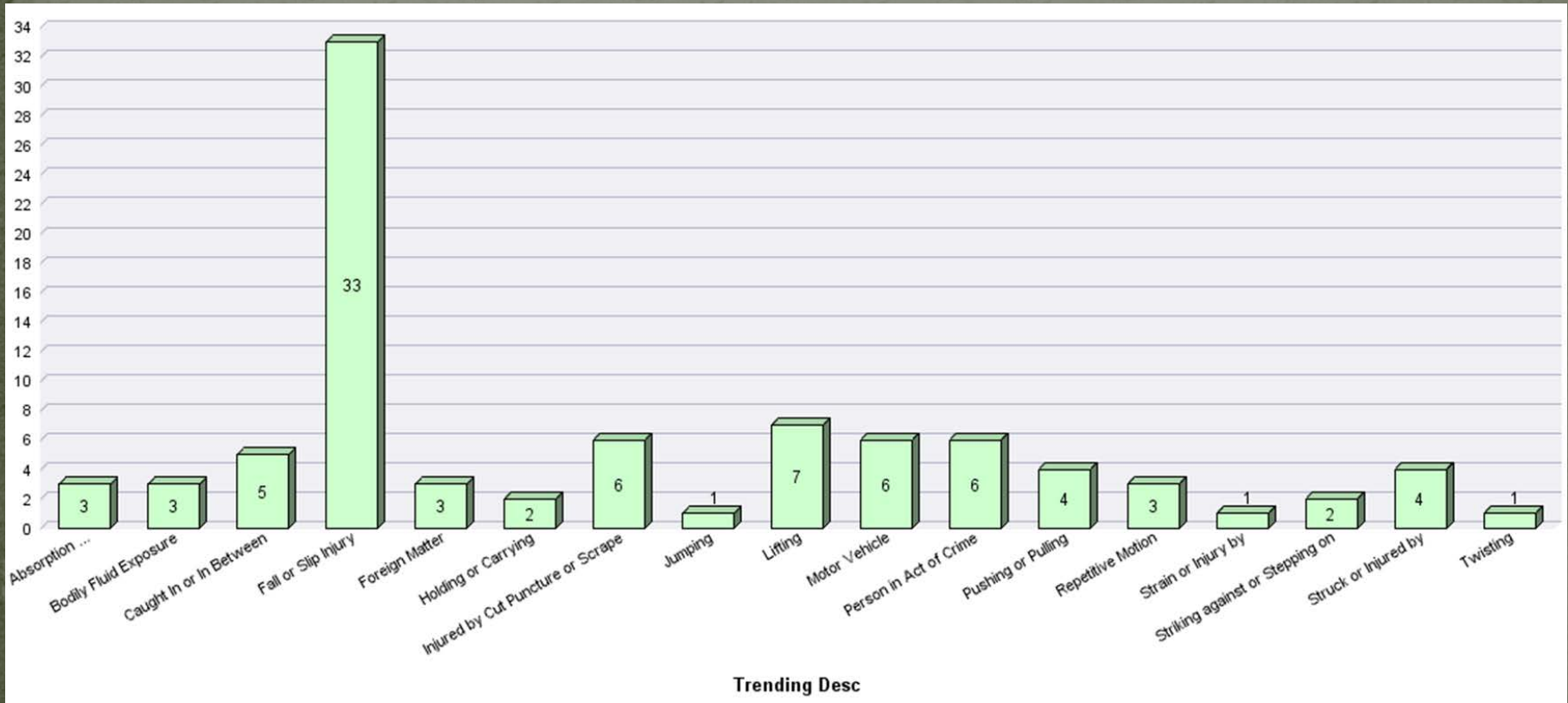
SLIPS, TRIPS, AND FALLS

# Park County

- Count by Trend
- Policy Year: 07/01/2010 to 06/30/2016

Park County

7/2/16 4:34 AM



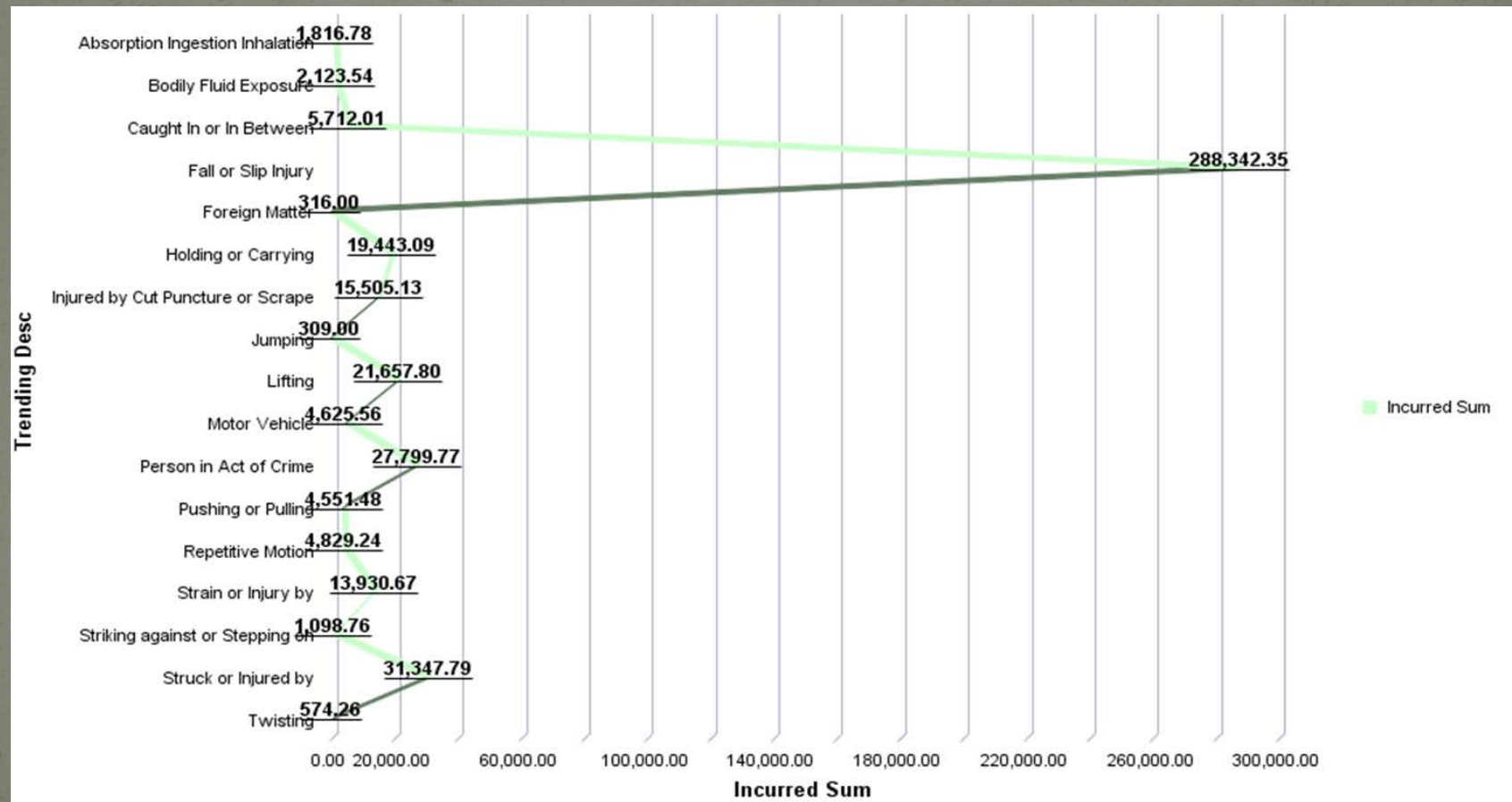


# Park County

- Incurred Cost by Trend

Park County

Policy Year: 07/01/2010 to 06/30/2016





# Park County

	Fall or Slip Injury
7720 Sheriff	9
8743 Municipal	6
8810 Clerical	5
9016 Fair Board	1
9410 Administrative	4
9420 All Other Employees	8



# CARBON MONOXIDE

The  
Silent Killer!

