



United States Department of Agriculture
TARGET Center

USDA TARGET CENTER ERGONOMICS PROGRAM

Stephanie Bradley
Ergonomics Program Manager

#NDEAM | #RehabAct50
dol.gov/odep

ADVANCING ACCESS & EQUITY

National Disability Employment
Awareness Month

Celebrating 50 years of the Rehabilitation Act of 1973



Stephanie Bradley, CAE, CEAS
Ergonomics Program Manager
Sl.Bradley@usda.gov
202-720-2600



LEARNING OBJECTIVES



- Understand the science of workplace ergonomics and the USDA TARGET Center's workplace improvement processes.
- Identify the common risk factors associated with work-related musculoskeletal disorders, prevention principles and how to adopt proper mechanics.
- Increase self-awareness of early discomfort and the signs of musculoskeletal disorders and understand the steps to establish an ergonomic evaluation for USDA employees nationwide at the USDA TARGET Center Ergonomic Program.
- Identify the necessary resources available at the USDA TARGET Center and determine how the TARGET Center can provide support within education, identification of ergonomic equipment, and facilitation of product loans for USDA employees nationwide.

HISTORY OF ERGONOMICS AT THE TARGET CENTER


The TARGET Center's Ergonomic Program started in 1992 to support employees that needed support with obtaining an ergonomic chair.



A collaboration between a prominent chair vendor was established once it was identified the need for ergonomic chairs for many government employees that have Musculoskeletal Disorders.



This prominent chair vendor setup a weekly chair fittings which provides custom chairs to support government employees that have disabilities.



Thus, the Ergonomic Program at the TARGET Center has been successful in fitting thousands of employees with the appropriate ergonomic chair.

ERGONOMICS: WHAT IS IT?

Definition:

Ergonomics is the science of fitting the job to the worker. Designing workstations and tools to reduce work-related musculoskeletal disorders (MSDs) can help workers stay healthy and companies to reduce or eliminate the high costs associated with MSDs.

Strategy:

Ergonomics considers the physical and mental capabilities and limits of the worker as he or she interacts with tools, equipment, work methods, tasks, and the working environment.

Goal:

Reduce work-related musculoskeletal disorders (WMSD's) by adapting the work to fit the person, instead of forcing the person to adapt to the work.

ERGONOMICS: WHY IT MATTERS?

Ergonomics prevents injury of workers!!!

Musculoskeletal disorders are preventable and unnecessary injuries:

- Cost the US economy billions of dollars annually
- Result in missed work, increased pain, and decreased morale among affected workers.

Integrating good ergonomics into job and workplace design costs no more than choosing a bad design.

Ergonomics programs focus on ways to reduce costs to companies by:

- reducing injuries
- reducing errors
- reducing absenteeism
- maximizing productivity

WHAT ARE MUSCULOSKELETAL DISORDERS (MSDs)?

Illnesses and Injuries of the musculoskeletal system that can have a work-related casual component include:

- Sprains
- Tears
- Strains
- Pinched nerves or blood vessels
- Inflammation
- Stress fractures
- Degeneration

*29% of all workplace injuries in the U.S. requiring time away from work are caused by work-related MSDs

Musculoskeletal nonfatal injuries and illnesses involving days away from work

2020 TOTAL

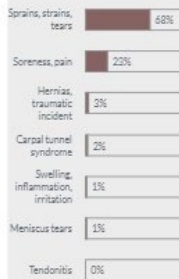
All injuries and illnesses: **1,176,340**
Musculoskeletal: **247,620**



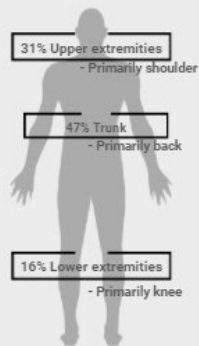
MEDIAN DAYS AWAY

All events or exposures: **12 days**
Musculoskeletal: **14 days**

Nature



Part of body



Event or exposure



Source: Bureau of Labor Statistics, U.S. Department of Labor
Note: Estimates reflect injuries occurring in the private sector

