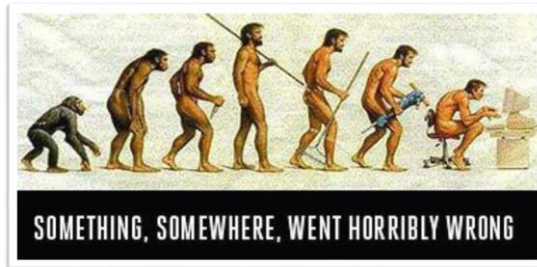




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## Office Ergonomics

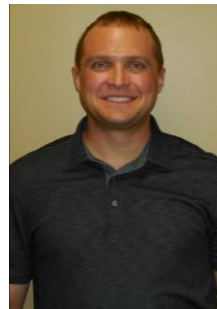


## Webinar Instructor

**Chad Stuart, MS**  
**Risk/Safety Specialist**

**Industry Expertise:**

- ✓ **Oil & Gas Transmission / Distribution**
- ✓ **Utilities & Municipal**
- ✓ **Environmental Management**
- ✓ **Commercial & Residential Contracting**
- ✓ **Trucking / Fleet Operations**
- ✓ **Military Installations**





## Webinar Disclosure

**Cobb Strecker Dunphy & Zimmermann’s presenter, Chad Stuart has no actual or potential conflict of interests concerning any proprietary interests in any product, service or any other materials presented in this webinar.**

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## How to Participate During the Webinar

**There are two ways a participant can ask a question during the presentation:**

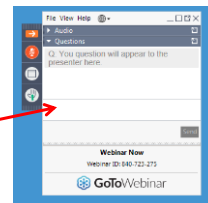
**1. If you want to speak to the instructor live during the webinar to get a question answered:**

- ✓ Click the “Raise-Your-Hand” button and the instructor will take your question.



**2. If you do not want to ask a live question, but still want to have a question answered, you can submit a question in writing via the question panel:**

- ✓ Write your question here and click send.



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## CSDZ Webinar Housekeeping

### Today's Presentation Will be Interactive

- ✓ **Participants will be using "Poll Everywhere" to answer questions.**
  - **You can use either Desktop, Smartphone or Tablet**



Poll Everywhere  
Poll Everywhere, Inc.

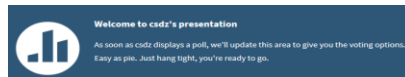
### Instructions

#### ***Apple Device Users***

- Step 1: Start Safari or another browser
- Step 2: Go to [www.polleverywhere.com](http://www.polleverywhere.com)
- Step 3: Register for a New Account.
- Step 4: Download the Poll Everywhere app from the Apple App Store
- Step 5: Open the Poll Everywhere App and Login
- Step 6: At the Join a presentation screen type in [PollEv.com/csdz](http://PollEv.com/csdz) and press join

#### ***Android Device Users***

- Step 1: Download the Poll Everywhere App from Google Play
- Step 2: Open the Poll Everywhere App
- Step 3: In the menu (on the top right) select sign-up and create a Poll Everywhere account
- Step 4: At the Join a presentation screen type in [PollEv.com/csdz](http://PollEv.com/csdz) and press join



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## Learning Outcomes

- **Define the basic principles of office ergonomics.**
- **Identify common office ergonomic concerns.**
- **Define practical solutions to prevent injury.**
- **Identify how to setup and adjust your workstation based on the task(s) performed.**



## Ground Rules for Ergonomics

---

1. Be open to possibility
2. Offer help to coworkers and be open to influence from your coworkers
3. Politely speak up when you have a concern
4. Challenge the idea, not the person
5. Listen before condemning
6. Be reasonable
7. Understand that no universal remedy exists

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## What is Ergonomics?

---

The process of designing or arranging work places or work spaces so that they fit the people who use them.



## Ergonomic Misperceptions

- Pursuit of the **“Magic Pill”**
- Furniture/things:
  1. Will solve all problems
  2. Is the cause of all problems
- Making a single change will remedy everything
- One position is good for all types of tasks
- “I’ve tried ergonomics once and it didn’t work!”

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## Setting the Stage...

