

SAFESTART HUMAN FACTORS



CONFERENCE

2022

Orlando, FL

November 8 & 9

**SAFESTART'S NEW TOOLS AND RESOURCES
TO SUPPORT HUMAN FACTORS IN THE
WORKPLACE**

Kelley Norris

WHO DO WE HAVE IN THE ROOM?

1. How many of you have implemented the SafeStart process?
2. How many of you are trainers?
3. How many of you are leaders?

Let's see what you remember.....

REVIEW



QUESTION 1

UNIT 1 & 2 REVIEW



What are the four states of the state-to-error risk pattern.



RUSHING



FRUSTRATION



FATIGUE



COMPLACENCY



QUESTION 2

UNIT 1 & 2 REVIEW



What are the four critical errors of the state-to-error risk pattern.



EYES NOT
ON TASK



MIND NOT
ON TASK



LINE OF FIRE



BALANCE,
TRACTION,
GRIP



QUESTION 3

UNIT 1 & 2 REVIEW



Which two errors (of the four critical errors) “set up” the other two?



- Eyes not on task
- Mind not on task
- Line of fire
- Balance, traction, grip



Which two errors (of the four critical errors) “set up” the other two?

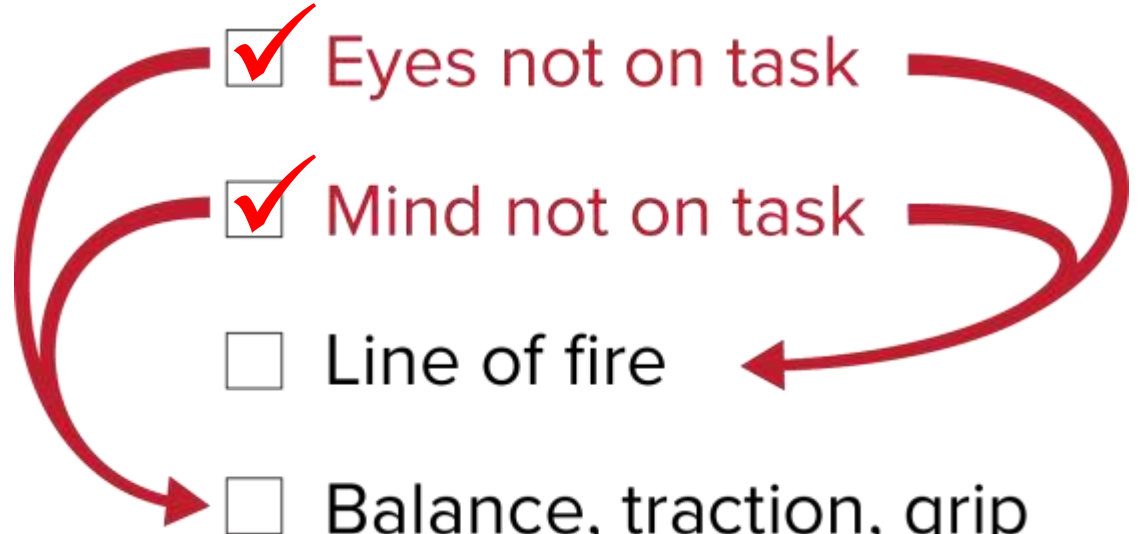


Eyes not on task

Mind not on task

Line of fire

Balance, traction, grip





Which two errors (of the four critical errors) “set up” the other two?



Line of fire and/or balance, traction and grip errors are the ones that put us in contact with the hazardous energy.

- Eyes not on task
 - Mind not on task
 - Line of fire
 - Balance, traction, grip
-



The critical error reduction techniques (CERTs) work because they:

- A. Prevent you from experiencing the four states.
- B. Prevent the states you experience from leading to critical errors.





The critical error reduction techniques (CERTs) work because they:

- A. Prevent you from experiencing the four states.
- B. Prevent the states you experience from leading to critical errors.



The CERTs are designed to deal with the four states in everyone's life and help to prevent the states from causing critical errors.

WHAT TO EXPECT TODAY

Experiential learning

Topic Introduction

Reinforce foundational concepts & learn new skills!