RISK FACTORS ASSOCIATED WITH MUSCULOSKELETAL DISORDERS

Work postures
and movements

Repetitiveness
and pace of
work

Force of
movements

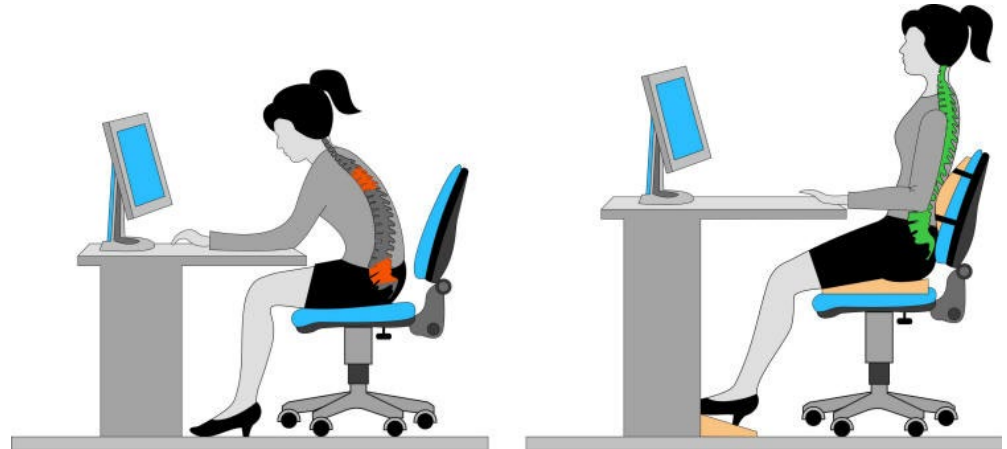
Vibration

Temperature

WORK POSTURES AND MOVEMENT

ERGONOMICS: AWKWARD POSTURE

- Awkward posture refers to positions of the body that deviate significantly from the neutral position while performing work activities.
- When you are in an awkward posture, muscles operate less efficiently, and you expend more force to complete the task. Examples of awkward postures are twisting, bending, reaching, pulling or lifting.





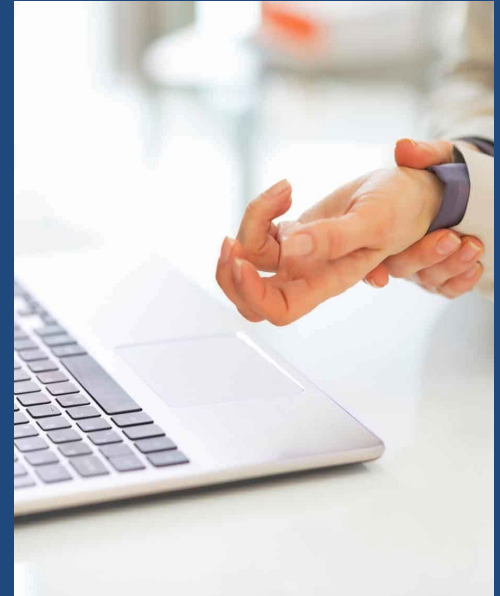
REPETITIVE MOTIONS

Repetitive Motion Disorders (RMDs) are a family of muscular conditions that result from repeated motions performed during normal work or daily activities. The disorders are caused by too many uninterrupted repetitions of an activity or motion, unnatural or awkward motions such as twisting the arm or wrist, overexertion, incorrect posture, or muscle fatigue.

RMDs Include:

- Carpal tunnel syndrome
- Bursitis
- Tendonitis
- Epicondylitis
- Ganglion cyst
- Tenosynovitis
- Trigger finger

RMDs occur most commonly in the hands, wrists, elbows, and shoulders, but can also happen in the neck, back, hips, knees, feet, legs, and ankles.