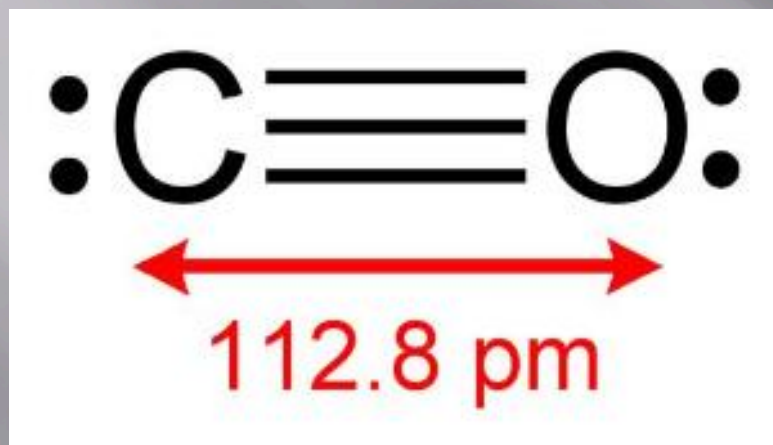
Park County Safety Day  
July 20, 2016

# Purpose/Intention of this Presentation

- ▣ This Presentation Was Designed to Give General Information About Carbon Monoxide for:
  - ▣ General public
  - ▣ Park County Employees
  
- ▣ This Presentation is Merely a General Informational Guide About:
  - Carbon Monoxide (CO)
  - CO Accidental Poisoning, AND
  - Detection, Symptoms, Tools and Treatments
- ▣ This Presentation is NOT Intended to be a Comprehensive, All Encompassing Resource about CO



# What Is Carbon Monoxide?

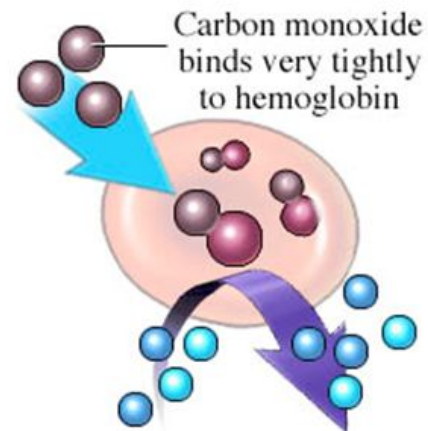
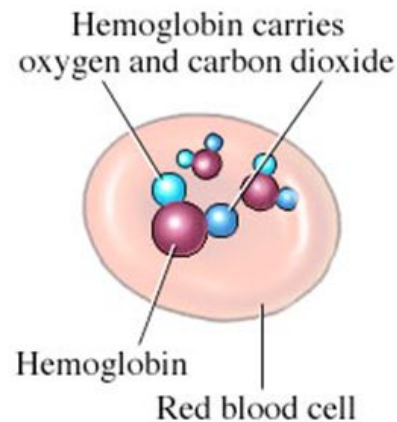


- ▣ CO is a compound of Carbon and Oxygen
  - ▣ One atom carbon to one atom oxygen
- ▣ Colorless
- ▣ Odorless
- ▣ Tasteless
- ▣ POISONOUS Gas

# How CO Affects You

## Gas Exchange and Transport

- ▶ **Carbon monoxide threat**
  - ▶ Hemoglobin has a higher affinity for carbon monoxide than oxygen
  - ▶ Carbon monoxide prevents proper oxygen transport causing carbon monoxide poisoning



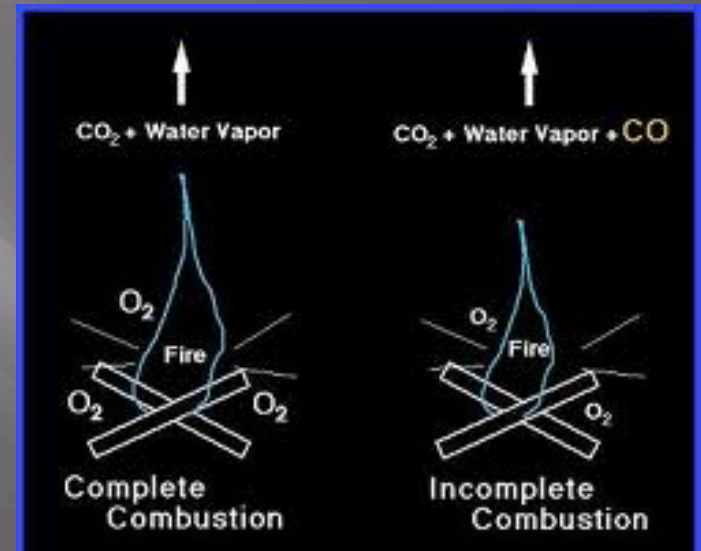
Oxygen and carbon dioxide  
can no longer be carried