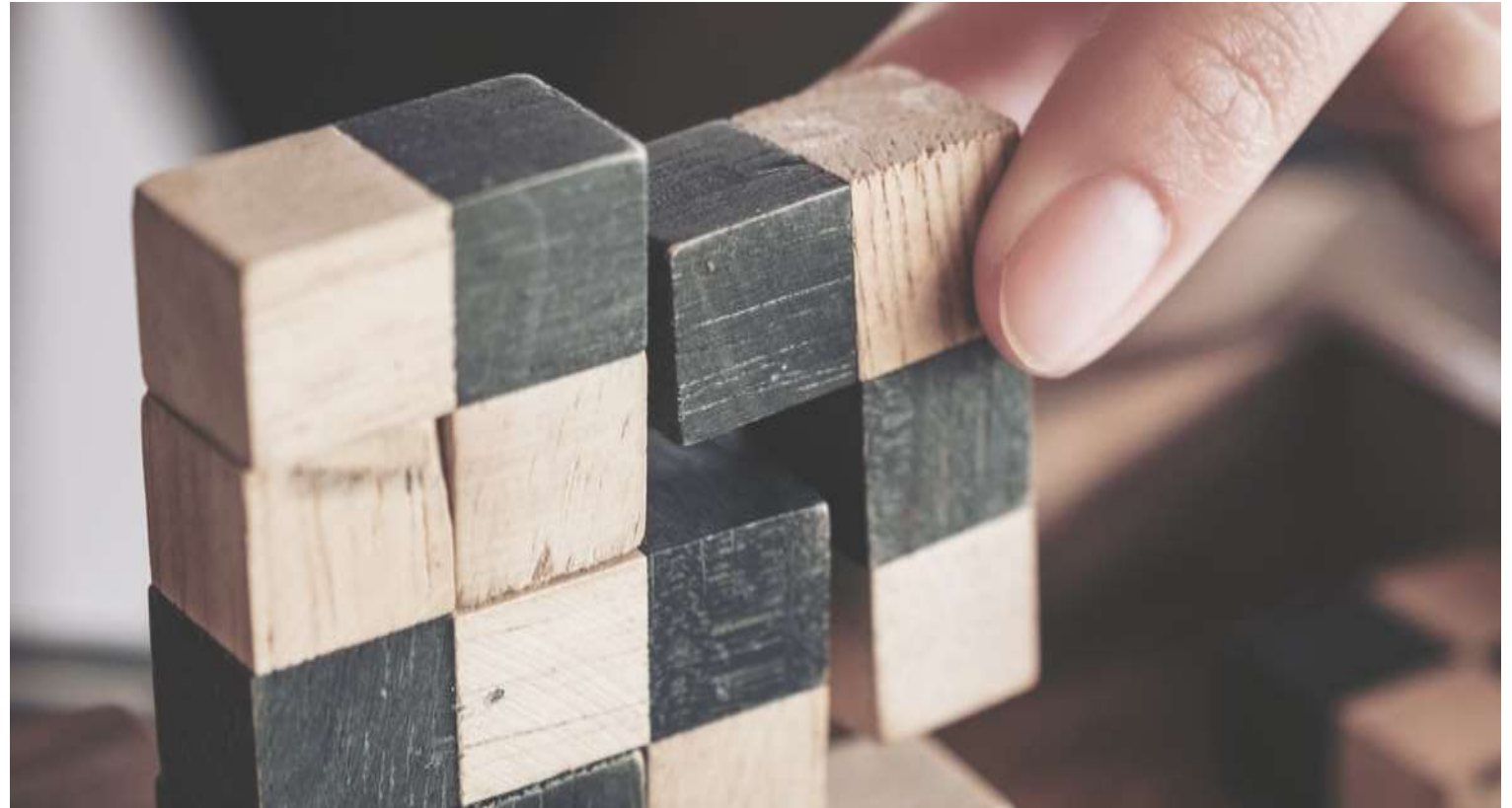
Encourage skill practice

FUN!



Content Flexibility

- Needs differ by company, site, and even by department
- Choose the topic most relevant to you



WHY FLEX?

Delivery Flexibility

90_{min}

45_{min} X2





PREDICTING AND

PREVENTING ACCIDENTS

4 HABITS TO PREVENT

BACK PAIN

SAFESTART[®] **NOW**

Flex Unit



PREDICTING AND

PREVENTING ACCIDENTS



INTRODUCTION TO PREDICTING AND PREVENTING ACCIDENTS

This session is about how to anticipate errors to reduce moments of higher risk.

The first half is about how to predict the error in the first place.

The second half is about how to set a reminder effectively to reduce the risk in the moment.



TYING IT BACK TO THE CORE UNITS

Remember that in core training we identified the self area as being responsible for the vast majority of unintentional injuries.



TYING IT BACK TO THE CORE UNITS

And we know the pattern that creates these incidents: states lead to errors, which then lead to risk.



THE STATES CREATE THE PATTERN

So by having a good idea of the states we are likely to experience and when they are likely to happen, we have the ability to interrupt the pattern before it is too late.

THE THOUSAND DOLLAR PRIZE

But how do we know what upcoming situations to focus on?

You can clarify which upcoming moments to focus on by asking the following question:

If you could win a prize for predicting when you might be injured in the next 24 hours, when would that be?





COMPLETE THE ACTIVITY

Think of the next 24 hours. What is your best guess for a time when you are likely to be injured or experience a close call?





COMPLETE THE ACTIVITY

Identify the states that will likely be contributing to this risk.

Identify the errors that could result from these states.

Share your answer with a partner.

| | |
|--|--|
| STATES | |
| <input type="checkbox"/> Rushing | |
| <input type="checkbox"/> Frustration | |
| <input type="checkbox"/> Fatigue | |
| <input type="checkbox"/> Complacency | |
| ERRORS | |
| <input type="checkbox"/> Eyes not on task | |
| <input type="checkbox"/> Mind not on task | |
| <input type="checkbox"/> Line of fire | |
| <input type="checkbox"/> Balance, traction, grip | |

A NOTE ON COMPLACENCY

How many of you identified complacency as likely to occur in your upcoming situation?

You may remember from your SafeStart training, the idea that it is very difficult to self-trigger on complacency in the moment.