FORCE OF MOVEMENTS

Excessive force is one of the primary ergonomic risk factors. Many work tasks require high force loads on the human body. Muscle effort increases in response to high force requirements which increases fatigue and risk of an MSD.

There are numerous conditions that affect force, but the idea is to recognize when a job or task requires excessive force and then find ways to reduce that force.

Eliminating excessive force requirements will reduce worker fatigue and the risk of MSD formation in most workers. Using the following will help to reduce these risks:

- Mechanical assists
- Counterbalance systems
- Adjustable height lift tables and workstations
- Powered equipment
- Ergonomic tools

VIBRATION

Occupational vibration exposure occurs when the body is exposed to pulsation, shaking or tremors usually produced by a vibrating object such as a power hand tool.

- Vibration is often called a vector quantity, which means that the vibratory motion has both a negative effect in of itself and a magnitude or intensity component.
- Vibration restricts the blood supply to the hands and fingers, which, depending on the vibration level and duration of exposure, can contribute to an ergonomic injury.
- Vibration exposure is separated into hand-arm vibration (HAV) and whole-body vibration (WBV). These two types of vibration have different sources, affect different areas of the body and produce different symptoms.

VIBRATION (CONT.)

HAV (hand-arm vibration) is usually caused by a vibrating hand tool or work piece which transmits the movement.



WBV (whole-body vibration) is usually felt when sitting or standing on a vehicle or machine, travelling over rough ground or along a track.



TEMPERATURE

Extreme temperatures can cause various problems for workers. Problems may include trouble breathing, fatigue, reduced dexterity, sensory sensitivity and reduced grip strength.



Hot temperatures can lead to dehydration and muscle fatigue, especially in conjunction with high humidity.



Cold temperatures make the muscles less flexible, resulting in muscle strains and pulls.

Hot or cold work environments do not necessarily need to be outdoors. Any location that is outside of the typical comfort zone of 55 - 85 degree Fahrenheit is cause for concern.

WHAT KIND OF INJURIES ARE MUSCULOSKELETAL DISORDERS

Acute Injuries

- Happen immediately due to overload
- Can become chronic
- Re-injury possible
- Strains, sprains, disc herniations