# Where Does It Come From?

- CO is Produced by the Incomplete Combustion of Various Fuels (Hydrocarbons) , Including:

- Coal
- Wood
- Charcoal
- Oil
- Kerosene
- Propane
- Natural Gas



Note production of CO from the fire on right

# Common Causes of Incomplete Combustion



- ▣ Smoldering Fires
- ▣ Burning Wet or Green Wood
- ▣ Lack of  $O_2$  During Combustion
- ▣ Malfunctioning Appliances
- ▣ Malfunctioning Exhaust Systems
- ▣ Malfunctioning equipment (vehicles and forklifts)
- ▣ Space Heaters



# Complete Combustion

- ▣ When a Hydrocarbon Burns Completely
- ▣ Usually in Environment Abundant in Oxygen
- ▣ Emitting Carbon Dioxide & Water
- ▣ Zero Emissions of CO
- ▣ Makes Indoor Gas Cook Stoves Safe (right)



Note the bright blue & uniform flames- indication of Complete Combustion

# Common Sources of Carbon Monoxide Pollution (at home)

WATER HEATERS &  
FURNACES



FIREPLACES





# Sources (Cont.) (at home & work)

VEHICLE EXHAUST



FORKLIFTS



# More Sources- Common in Power Outages

PORTABLE GENERATORS



PORTABLE PROPANE  
HEATERS





# Yellowstone Club Fatality

- ▣ December 2007.  
Masonry worker in the Yellowstone club died due to CO poisoning from portable space heaters. House under construction was wrapped in plastic to keep heat in. It also kept the CO in.



# The Hidden Dangers of CO

- ▣ Carbon Monoxide Poisoning is the Most Common Exposure Poisoning in the United States
- ▣ Carbon Monoxide is Not Easily Recognized Because the Signs and Symptoms Are Similar to Those of Other Illness
- ▣ This Odorless, Colorless Gas Can Cause Sudden Illness and Death





# Prevent Accidental CO Poisoning

## List of DO's

### DETECTORS

UNITS WITH DIGITAL READOUT  
BETTER THAN UNITS WITHOUT

- ▣ DO- Install a Battery-operated CO Detector In Your Home
  - check or replace the battery when you change the time on your clocks each spring and fall
- ▣ If the Detector Sounds Leave Your Home Immediately and Call 911.



# Prevention DO's

- ▣ DO- Have Annual Inspections of Your Solid-Fuel and/or Gas Appliances in Your Home By a Qualified Technician; Including:
  - Home Heating Systems
  - Water Heaters
  - Fireplaces & Chimneys
  - And Any Other Gas, Oil, or Coal Burning Appliances

# Prevention DO's



- ▣ DO- Seek Prompt Medical Attention If You *Suspect* CO Poisoning
- ▣ You and/or Family Feeling:
  - Dizzy
  - Light-headed
  - Nauseous
    - ▣ Especially if CO Alarm is Sounding



# Prevention DO NOT's

- ▣ DO NOT- Use The Following Appliances Inside Your Home, Basement, or Garage or Near a Window:
  - Portable Generators
  - Charcoal Grills
  - Camp Stoves
  - Any Other Gasoline or Charcoal-Burning Devices

# Note on Portable Generators

- ▣ During Power Outages Place Portable Generators at Least 50 Feet From Your Home
- ▣ If Possible, Place Generator Downwind and Away From Any Openings in Your Home:
  - Windows
  - Doors
  - Vents/Air Intakes



# Cheyenne Frontier Days Fatality

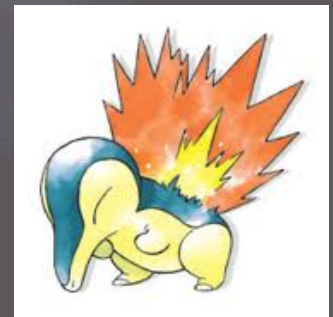
- ▣ July 2012. Broc Cresta died during his sleep in his horse trailer after competing at the Cheyenne Frontier Days Rodeo. He had the generator running during the night which emitted CO into the living quarters.