While this is true, it is possible to anticipate **when** you are likely to experience complacency.

A NOTE ON COMPLACENCY

It's easier to **predict** complacency than it is to become aware of it in the moment.

By thinking ahead you can get a sense of when you are likely to be complacent.



A NOTE ON COMPLACENCY

Start with your morning routine--normal tasks you don't think about like showering, driving to work, or getting your kids ready.

Then, think about the end of your day--driving home, making dinner, and any evening activities.

Whenever you see that your behavior is automatic to some degree, you are likely complacent.



A NOTE ON COMPLACENCY

Start by thinking about things you do on autopilot or any situations where not paying attention has gotten you in trouble.





COMPLETE THE ACTIVITY

If you haven't identified complacency as a state yet, think about where your behavior is likely to be automatic in the next 24 hours

Share your answer with the group.

STATES

- Rushing
- Frustration
- Fatigue
- Complacency



ERRORS

- Eyes not on task
- Mind not on task
- Line of fire
- Balance, traction, grip



Why is it ideal to focus on prevention when it comes to using our SafeStart skills?

Because we don't have to experience the injury first to then learn about the error(s) we made.



INDIVIDUAL/PERSONAL RISK ASSESSMENT

What would you say in response if someone said: “When I think of future situations, there are just too many states to consider. I wouldn’t know where to focus my attention.”

You can prioritize the upcoming states you focus on by figuring out which create the highest risk. To do that, ask the thousand dollar prize question.



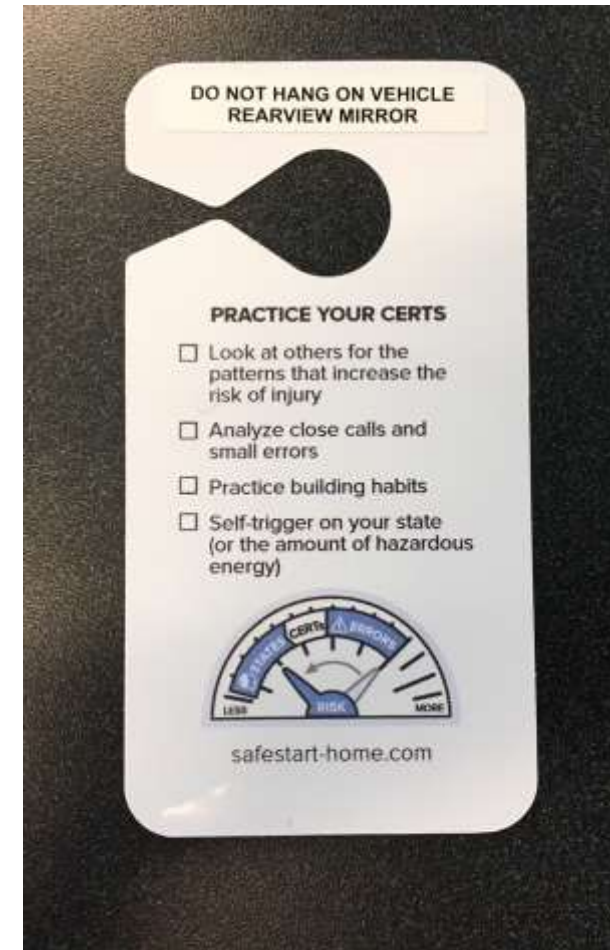
PART 2 – WAYS TO CREATE REMINDERS

| Method | Appropriate Use | Limitations |
|-----------------------|---|---|
| Set an alarm | Set an alarm for a time when your risk increases, if possible | <ul style="list-style-type: none">• You'll get used to the alarm over time• Your access to devices may be restricted |
| Put PPE in the way | Place the required PPE directly on or near the tool required to do the task in the area in which the task is done | <ul style="list-style-type: none">• Risk can still exist with the appropriate PPE• Try to use in combination with the CERTS |
| Make a plan with cues | Think of an upcoming visual cue that will remind you to self-trigger | <ul style="list-style-type: none">• You need to be familiar with the environment• Repetitions of the same plan may require changing the cues over time |

THE SAFESTART HANG TAG

The SafeStart hang tag has been included with your workbook as a visual reminder of the states and errors.

NOTE: Not to be used on vehicle rear view mirror as it may create a visual obstruction while driving.



HOW TO USE THE SAFESTART HANG TAG

Hang tag can be used as a visual reminder of the SafeStart concepts. Hang on door knobs or in your closet as a reminder before you leave for the day.



HOW TO USE THE SAFESTART HANG TAG

The hang tag can also be used in workshops and garages to remind you of the hazards before you begin an activity that involves equipment, especially powered equipment.





SHARING SAFETART





Flex Unit

A woman with dark hair in a ponytail, wearing glasses and a light-colored top, is seated at a desk. She is looking down at a laptop. The desk has a white coffee cup, a smartphone, and some papers. The background is a blurred office setting with whiteboards.

4 HABITS TO PREVENT
BACK PAIN

IMPORTANT! THIS MUST BE READ!

This course will introduce some simple stretches for you to reduce or prevent back pain.

“Back pain” means anything from the base of your skull to your tail bone.