Chronic Injuries

- Pain or symptoms lasting more than a month

Cumulative Trauma

- Happen over time
- Difficult to cure

COMMON WORKPLACE INJURIES

Hand & Wrist

- Carpal Tunnel Syndrome
- De Quervain's Disease

Elbow

- Tendonitis
- Epicondylitis

Shoulder

- Rotator Cuff Tendonitis
- Thoracic Outlet Syndrome

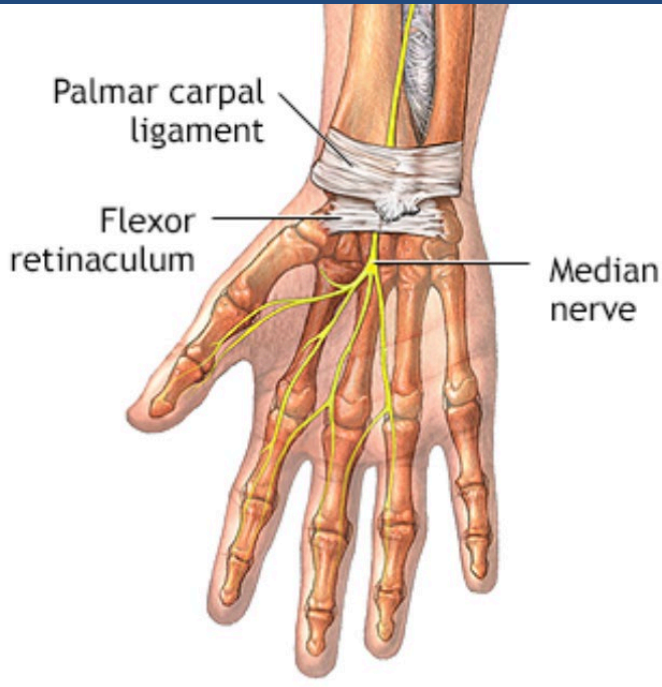
Neck

- Tension Neck Syndrome

Back

- Disc Herniation
- Back Pain/Sprain

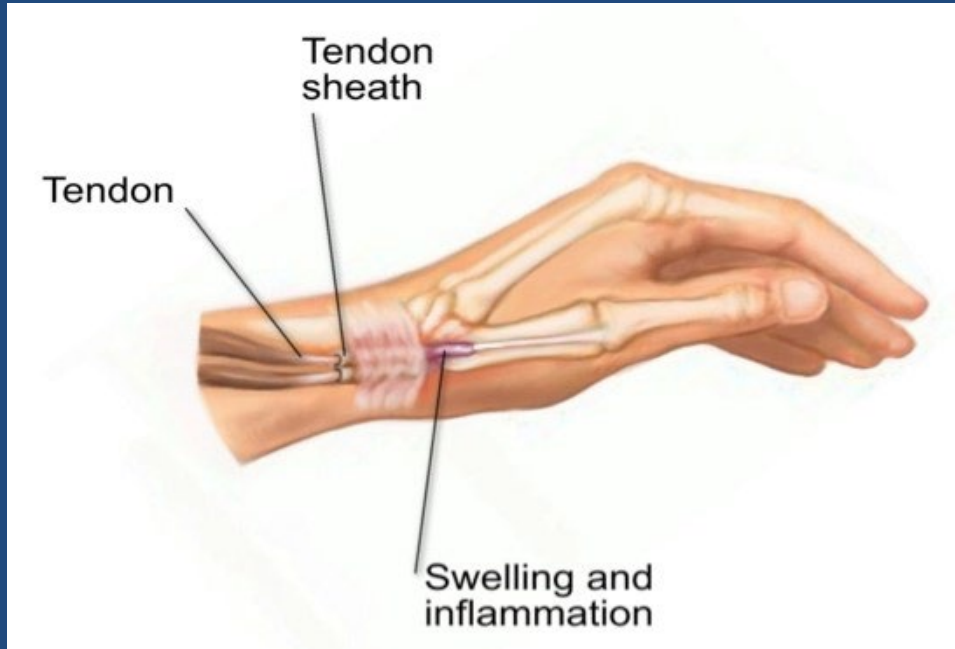
CARPAL TUNNEL SYNDROME (CTS)



- The carpal tunnel is composed of eight irregular shaped carpal bones covered by the tough fibrous flexor retinaculum which contains the finger flexor tendons and the median nerve.
 - Median nerve innervates most of the palm, thumb, index finger, middle finger, and radial border of the ring finger.
- Causes
 - Flexor tendon sheaths that become swollen may impinge on the median nerve within the cramped carpal tunnel.
- Symptoms
 - Numbness
 - Tingling
 - pain in the distal distribution and may commonly wake patients during the night.

*In advanced cases, symptoms may persist during the day, person may drop objects frequently owing to decreased sensation, and linear muscle atrophy.