# Prevention DO NOT's

- ▣ DO NOT- Run a Car or Truck Inside a Garage Attached to Your House
  - Even if You Leave the Garage Door Open
- ▣ DO NOT- Burn Anything in a Stove Or Fireplace That Isn't Vented to the Outside
- ▣ DO NOT- Attempt to Heat Your House With A Gas Oven



# What To Do?

- ▣ If You Suspect the Presence of CO in Your Home and/or Office:
  - Immediately Evacuate the Building of ALL People
  - Evacuate Pets (if you can do so Safely and Quickly)
  - Call 911- From Outside
    - ▣ From Cell Phone
    - ▣ Neighbor House/Business
  - DO NOT Re-Enter the Building Until Safe to Do So-
    - ▣ Typically After Building Deemed Safe by:
      - Fire Department, and/or
      - Your Gas Company (such as Excel)

# What to do (Cont.)

## DO NOT

- ▣ Please Do Not Open Windows & Doors
  - This is a Common Reaction
- ▣ A Closed Building Helps Fire/Gas Company
  - Learn Full Exposure Levels
  - Potentially Locate Source(s)

## REASONS FOR CO SUSPICION

- ▣ CO Detector Alarming
- ▣ Sudden and/or Extreme Headache-
  - Especially Multiple People in Same Building
- ▣ For More Symptoms See “Symptoms” Slides Later in this Presentation



# Understanding Your Detector



Specific brands not recommended, we suggest detectors with digital readers give you more accurate information than those without

- ▣ Read & Understand Detector Instructions Before Use
- ▣ Detectors Should Be Battery Operated or Backed Up
- ▣ Check/Change Batteries Each Time you Change Your Clocks (Daylight Savings)
- ▣ If your CO Detector Sounds, Call 911 For Assistance

# Exposure Limits

- ▣ A Properly Ventilated Building With Properly Functioning Appliances Should Have Zero CO Present
- ▣ Generally Speaking, Levels Between 0-5 parts per million (a Measurement of Substance in Air, Indicated by the Letters- ppm) are Commonly Found Indoors and is Considered Safe
- ▣ For Greater Details, Please See “Exposure Limit Details” in safety guides, CDC or on [OSHA.gov](https://www.osha.gov)

# Symptoms of CO Poisoning

- ANY OR ALL OF:
- Headache
- Dizziness
- Irritability
- Confusion/Memory Loss
- Disorientation
- Nausea and Vomiting
- Abnormal Reflexes
- Difficulty in Coordinating
- Difficulty in Breathing
- Chest Pain
- Cerebral Edema
- Convulsions/Seizures
- Coma
- Death



# Symptoms (Cont.)

BE HIGHLY SUSPICIOUS  
OF CO POISONING IF:

- ▣ Any of the Symptoms Found on Previous Slide is Present in *More Than One* Individual in the Building
- ▣ Any of these Symptoms are Sudden (Acute)
- ▣ Any of these Symptoms Accompanied by a Sounding CO Detector
- ▣ If you Suspect Faulty Appliances



# Treatment of CO Poisoning For Victims of Acute and/or Mild Exposure

- ▣ Move Victims to Fresh Air Immediately
  - this will only relieve immediate symptoms of *acute* poisoning
- ▣ Activate the Fire/EMS System (if not already)
- ▣ Administer High-Flow Oxygen
- ▣ Monitor Vital Signs
- ▣ Transport via ALS if Symptom(s) persist