These stretches are not intended nor implied to be a substitute for professional medical advice.



IMPORTANT! THIS MUST BE READ!

These exercises should not cause you discomfort.

If they do (at any point) stop immediately and see your healthcare provider.

It's possible that some of these stretches might cause very mild stiffness the next day, as you would expect from any new activity.



SESSION INTRODUCTION

This session is about preventing back pain with the help of four simple habits.

The first half is about identifying where (in your own life) you could use some improvement in your posture or position.

The second half is about how to use a simple habit to make that improvement.



AGENDA

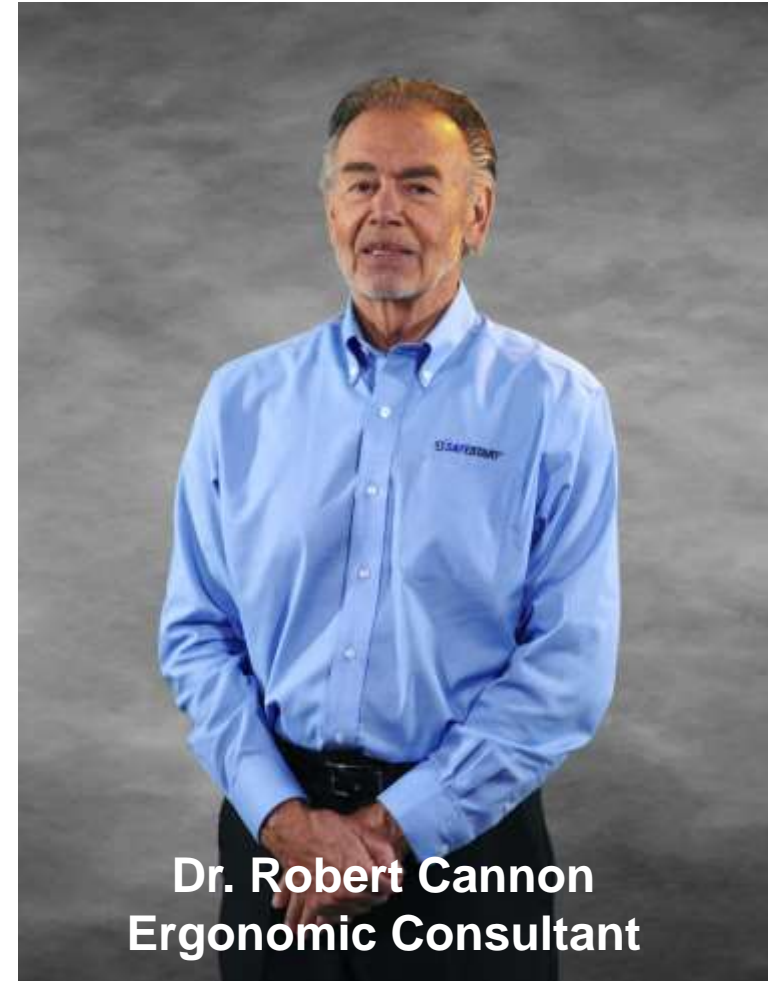
- Welcome and introduction
- Your SafeStart back pain story
- Critical ergo errors
- Ergo CERTS
- 4 simple stretches (habits)
- Choosing a stretch



INTRODUCTION: DR. ROBERT CANNON

This course was created with Dr. Robert Cannon, a specialist in applied ergonomics.

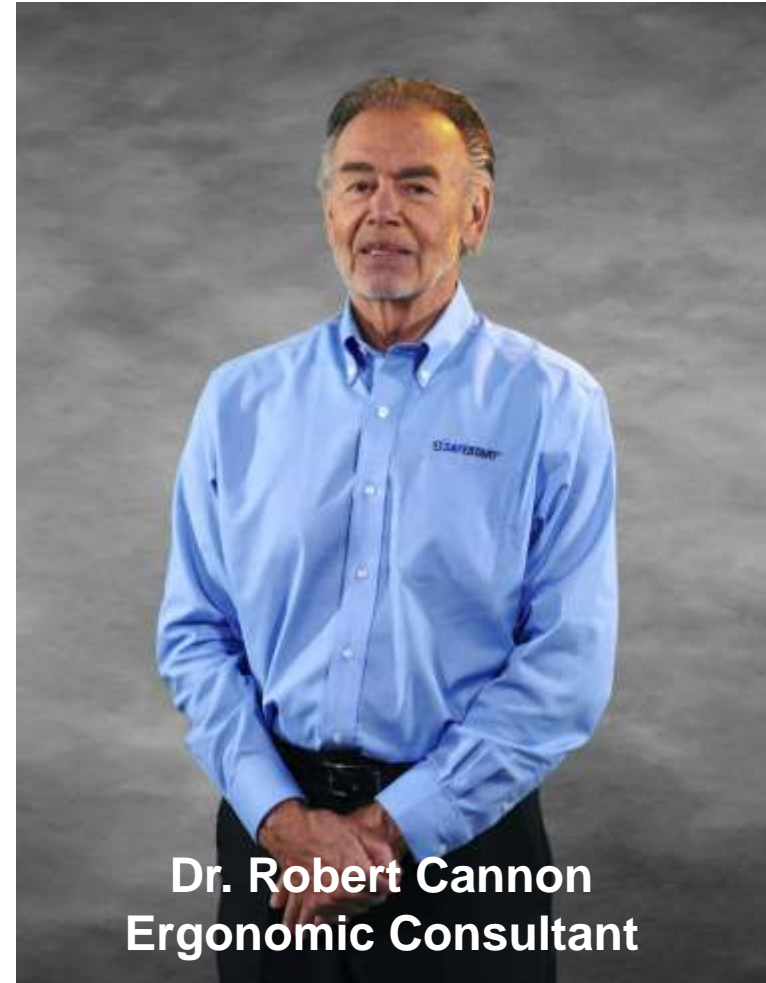
Dr. Cannon developed SafeStart's Personal Ergonomics, a popular course that teaches best practices to reduce the risk of repetitive stress and injury on our bodies.