- No amount of ergonomic theory can make up for your personal lifestyle choices
  - Health
  - Fitness
  - Nutrition
  - Flexibility
  - Hydration
  - Sleeping habits
  - Managing Stress
  - Drugs and alcohol
  - Dealing with emotions

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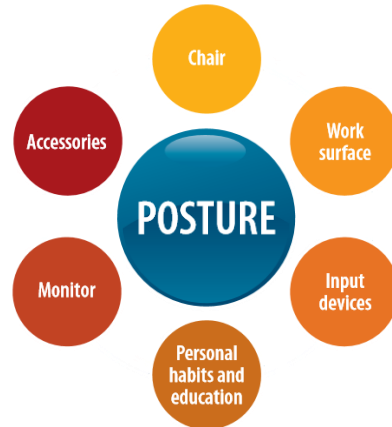




## The Missing Link

- **Posture**

- **It's a choice**
- **Recognize Your Body's Natural Posture and Adjust Setup to Prevent Slouching**



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## What is "Good" Posture?

- Sitting upright
  - *Weight balanced on bottom & thighs*
  - *Bottom tight against chair back rest*
- Knees slightly lower than hips
- Feet supported
- Look forward with chin tucked-in
- Shoulders relaxed
  - *Shoulder blades down & symmetrical*

Equipment is important **but** the way you use it is more important

- Poor posture becomes a habit
- Good posture creates good balance, flow, improves comfort and increases blood flow to the brain



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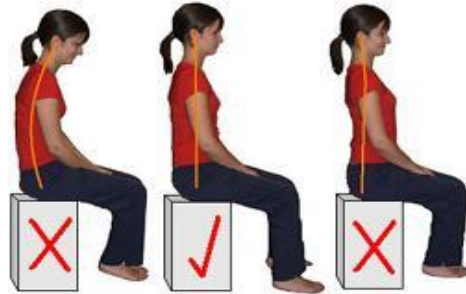
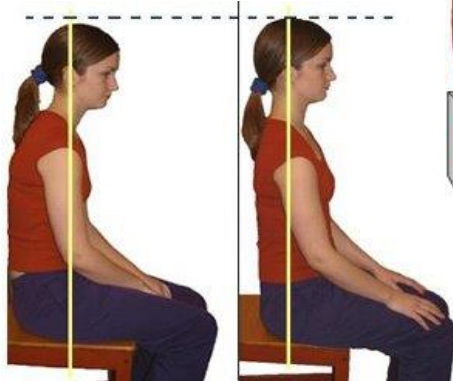


## Common Posture Concerns

Shoulders Forward

vs.

Shoulders Back



Slouched vs. Poised vs. Forced

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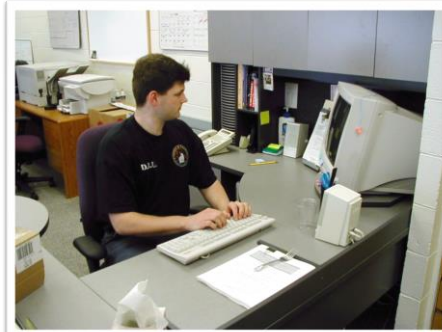


## Common Awkward Office Postures



### Telephone Shoulder Rest

- Can cause neck and shoulder strain, both sides.
- Unable to sit back in chair, no back support.



### Twisting at the Waist and/or Neck

- Common with Document Review or Data Entry
- Hunched over to see monitor
- Potential wrist & upper arm discomfort

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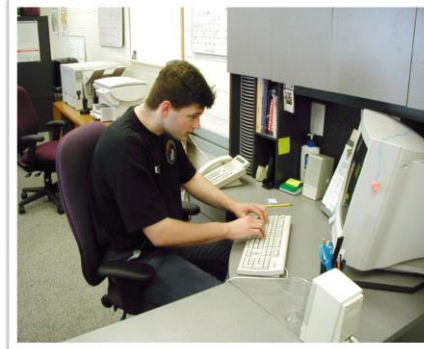


## Awkward Keyboard Positions



### Keyboard Too High

- Contact stress on wrist
- Potential wrist and upper arm discomfort



### Keyboard Too Low

- Hunched over to see monitor
- Potential wrist & upper arm discomfort

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## Awkward Combo: Keyboard & Mouse

### Common with Keyboard Trays

- Awkward shoulder posture for reaching mouse
- Upper arm and shoulder discomfort
- Often extended reaching for long periods of time



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## Identifying Ergonomic Concerns

Force

Duration

Repetition

Contact Stress



### Disclaimer:

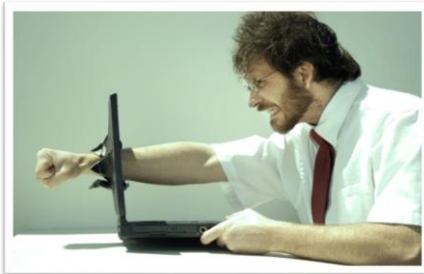
Identifying a potential ergonomic concern does not accelerate and transform your situation into a health epidemic.