DE QUERVAINS DISEASE

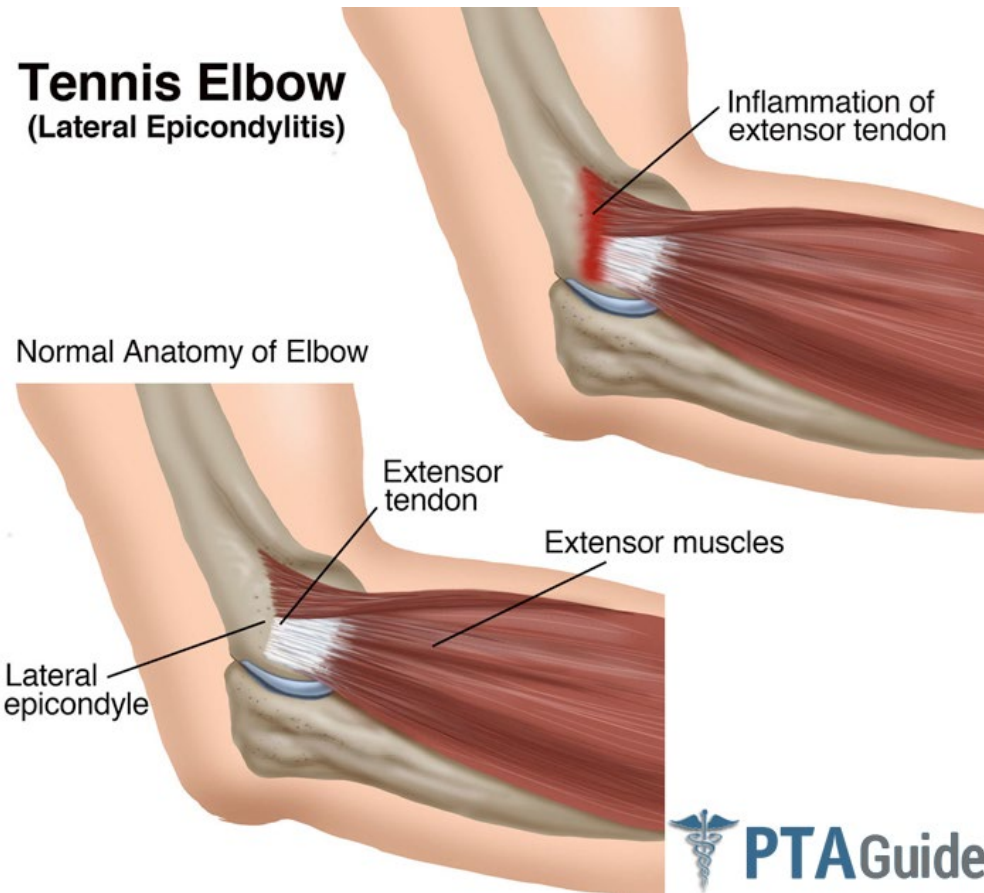


- A form of tenosynovitis affecting the first dorsal (extensor) compartment of the hand.
- The sheath of the tendons on the thumb side of the wrist become inflamed or swollen, making it difficult to move.
- Symptoms:
 - dull aching sensation over the tendon
 - discomfort with specific movements, grasping or turning wrist
 - tenderness to touch

ELBOW TENDONITIS

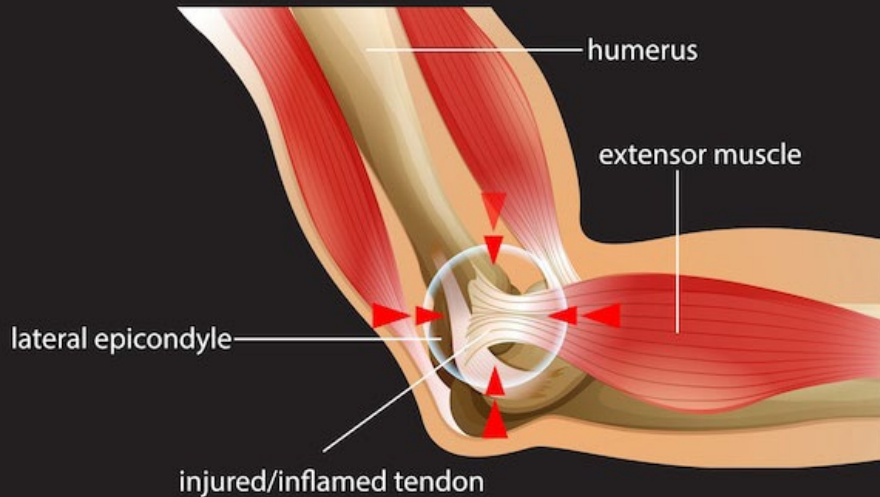
- Also known as “tennis elbow”, affecting the outer part of the elbow.
- Inflamed unsheathed tendon that may become frayed or torn apart when repeatedly exerted and tensed. Could become thickened, bumpy, and irregular.
- Tendons without sufficient rest and recovery time may become permanently weakened.
- Causes
 - May be caused by repetitive motions which aggravate the tendons needed to perform the task.
- Symptoms
 - includes a dull aching sensation over the tendon
 - discomfort with specific movements
 - tenderness to touch