Dr. Robert Cannon
Ergonomic Consultant

INTRODUCTION: DR. ROBERT CANNON

This flex unit extends your SafeStart Now skills to a focused area in regards to back pain.

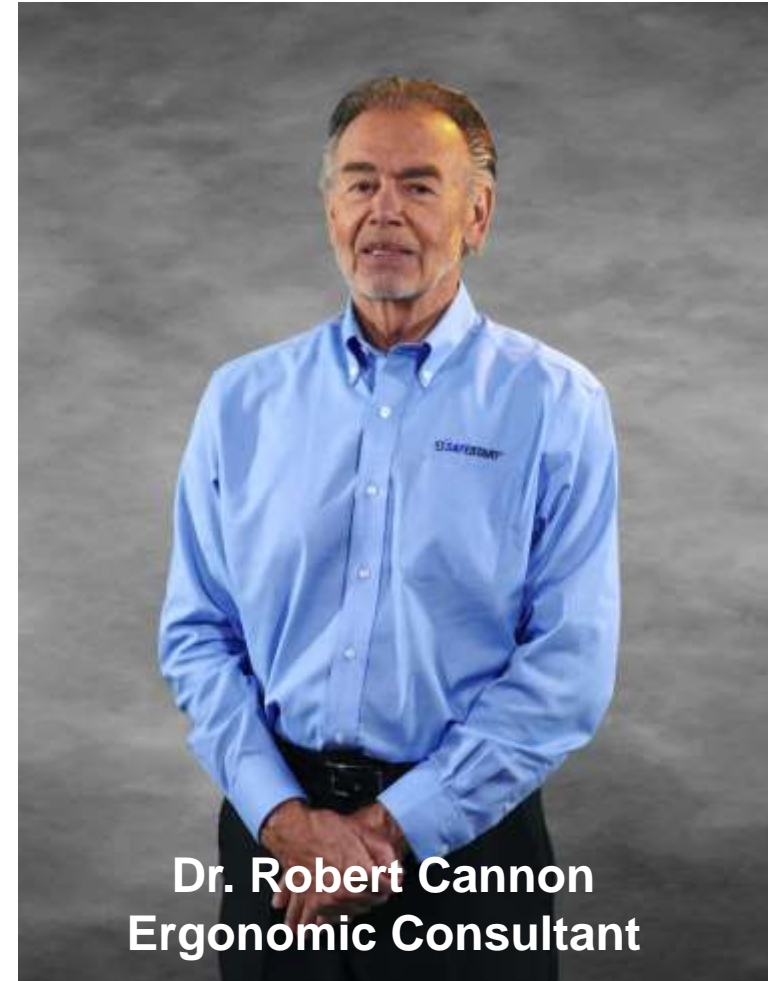


Dr. Robert Cannon
Ergonomic Consultant

VIDEO INTRODUCTION

In the following video, Dr. Cannon will explain why we experience back pain in the first place.

He will also explain why our movement and position has a significant impact on our backs.