## Force - amount of physical effort required to complete a task

- **Minimize how much force you use for ordinary tasks**
  - **No more "Angry Typing"**
  - **Use as light a touch as possible**



- **With everything we pick up, or push against, we should try and do it with as little force as possible.**
  - **This means no pounding the keyboard!!**

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## Awkward Posture & Duration

**reaching, twisting, bending, holding fixed positions**

### Example:

- **Where your telephone is located on your desk could possibly force you into an awkward posture that you are not even aware of.....**
  - **Make sure your telephone is within easy reach.**
  - **Make sure you do not have to twist (awkward posture) at the waist to reach the phone.**

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## Repetition

task or series of motions performed over and over and...

- **If you find yourself doing a job task over and over, you should:**
  - **Take short breaks instead of one long break**
  - **Get up and move around**
  - **Stretch and hydrate**
  - **Try to vary your tasks as much as possible so you aren't in a position where you have to keep doing repetitive motions**

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## Contact Stress

localized pressure exerted against the body by force

- **Common contact stress points:**
  - **If you are resting your wrist on a sharp edge you are creating a contact stress.**
    - To fix - do not rest your wrists on anything that will leave an indent mark on your skin.
  - **If the chair you are sitting in has a seat pan (curtain) that pushes against the back of your knees you are experiencing a contact stress.**
    - You may need to get a chair with a sliding seat pan to give you enough room between the edge of the seat and the back of your knees.

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## Adjusting a Workstation to Fit Your Body

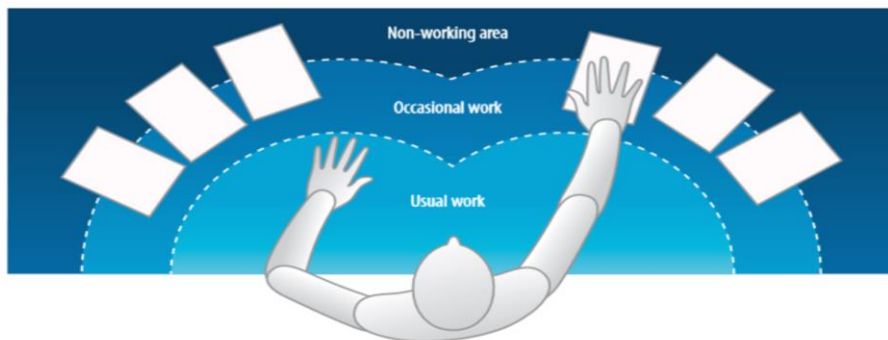
You're either a product of your environment or your environment is a product of you



## Arranging Your Workspace

Arrange tools around your desk so you minimize the distance you have to reach for them.

- **Primary work zone or usual work area** – *the distance from elbow to hand*
  - Things you touch on a daily basis
- **Occasional work area** – *within arm's reach*
  - Use this area to position those items that you use frequently, but don't need all the time
- **Reference or non-working area** – *outside arm's reach*
  - Use this area for your least-often used items





## Ergonomic Working Position

### Natural, Relaxed Posture

- Keep your **back** in a relaxed position (100°-110°)  
– Focus on resisting slouching
- Use the **lumbar support** of the chair to support your back – *adjust to comfort*
- Keep your **head** balanced above your neck and in-line with your torso

### Shoulders & Arms

- **Shoulders** should be relaxed  
– Not touching your ears!
- **Arms** resting at your side
- **Arms** should form an angle slightly more than 90°
- **Chair Armrests** - Adjust the arms on your chair to help provide support for your arms during rest periods.

#### Note:

*It is not a good idea to permanently rest the forearms on armrests while you are typing or using your mouse because this can compress the flexor muscles and some armrest can also compress the ulnar nerve at the elbow*

### Monitor Position

- **Look straight forward** - your eyes should be looking at the top 1/3 of the screen.  
**\*\* The key and most important point\*\***  
**Keep your head from tilting up or down**
- If you have some neck discomfort when working, you may need to make a slight adjustment up or down of the monitor to find the correct comfort position for you.