# Treatment of CO Poisoning For Victims of Chronic and/or Moderate to Extreme Exposure

- ▣ Move Victims to Fresh Air Immediately
- ▣ Call 911 From a Safe Location
- ▣ Administer High-Flow Oxygen
- ▣ Monitor Vital Signs
- ▣ Monitor Level of Consciousness
- ▣ Monitor for Respiratory Problems
- ▣ Get a Carboxyhemoglobin (Cohb) Test to Check for Carbon Monoxide Levels in the Blood



# Chronic/Extreme Exposure (Cont.)

- ▣ Consider Early Transport to a Hyperbaric Oxygen Chamber for Severely Poisoned Patients
- ▣ Any Patient Found Unconscious, Seizing, or With EKG Changes and With an Associated History Should Be Treated as a Severe Carbon Monoxide Poisoning Until Proven Otherwise

# CO Emergency Calls

- ▣ 63% of PFA Calls Involving CO Come in as "CO" Detector Calls
- ▣ The Rest are Odor/Leak, Service or EMS Calls
- ▣ On Average, 53% of Those Calls Revealed CO Levels Greater than 35ppm
  - The CO Level at Which Our QRAEs alarm



# Most Common Culprits (in order):

1. HVAC (44% of All CO Calls)
2. Water Heater
3. Other Appliances (Stove, Oven, Dryer)
4. A Running Vehicle Parked in the Garage or Drive Way (With the Front Door Open)
5. Wood Stove, Fireplace (Gas or Wood)



# More Statistics

- ▣ Carbon Monoxide Is the #1 Cause for Poisoning Deaths in the U.S.
- ▣ Effects of Co Poisoning Can Generally Be Experienced With as Little as 10%
- ▣ According to Information Provided by Mary Makris, People Recover 4-5 Times Faster When Administered High Flow O<sub>2</sub>



# Home Depot Suggested Monitor Use & Placement

Installation & Safety Considerations	Smoke Detectors	Carbon Monoxide Detectors
Number of devices per house	One per floor*	At least one per household**
Recommended rooms	In every sleeping area and in every bedroom*	Near the sleeping area**
Additional coverage	Hallways Storage areas Finished attics Basements Stairways Kitchen	Bedrooms Each level of your home Long hallways
Placement	On ceiling, in center of room***	On lower half of a wall***
Recommended battery replacement	Once per year or as recommended by the manufacturer	Once per year or as recommended by the manufacturer
Test alarm	Monthly	Monthly for hard-wired models Weekly for battery-powered units
Clean unit	Monthly	Monthly

- \* According to the National Fire Protection Association (NFPA)
- \*\* According to the Consumer Product Safety Commission (CPSC)
- \*\*\*Refer to manufacturer instructions for ideal placement

# Tragedy In Colorado



The Lofgren Family Photo; Parker, Caroline, Owen and Sophie



# Faulty Heating Connection Leads to Carbon Monoxide Death of Family

- ▣ A Prominent Denver Family Perished in a \$9 Million Dollar Home in Aspen
- ▣ The Family of Four All Died in Their Sleep
- ▣ This Tragedy Could Have Been Avoided With the Proper Use and Installation of CO Detectors



# A National Problem

- ▣ The Center for Disease Control and Prevention Has Concluded that Between 1999-2004 an Average of 439 Persons Died Annually From Unintentional, Non--fire-related CO Poisoning
- ▣ Rates Were Highest Amongst Persons 65 Years Old and Older
- ▣ The Average Number of Deaths Was Highest During January



# References

<http://www.osha.gov/SLTC/healthguidelines/carbonmonoxide/recognition.html>

<http://www.carolinafirejournal.com/Articles/ArticleDetail/tabid/191/ArticleId/107/Carbon-monoxide-poisoning.aspx>

[http://www.carbonmonoxidekills.com/32/carbon\\_monoxide\\_facts](http://www.carbonmonoxidekills.com/32/carbon_monoxide_facts)

<http://www.osha.gov/Publications/3282-10N-05-English-07-18-2007.html>

[http://en.wikipedia.org/wiki/Carbon\\_monoxide](http://en.wikipedia.org/wiki/Carbon_monoxide)