VIDEO INTRODUCTION

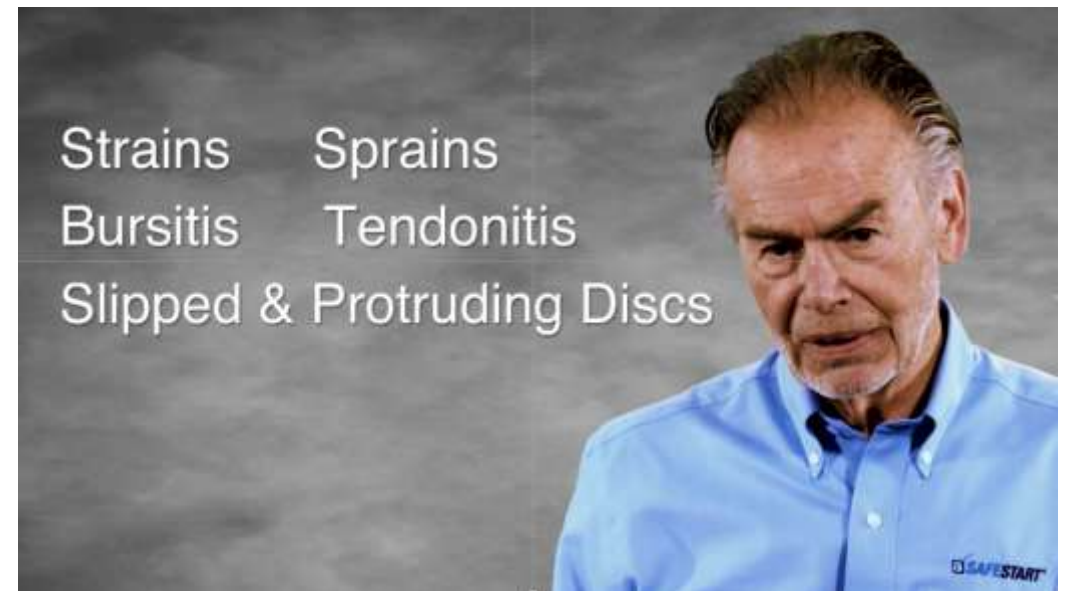


VIDEO INTRODUCTION

As Dr. Cannon explained, the problem comes when we put ourselves in situations of excessive or repetitive effort, or awkward posture or position.

This causes the otherwise healthy tissues in our back to break down over time.

These small injuries create repetitive strain.



FOCUS ON SITTING AND STANDING

Dr. Cannon spoke about issues with lifting.

But for this session, we are going to look at two other common positions: **sitting and standing.**

We are probably sitting or standing for the majority of the day—so it matters how we approach these positions.



INTRO TO CRITICAL ERGO ERRORS

Today, we'll be focusing on two of these errors:

- **Being in the same position too long**
- **Improper or awkward posture or position**



ERGO ERRORS: BEING IN ONE POSITION TOO LONG



**BEING IN ONE
POSITION TOO
LONG**



EXAMPLES:

- Sitting at a work desk for several hours without getting up.
- Sitting in a car for a long ride.
- Sitting in the same position on the couch at home.

ERGO ERRORS: BEING IN ONE POSITION TOO LONG

A significant cause of back pain is sitting or standing for too long without stretching.

The problem is that we tend to develop bad habits over time that we become *locked into* for long stretches of the day.



ERGO ERRORS: BEING IN ONE POSITION TOO LONG

When you are in the same position for too long, the tissue around your back never gets a rest and micro-tears begin to form.

Repetitive strain injuries accumulate over time and lead to progressive damage.



ERGO ERRORS: IMPROPER POSITION



IMPROPER POSITION



EXAMPLES:

- Sitting with a slouch at a desk at work
- Sitting in a twisted position or in a slouched position at home.
- Walking with shoulders too far forward.

THE IMPORTANCE OF POSTURE

The easiest area to understand the impact of improper position is your head and neck.

Improper position adds pressure and weight to key areas as a result of physical force.



THE IMPORTANCE OF POSTURE

For example, your head weighs between 10 lb. and 12 lb. (4.5–5.4 kg).

If you bend your head down 30 degrees, it is as if your head weighs 40 lb. (18.1 kg).

Continue bending your head down 60 degrees, and it is as if it weighs 60 lb. (27.2 kg).



60 degrees
60 lb (27.2 kg)

THE IMPORTANCE OF POSTURE

Consider the force put upon your body if you continuously look down at your phone throughout the day.

At two–four hours a day, over a span of several years, you could put hundreds of thousands of pounds of repetitive strain on your upper back.





FLEX UNIT WORKBOOK

1

Think of a situation where you consistently make one or both of the two critical ergo errors.

2

Discuss the review question with a partner





FLEX UNIT WORKBOOK

3

Has a back injury or back pain occurred in this situation?

4

Which of the critical ergo errors do you make the most?

5

Review the activity as a class



QUICK KEY POINTS (FIRST HALF)

- One of the main causes of back pain is complacency.
- You can tell a SafeStart ergo story—a story about back pain.
- Being in one position for too long or having improper posture are two common critical ergo errors.



QUICK FIRST HALF REVIEW

How common is back pain?

- Almost everyone will experience it
- Some of us will experience it
- Only people with major injuries experience it

Back pain is very common. It is the leading cause of disability in the world.



QUICK FIRST HALF REVIEW

What state is often responsible for back pain discomfort becoming a full blown injury or acute pain?

The state is complacency.

Feeling “low-grade” discomfort and not expecting something bad to happen eventually is a form of complacency.


②

Story Card

What were the states and errors?


STATES

- Rushing
- Frustration
- Fatigue
- Complacency



ERRORS

- Eyes not on task
- Mind not on task
- Line of fire
- Balance, traction, grip



The four states can cause or contribute to four critical errors, which increase the risk of injury.

QUICK FIRST HALF REVIEW

What are the two critical ergo errors mentioned in the first half of this flex unit?

Being in one position too long.