### Lower Body

- **Hips and thighs** are parallel or tilting downward to the floor
- **Knees** are about the same height or below the hips with the feet slightly forward
- As needed, the **feet** should be supported by a footrest



## Chair Adjustments

### Become familiar with your chair's adjustment options

- **Seat height**
- **Seat tilt**
- **Arm rest**
- **Back height**
- **Lumbar adjustment**
- **More???**

### Common Problems with Chairs and People

- **People choose not to learn how to adjust their chair**
- **People choose not to adjust their chair for the task**



## Adjusting Your Chair

- **HEIGHT** - While standing, adjust the height of the chair so the highest point of the seat is just below your kneecap. This should allow your feet to rest firmly on the floor when seated. If you feel pressure near the back of the seat, raise your chair. If you feel pressure near the front of the seat, lower your chair. The goal is to evenly distribute your weight.
- **BACK SUPPORT** - When sitting, adjust the height of the backrest so the lumbar pad supports the natural curve of your lower back (lumbar curve). The tilt of the back support should allow you to sit with your upper body slightly reclined (110 degrees is usually recommended).
- **SEAT TILT** - Seat tilt can be adjusted to improve your comfort. This will also affect your weight distribution. A tilt of five degrees is usually recommended.



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## Adjusting Your Chair...continued

- **DEPTH** - When sitting, the seat pan (part of the chair you sit on) should allow you to use the back support without the front of the seat pressing against the back of your knees. Some chairs have adjustable seat pans. The adjustment lever is usually located under the front of the chair, much like the lever that moves the seat forward and backward in a car. If the seat is still too deep after adjusting, the chair may be too big for you.
- **WIDTH** - The seat pan should be wide enough so it does not apply pressure to your thighs. Conversely, the seat should be narrow enough to be able to reach the armrests when they are properly adjusted.
  - **ALWAYS** place backside as far back into the chair as possible and adjust position from there
  - Thighs comfortable on the seat pan
  - Tilt is best adjusted forward (*seat front down*) for concentrated work at the desk as it brings you close into the workspace
  - Seat tilted back (*seat front upwards*) may be used for conversation or non-workstation tasks



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## Armrests

- Provide support for the upper forearms
  - Reduces stress on the shoulders and back
- Should not prevent chair from being drawn close to the desk, nor restrict the body's natural movements



**Armrest should be adjusted to elbow height.**

*Too high, and the shoulders will be shrugged, which can cause discomfort. If they are too low, the shoulders may be depressed, which can affect the posture of the back and neck.*

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## Keyboard Set-up

- Upper arms should be relaxed by your side
- Elbows bent at or just below 90-degrees
- Wrists are straight or just below 90-degrees
- Keyboard should lie flat or be tilted slightly away from you

- **Common problem:**

*raising the keyboard tray to an awkward wrist posture*



- Place the keyboard in front of the screen with the center of the keyboard in line with the center of the monitor(s)



- If you use a document holder, place it between the keyboard and monitor



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## Using a Computer Mouse

- One size fits most, not all
  - Try to use a mouse that fits the size of your hand
- Keep the mouse close to the side of the keyboard
  - On the same plane as the keyboard
- Keep your hand/wrist position straight or neutral
  - Aim for less angle at the wrist
- Avoid holding mouse when not in use
- Learn keyboard shortcuts



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## Creative Solutions

**To further reduce the risk, limit the use of the mouse and use the keys and functions on the keyboard instead.** The best mouse to use is no mouse at all. Here are some examples of keyboard shortcuts that can be used in most popular software programs.

BASIC FUNCTIONS	
YOU PRESS	IT DOES
Ctrl+Esc	Activate Start Menu
Shift+F10	Right-click/context
Tab	Next field
Ctrl+Tab	Previous field
Ctrl+F4	Close sub-window
Alt+Tab	Next program
Alt+F4	Close program
EDITING AND FORMATTING	
YOU PRESS	IT DOES
Ctrl+B	Bold selected area
Ctrl+I	Italicize selected area
Ctrl+U	Underline selected area
Ctrl+Enter	New page
Ctrl+Z	Undo
Ctrl+A	Select all
CLIPBOARD RELATED COMMANDS	
YOU PRESS	IT DOES
Ctrl+X	Cut selected area
Ctrl+C	Copy selected area
Ctrl+V	Paste selected area

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## Monitor Adjustments

### Fit the Monitor to Your Task



## Monitor Set-up

### Distance

- **Good rule of thumb:** sit in a neutral position (chair adjusted & pulled into where you normally sit), straighten your arm in front of you and your fingers should not touch the screen

### Height & Location

- Positioned directly in front of you with top of the monitor at or just below eye level
- Adjust and tilt the monitor to accommodate your eyes and comfort