Tennis Elbow (Lateral Epicondylitis)



EPICONDYLITIS

Lateral Epicondylitis (Tennis Elbow)



- Also known “golfers' elbow,” affecting the inner part of the elbow.
- This is another form of tendonitis affecting the wrist and digit flexors where they originate at the medial epicondyle of the elbow.
- Causes
 - May be caused by excess or repetitive motions in the wrist and fingers (such as typing), or a sudden force to the elbow or wrist.
- Symptoms
 - includes a dull aching sensation over the tendon
 - discomfort with specific movements
 - tenderness to touch

SIGNS AND SYMPTOMS OF MSDs

Early Warning Signs:

- Numbness or burning sensation in hand
- Reduced grip strength in the hand
- Swelling or stiffness in the joints
- Pain in wrists, forearms, elbows, neck or back
- Reduced range of motion in the shoulder, neck, or back
- Dry, itchy, or sore eyes
- Blurred or double vision
- Aching or tingling
- Cramping
- Weakness



These signs and symptoms should be reported to the physician and ergonomic evaluation should be made.

ERGONOMIC ADJUSTMENTS TO PREVENT MUSCULOSKELETAL DISORDERS

Fortunately, with early intervention and improved work & task design, MSDs can be prevented. Here are a few strategies you can use throughout your day to avoid discomfort and prevent injury:

- Take frequent breaks – get up and stretch, walk around or change your scenery.
- Vary the workday – if possible, try to space out different types of tasks.
- When using a computer, follow the 20-20-20 rule - every 20 minutes, look at something about 20 feet away for at least 20 seconds.
- Report pain or discomfort immediately – don't wait until it becomes serious, always inform your supervisor.

If you are a supervisor, be sure to monitor your employees and make sure they are taking necessary breaks.

TARGET CENTER ERGONOMIC SERVICES



RESOURCES



EVALUATIONS



CHAIR
FITTINGS

ERGONOMIC RESOURCES

1. The USDA TARGET Center Ergonomic loan program provides a variety of ergonomic equipment so that employees can test out equipment in preventing workplace injuries.
2. Demonstrations of ergonomic equipment can be provided in allowing employees information on ergonomic equipment and how to utilize the equipment.
3. Webinar training is provided for all USDA employees to receive education on ergonomics and identify the proper setup in positioning ergonomic tools and properly setting up your workstation.

Provide customers with Ergonomic loans to bridge a gap in time before customers have access to permanent solutions or for a temporary disability.

Loans are for 30 days. Items will be shipped to customers.

Not all Ergonomic equipment recommended is available for loan.

ERGONOMIC LOAN PROGRAM

ERGONOMIC EVALUATION PROCESS



Pre-Evaluation Form



Evaluation Meeting



Report

USDA EMPLOYEES



Good News...All USDA employees can obtain an evaluation!!!

- Complete a pre-ergonomic evaluation form on the USDA TARGET Center website.
- Submit digital pictures of yourself at your workstation, so the Ergonomics Program Manager can see the workstation setup and how you are utilizing equipment.
- Evaluation can be done In-Person or Virtually
 - If located within the NCR (National Capitol Region) then you can obtain an evaluation In-Person at the TARGET Center.



ERGONOMIC EVALUATION

Ergonomic Evaluations are the first step to a more comfortable working environment.

- An ergonomic evaluation is a comprehensive assessment of your workstation, tools, and equipment.
- It provides detailed information about how you use your workplace, which can help you adjust and improve comfort as well as reduce stress on the job.
- Ergonomic evaluations are especially important for people who spend long hours at their jobs or have repetitive tasks that strain their bodies.
- Any USDA employee can benefit from an ergonomic evaluation if they are experiencing pain or discomfort as part of their daily routine or even as prevention.