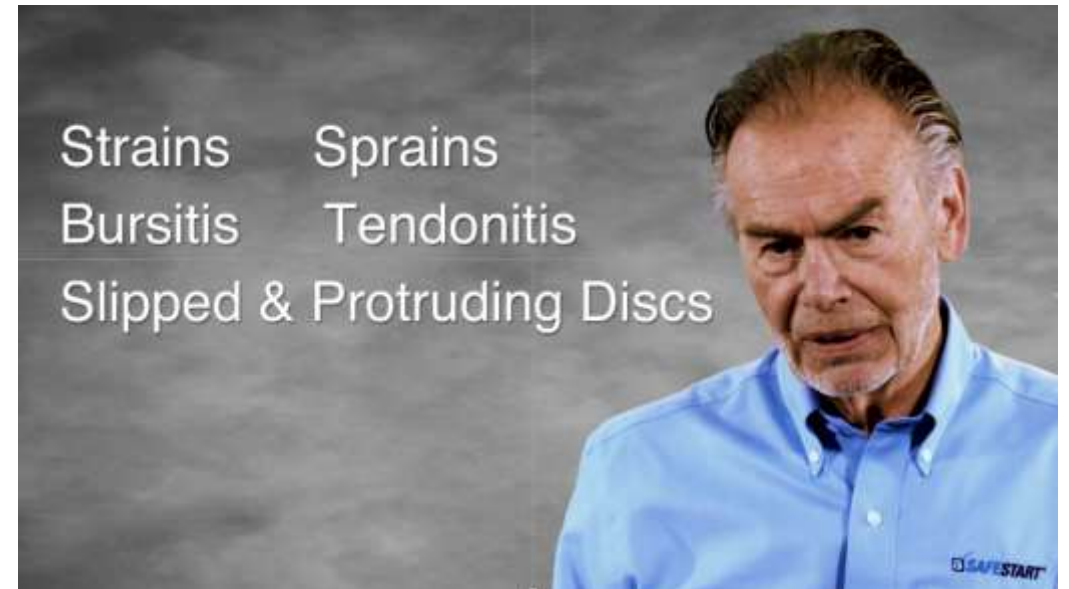
Improper or awkward posture.



QUICK FIRST HALF REVIEW

These two critical errors were identified by Dr. Robert Cannon, an ergonomics consultant.

They are particularly common errors, especially as they relate to sitting and standing.



INTRO TO THE ERGO CERTS

Just as we have seen that there are “critical ergo errors,” so too are there ergo critical error reduction techniques (CERTs).

These ergo CERTs are the same ones you are already familiar with.

We will take a moment now to review the CERTs as they relate to back pain.

3

Story Card

What **critical error reduction techniques** might have prevented the incident?

- L**ook at others for the patterns that increase the risk of injury
- A**nalyze close calls and small errors
- P**ractice building habits
- S**elf-trigger on your state (or the amount of hazardous energy)

What was the injury or close call?

How could it have been worse?

PRACTICE BUILDING HABITS

We will now go over four simple habits that can really help you to reduce or prevent back pain.

These habits will address the two critical ergo errors we have looked at so far.

SAFESTART NOW ⑤

PRACTICE BUILDING HABITS

Critical Error Reduction Technique (CERT)

Practice building habits to compensate for complacency.

What habit are you working on?

Date started: _____

PRACTICE BUILDING HABITS

The goal for today is *to choose one habit to practice*, but we will try them all together to give you a moment to experiment.

Once you have selected a habit, you will put together a realistic plan to practice.

This last step will be done in your workbook.

The image shows a page from a workbook titled "SAFESTART NOW" with a circled number 5. The main heading is "PRACTICE BUILDING HABITS" in a blue box. Below this, it says "Critical Error Reduction Technique (CERT)". A light blue box contains the text "Practice building habits to compensate for complacency." The main question is "What habit are you working on?" followed by six horizontal lines for writing. At the bottom, it says "Date started:" followed by a line for writing.

HABIT #2: REACH FOR THE SKY

Choose this stretch if you are in one position for an extended period of time.

Or if you are doing work that involves being in a contorted position, like gardening.



Reach for the Sky

HOW TO DO THE REACH FOR THE SKY STRETCH

Let's watch the video demonstration first.

Modified instructions:

1. You do not need to get up for this exercise.
2. Reach up to the sky and hold for 30 seconds.
3. Keep looking straight.
4. Again, only do what is comfortable—do not overextend yourself.
5. Let's try it!



HOW TO DO THE BATHROOM STRETCH

Let's watch the video demo first

Modified instructions:

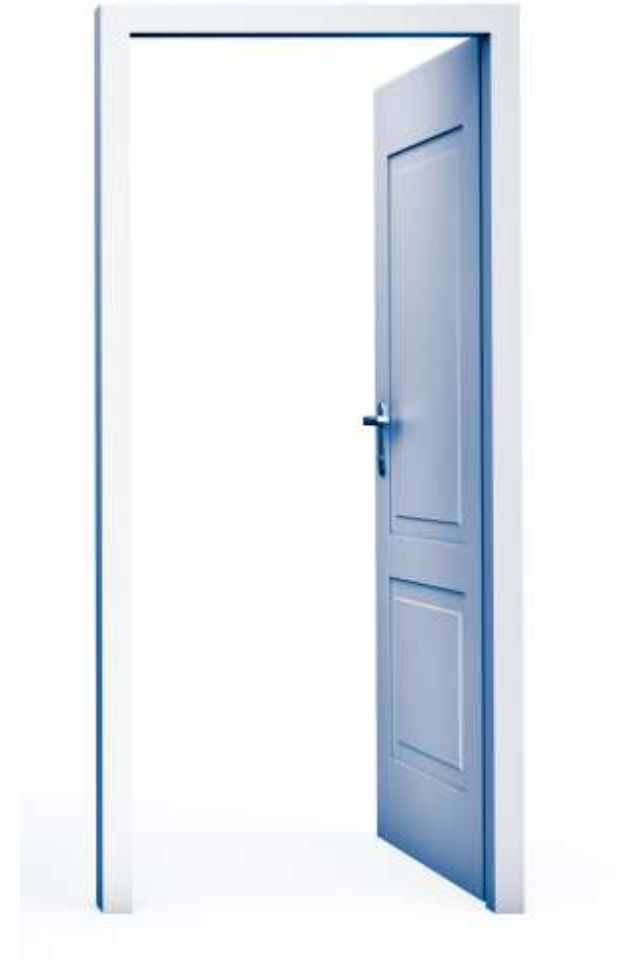
1. You do not need to get up for this modified exercise.
2. Place your hands (palms flat and out) in front of you like you are resting them on a wall at arm's length.
3. Move your elbows back slightly so you feel a stretch in your chest.
4. Let's try it!