- ▣ <http://www.cdc.gov/co/>
- ▣ [http://emergency.cdc.gov/disasters/co\\_guidance.asp](http://emergency.cdc.gov/disasters/co_guidance.asp)
- ▣ <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5650a1.htm>
- ▣ [http://www.homedepot.com/Buying-Guide-Smoke-Carbon-Monoxide-Detectors/h\\_d1/NCC-1701/h\\_d2/ContentView?pn=Smoke\\_Carbon\\_Monoxide\\_Detectors&storeId=10051&langId=-1&catalogId=10053](http://www.homedepot.com/Buying-Guide-Smoke-Carbon-Monoxide-Detectors/h_d1/NCC-1701/h_d2/ContentView?pn=Smoke_Carbon_Monoxide_Detectors&storeId=10051&langId=-1&catalogId=10053)
- ▣ <http://www.osha.gov/SLTC/healthguidelines/carbonmonoxide/recognition.html>

**From:** [Liz Suniga](#)  
**To:** [Greg Coleman](#)  
**Subject:** Back Safety presentation  
**Date:** Monday, July 18, 2016 12:02:47 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[Is your back pain caused by dehydration.docx](#)

---

Hi Greg,

Here's a synopsis of what we'll cover for back safety on Wednesday:

Approximately 80% of people will suffer from back pain in their lifetime.

### **Common causes of back pain at work**

A number of factors can contribute to back pain at work. For example:

- **Force.** Exerting too much force on your back — such as by lifting or moving heavy objects — can cause injury.
- **Repetition.** Repeating certain movements, especially those that involve twisting or rotating your spine, can injure your back.
- **Inactivity.** An inactive job or a desk job can contribute to back pain, especially if you have poor posture or sit all day in a chair with inadequate back support.

It's important to use proper lifting technique to prevent back injury! See attached "Lifting Do's and Don'ts" picture.

How do we prevent back injury/re-injury from occurring? Exercise, stretching, and proper hydration are all terrific ways to help strengthen the back and core muscles to prevent injury. There are many muscles in the core/trunk of the body that need strengthening: see attached "Trunk Muscles" picture.

How do we strengthen the back and core muscles? There are many exercises that can help you strengthen this very important area of the body. Please go to this website for a short video on three great exercises:


[http://www.menshealth.com/fitness/the-3-best-moves-to-prevent-back-pain?cid=OB-\\_-MH-\\_-AF](http://www.menshealth.com/fitness/the-3-best-moves-to-prevent-back-pain?cid=OB-_-MH-_-AF)

Other ways to improve back health:

- Good, supportive mattress
- Good quality shoes with proper support for your type of foot
- Watch your posture throughout the day
- Be aware of how you perform physical functions - don't get in a hurry!
- Stay hydrated – drink lots of water! See attached article on how hydration impacts your back health.
- If you smoke, quit. Smoking reduces blood flow to your lower spine, which can contribute to spinal disc degeneration and slow healing from back injuries. Coughing associated with smoking can also cause back pain.



Liz Suniga  
Network Technician  
GraniteTechnology Solutions, Inc.  
cell: 406-600-7496  
[lsuniga@granite.tech](mailto:lsuniga@granite.tech)

Follow Granite on LinkedIn 



# LIFTING DO'S & DON'TS

## DO LIFT AS A TEAM



Do lift bulky or heavy loads as a team. Doing so is smart and the safe way to work.

## DO TURN WITH LEGS



Do move your legs and feet when turning or lowering the load. Avoid twisting at your waist.

## DO USE YOUR LEGS

Do lift the load using your powerful leg and buttocks muscles. Your feet should be wide apart, head and back upright. Keep abdominal muscles tight and the load in close.



## DO USE EQUIPMENT

Do use equipment like hand trucks, dolly's, or forklifts to do the heavy lifting. It's much less work and less risk of injury.



## DON'T LIFT BULKY LOADS ALONE



Don't lift bulky or heavy loads alone. Doing so puts great stress on your low back muscles and spine.

## DON'T TWIST WHEN LIFTING



Don't twist when lifting, lowering, or carrying any load as this increases your risk of back injury.

## DON'T USE YOUR BACK

Don't lift the load with your rear end high and your head low. Use your leg muscles, not your weaker low back muscles.



## DON'T LIFT HEAVY LOADS

Don't lift heavy loads when you can use equipment. It is less work and less stress on your low back.