The TARGET Center Ergonomic Program partners with various vendors to help facilitate the acquisition process to obtain recommended ERGO products.



Vendors can provide quotes and work with agencies to ensure a smooth purchase process.

VENDOR CONNECTIONS

SUMMARY

1. Musculoskeletal Disorders (MSDs) are illnesses and injuries of the musculoskeletal system that can have a work-related casual component.
2. The goal of ergonomics is to minimize work-related MSD's by adapting the work to fit the person, instead of forcing the person to adapt to the work.
3. Symptoms of MSD's involve swelling, numbness, tingling, discomfort, burning sensation, irritation, stiffness, pain and weakness.
4. TARGET Center and the Ergonomic resources available to prevent Musculoskeletal Disorders at your workstation.

UPCOMING WORKSHOP

Ergonomics Program
Demonstration
Tuesday, 10/12/23

THANK YOU



Current and Upcoming Meetings

OCTOBER

MONDAY	TUESDAY	WEDNESDAY	THURSDAY
<p>10/2/2023</p> <p>10:00 AM – 11:00 AM USDA TARGET Center Assistive Technology Program Rashida Owens Assistive Technology Program Manager</p> <p>12:00 PM – 1:00 PM USDA TARGET Center Ergonomics Program Stephanie Bradley CEAS, CAE Ergonomics Program Manager</p>	<p>10/3/2023</p> <p>11:00 AM – 12:00 PM Rethinking Disability and What It Means to Be Disabled Dr. Theresa Haskins Haskins Consulting</p> <p>1:00 PM – 2:00 PM (Neuro) Diversity Includes You Dr. Theresa Haskins Haskins Consulting</p>	<p>10/4/2023</p> <p>11:00 AM – 12:00 PM Nurturing Workplace Well-Being and Supporting Mental Health (Part 1 of 2) Dr. Theresa Haskins Haskins Consulting</p> <p>1:00 PM – 2:00 PM PTSD is More Common Than You Think Alla Weinberg Spoke & Wheel</p>	<p>10/5/2023</p> <p>10:00 AM – 11:00 AM Empowering Lives Through Assistive Technology Solutions Donny Osborn Boundless AT</p> <p>12:00 PM – 1:00 PM Department of Defense Computer/Electronic Accommodations Program (CAP) Erin Sanderson CAP</p>
<hr style="border-top: 1px dashed #006633;"/>			
<p>HOLIDAY</p>	<p>10/10/2023</p> <p>11:00 AM – 12:00 PM Autism Inclusion and the Pathway to Neurodiversity Dr. Theresa Haskins Haskins Consulting</p> <p>1:00 PM – 2:00 PM Lessons from Unpredictable Journeys: Insights from Temporary and Situational Disabilities (Part 1 of 2) Dr. Theresa Haskins Haskins Consulting</p>	<p>10/11/2023</p> <p>11:00 AM – 12:00 PM Creating a Trauma-Informed Workplace Alla Weinberg Spoke & Wheel</p> <p>1:00 PM – 2:00 PM Nurturing Workplace Well-Being and Supporting Mental Health (Part 2 of 2) Dr. Theresa Haskins Haskins Consulting</p>	<p>10/12/2023</p> <p>10:00 AM - 12:00 PM USDA TARGET Center Ergonomics Demonstrations (Virtual/Onsite) Stephanie Bradley CEAS, CAE Ergonomics Program Manager Stephen DiCarlo Humanscale Howard Flowers BodyBilt</p> <p>1:00 PM - 3:00 PM USDA TARGET Center Assistive Technology Demonstrations (Virtual/Onsite) Rashida Owens Assistive Technology Program Manager</p>

TARGET CENTER CONTACT INFORMATION

TARGET Center Website

<https://www.targetcenter.dm.usda.gov>

TARGET Center Email

target-center@usda.gov

TARGET Center Phone Number

(202) 720-2600