HABIT #4: “BATHROOM STRETCH”

The previous stretch is called “the bathroom stretch” because it’s something you can do on a bathroom break easily.

If you can access a door frame and put your hands on either side of the opening, you can lean into the opening to give more of a stretch.



KEY POINTS

- Repetitive stress creates a significant impact on our backs—particularly when we are sitting and standing.
- Complacency is a main cause of much lower back pain.
- Habits are a very effective line of defense against this complacency



SHARING SAFESTART



Additional Units

| | |
|--|--|
| HOW TO REDUCE CONSCIOUS RISK TAKING | Situations where we know the risk involved but rationalize it away. |
| FIGHTING COMPLACENCY IN CRITICAL MOMENTS | Moments in our everyday tasks where our decisions heavily influence our safety outcomes. |
| IDENTIFYING RISK FOR SUMMER STUDENTS AND TEMPORARY WORKERS | Introduction to how human factors impact risk, identify states & errors in yourself f& others, and begin using the 24/7 techniques to prevent injuries and improve performance CONTENT RELEVANT TO PARTICIPANTS |
| IDENTIFYING RISK FOR CONTRACTORS AND SUBCONTRACTORS | Introduction to how human factors impact risk, identify states & errors in yourself f& others, and begin using the 24/7 techniques to prevent injuries and improve performance CONTENT RELEVANT TO PARTICIPANTS |

Supplemental Stories

17 different handouts are available for employees to practice analyzing SafeStart stories.

Each two-page PDF features a scenario to read, a story card to fill out and a place for noting any additional comments that arise during the exercise and related group discussions.



Supplemental Stories

These could be used in a number of ways with your employees, from integrating them into toolbox talks or safety meetings to sending them home with employees for practice with their families.

Regardless of how you integrate the exercises, the additional practice will reinforce classroom training, hone skills and sustain SafeStart.

SAFESTART NOW STORY EXERCISE

A WRENCH IN HIS PLANS PART 1

Read the following scenario and then fill out the story card below.

Samuel, a railroad mechanic, was trying to loosen a lug nut with a large wrench. There was too much resistance and he didn't want to go back to the truck to get a different-sized wrench so he decided to change the position of the wrench so that he could pull on it harder as he had done many times before. Samuel did not position his body in a way that would prevent him from hurting himself if the wrench slipped because he felt he'd mastered this action. After several tries, he jerked the wrench very hard and the lug nut suddenly came loose causing him to lose his balance. Unfortunately, he fell striking his head on a sharp corner. His injury caused him to lose consciousness immediately and it took several weeks to recover from his brain trauma.

Story Card 2

What were the states and errors?

STATES

- Rushing
- Frustration
- Fatigue
- Complacency

ERRORS

- Eyes not on task
- Mind not on task
- Line of fire
- Balance, traction, grip

The four states can cause or contribute to four critical errors, which increase the risk of injury.

Story Card 3

What critical error reduction techniques might have prevented the incident?

- Look at others for the patterns that increase the risk of injury
- Analyze close calls and small errors
- Practice building habits
- Self-trigger on your state (or the amount of hazardous energy)

What was the injury or close call?

How could it have been worse?

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Supplemental Human Factors Training (SHFT) for OSHA Topics

These SHFT sessions are meant to facilitate an open conversation in your department or organization about human factors in a specific area.

They are not meant to function as a replacement for OSHA training, but they will help to make that training more effective.



HAZARD COMMUNICATION
A HUMAN FACTORS
PERSPECTIVE

OUR GOAL FOR THIS DISCUSSION

Our goal in this discussion is to apply human factors to a specific area of our workflow.

We will look particularly at the topic of **hazard communication**.

This discussion doesn't replace our standard hazard training—but addressing human factors will compliment and strengthen that training.



SUMMARY

- Flex units were designed to provide flexibility in both content and delivery
- Predicting & Preventing Accidents
 - Individual Risk Assessment
 - Creating Reminders
- Habits to Prevent Back Pain
 - Potty Stretch
 - Reach for the Sky
- SHFT – Toolbox *NEW*
- Story Exercise *NEW*