### Glasses & Bifocals

- Bifocals may require the monitor to be even lower and tilted at a greater angle



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## Using 2 Monitors

- **Place yourself** (sitting or standing) **in between the monitors so that equal distance exists between you and each screen**
  - **2 screens should touch in the middle & be at your center**
- **If using one main monitor and the other as a secondary screen, place yourself midway in front of the main screen (as per single monitor) and move the second screen to the side at an angle to minimize glare**
  - **Return to center when using 2 monitors**

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## Sit Stand Desks





## Ease into it...

- **Don't rush in and try standing for 8-hours**
  - **Any little bit of standing that you do will be an improvement over sitting all day long.**
- **Commit to doing a certain work tasks while standing**
  - **Take your calls & Read reports while standing**
- **Start small**
  - **A good first goal is to stand for one hour a day while at work. Do that for the first week then increase it to two hours and so on to progressively build up your strength.**
  - **Gradually work your way up until you find a standing amount that feels right for you. Even the most ambitious standers don't stand for the full day, usually maxing out at about 80% of the work day.**

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## Setting up a Sit Stand Workstation

Similar to setting up a seated workstation

- **Forward facing, natural body posture**
- **Top of the desk surface (where keyboard and mouse are positioned) is at elbow height or just below**
- **Keyboard is directly in front of you**
  - **push the keyboard back so that your forearms are supported on the front part of the desk when typing**
- **Keyboard and mouse on same level, close to each other**
  - **your arm should be close to your side when using the mouse**
- **Position monitor so you that don't tilt/arch your head back or twist your neck**
- **Monitor is generally positioned at approximately arm's length or further away from you**
  - **the top of the screen is at your eye height or lower**
- **Monitor height is slightly adjusted when standing to be visually comfortable and maintain the correct posture**



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## Do's & Don'ts Regarding Footwear

Your feet can only be as comfortable as your footwear permits

- **DO** choose shoes that provide a firm grip for the heel.
  - If the back of the shoe is too wide or too soft, the shoe will slip, causing instability and soreness
- **DO** wear shoes that allow freedom to move your toes
  - Pain and fatigue result if shoes are too narrow or too shallow
- **DO** ensure that shoes have arch supports.
  - Lack of arch support causes flattening of the foot
- **DO NOT** wear shoes that are completely flat (*without arc support*) or with heels higher than 2 inches for long periods of standing

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## Get the Most out of a Sit Stand Workstation

- **Regularly change postures between sitting, standing, moving**
  - Avoid prolonged sitting or prolonged standing at your workstation
- **Listen to your body** (*especially if you experience discomfort or pain*) and alternate between sitting, standing and moving
- **Consider the type of footwear worn**
  - Low heel and with arch support is best (*consider leaving a pair at work*)
- **When standing, position chair to avoid creating a hazard**
  - Do not put your chair in the aisle or other common areas
- **Anti-fatigue mats are generally not needed as carpet and underlay usually provides sufficient support.**
  - Mats can be a trip hazard for yourself or your colleagues
  - May cause strains or sprains during routine movement to use your chair.

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## Standing is not Static

- Standing without any movement can cause blood to pool in the legs
  - Combat this by routinely shifting your weight, swaying or rocking (*not too extreme*) from side to side, gentle marching in place



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## In Closing...





## Get Up, Move Around and Stretch



- There are many stretches you can do at work
  - Find what works for you and do it!
- Make the time
  - Seconds within a minute, moments within a day.

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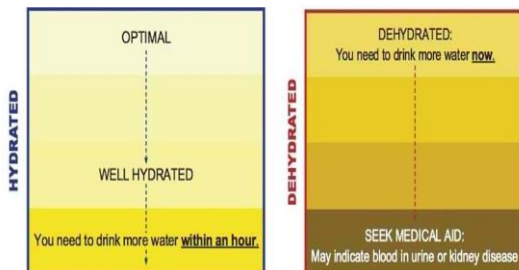
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## Hydrate – Good rule of thumb is 1 cup of water/hour

### Drink Water!

- Coffee, Tea, X-rated Psycho Drinks and other caffeinated drinks are diuretics and can rapidly dehydrate your body



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## And please remember...

- **No amount of ergonomic theory can make up for your personal lifestyle choices**
  - **Health**
  - **Fitness**
  - **Nutrition**
  - **Flexibility**
  - **Hydration**
  - **Sleeping habits**
  - **Managing Stress**
  - **Drugs and alcohol**
  - **Dealing with emotions**

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*Safety & Risk Group*

## Thank You!



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