# Core connections

The core refers to any muscle that attaches to the spinal column or the pelvis, which means that back pain can come from an imbalance or injury to any of these muscle groups.

 Muscles affected

ANTERIOR

POSTERIOR

## ABDOMINALS

Rectus abdominis  
External obliques

Internal obliques

Transversus abdominis

## ADDUCTORS

TRAPEZIUS  
Rhomboids

LATISSIMUS  
DORSI

SPINAL  
ERECTORS and  
MULTIDUS

QUADRATUS  
LUMBAR

GLUTEAL  
COMPLEX

Sources: "Core Advantage: Core Strength for Cycling's Winning Edge,"  
by Tom Danielson and Allison Westfahl; images from iStock.com

The Denver Post

## Is your back pain caused by dehydration?

Water affects every organ and cell within your body. You may not have known this, but water even plays an enormous role in the health of your back and spine. The lack of proper hydration could affect your back and could be a cause of back pain. Here's how... Between every two vertebrae lies a disk, which functions as a shock absorber for all that we put our backs through every day. This disk has two parts: an outer, flexible but very tough ring, which is filled with a gelatinous substance, called the nucleus pulposis. This inner substance is primarily water. All day long, as gravity works on our upright spine, water is slowly squeezed out of the disks.



Then at night, when we are lying down, the disks slowly rehydrate. This daily dehydration and nightly rehydration of the disks is the reason why most of us are generally about  $\frac{1}{4}$  to  $\frac{1}{2}$  inch shorter when we go to bed than when we wake up in the morning! Regular movement during the day is also important to keep disks hydrated - as the spine moves forward and back, the disks will absorb what water is available.

Our disks will successfully rehydrate themselves during the night, and also during the day when possible, as long as there are adequate water levels within the body. When there is not enough

water available to fully hydrate the gelatinous center, the whole disk becomes compromised. The disk is designed, when fully hydrated, so that the outer ring bears 25% of the weight load while the inner nucleus pulposis supports 75%.

When the inner portion is dehydrated, it cannot support its share of the load, so more and more of your weight is borne by the outer ring, which simply was not designed for that purpose. This can cause pain, swelling, and even ruptures or herniations of the outer shell of the disk. What this means is that one of the simplest and most effective ways to reduce back pain is to increase your daily intake of clean, healthy water, and to be sure to flex your back and neck front to back at times throughout the day. Light exercise is also beneficial; however if you want to avoid back spasms, it is suggested to consume water before, during, and after you begin any physical activities. Don't wait until you are thirsty to drink water, this means your body is already dehydrated.

### How much water should you drink?

It is often said to drink about 8 cups a day. However, this may not be true because drinking levels usually depend on the different needs of each individual. For example, an athlete will need to drink lots more water than someone who is not an athlete. The athlete loses more water while exercising so will have lots more to replenish. Another example is two individuals of the same lifestyle but different weight will also differ in the amount of drinking levels. The heavier individual will need more water to stay hydrated. So, to make it more simple drink one cup for every 20 pounds of body weight. For example, a 150-pound person who does not exercise or work in hot climates needs 7.5 cups. This means 7.5 cups of pure water; drinking soda, tea, and



coffee do not count even though they have water in it! These drinks are filled with artificial sweeteners and caffeine that will dehydrate you. Try to limit the amount of beverages you drink other than water. Treat them as a dessert and not something you drink on a regular basis.

- Drink twice as much as it takes to quench your thirst
- Drink frequently throughout the day to prevent dehydration
- Drink one cup for every 20 pounds of body weight
- If you exercise or work in hot climates you will need to drink extra amounts of water

After a strenuous workout, you have to replace the fluids you have lost. Otherwise, you will suffer chronic dehydration. Water reduces body temperature which is beneficial for those working in hot climates. Water will replenish the fluids your body has lost and help cool your body down.

Drinking more water is a simple preventative measure to protect against developing back pain and can even help reduce existing back pain. Simply stretching your spine forward and back periodically throughout the day will help to rehydrate your disks, provided that you have given your body enough water to work with. So don't be a pain in the back and drink up today!