

# USDA APHIS Laboratory Ergonomics Questions

## Successful Workplace

T/F: There is no relationship between an individual's comfort level in the workplace and enhancing safety and productivity.

## Ergonomics

Ergonomics can be defined as:

- A. Fitting the job to the person.
- B. Fitting the person to the job.
- C. Working harder, not smarter.
- D. Working smarter, not harder.
- E. A and D

Basic ergonomics principles include:

- A. Neutral Position and Support
- B. Reach Zone
- C. Power Position
- D. Fatigue Control
- E. All of the above

T/F: The feet are considered to be the foundation of the body.

When viewed from the side, the spinal column in the Neutral Position:

- F. Has a C-shape.
- G. Has three curves.
- H. Is a straight column

Mid-range of joint position for the body's joints:

- A. Is the weakest position of the joint.
- B. Is the most functional position of the joint.
- C. Can be maintained 100% of the time.

T/F: As possible it makes sense to set-up your workstation within your Reach Zone.

The Power Position:

- A. Is a "ready" position for almost every sport.
- B. Can be used when lifting a box.
- C. Can be used when getting a drink at the water fountain.
- D. All of the above.

T/F: It is possible to eliminate fatigue from our day-to-day activities.

Ideas to control fatigue include:

- A. Alternating job tasks throughout the day.
- B. Taking appropriate recovery breaks

- C. Maintaining adequate hydration.
- D. Using stretching as “microbreaks”.
- E. All of the above.

## **WMSD**

T/F: Work-related musculoskeletal disorders involve the muscles, joints, nerves, tendons, ligaments, cartilage, or spinal discs.

WMSDs may result from:

- A. Longer-term wear and tear on the body.
- B. A single episode activity like lifting.
- C. Both A. and B.

Recognized WMSD factors include:

- A. Repetitive activities like pipetting and screwing/unscrewing caps on lab samples.
- B. Contact stress like resting wrists and forearms on the edge of a surface or leaning forward with elbows on surface.
- C. Awkward postures, overhead reaching, and twisting the body.
- D. All of the above.

T/F: The best solution for WMSDs is to ignore them and hope they will go away.

## **Warm-up and Stretching**

Stretching:

- A. Increases blood flow to the working tissues providing more oxygen and nutrition.
- B. Helps to loosen the joints to decrease stiffness.
- C. Improves alertness levels.
- D. All of the above.

T/F: When you stretch you should hold your breath the entire duration of the stretch.

## **Physical Fitness and Health and Wellness**

T/F: Physical Fitness and Health and Wellness include factors under our control that can help us be healthy and well.

## **Ergonomics Workstation Assessment**

The steps of the Ergonomics Workstation Assessment include:

- A. Identifying the task to be assessed.
- B. Applying the ergonomics principles to the current method of the task.
- C. Generating and implementing recommendations.
- D. All of the above.

## **Workbenches and Stools**

When performing precision tasks at a fixed height workbench of 36” your elbows should be:

- A. Two to 4 inches above the workbench height.
- B. At or slightly below (1 to 2 inches) below elbow height.
- C. Four to 6 inches below elbow height
- D. It doesn't make any difference.

T/F: For a fixed height workbench you may be able to adjust the stool height to achieve the desired position.

The foot ring on the stool is:

- A. The best place to position your feet for the entire time you are on the stool.
- B. Used primarily to assist in getting onto and off the stool.
- C. None of the above.

When standing at a workbench:

- A. Utilize footwear that has significant cushioning and support.
- B. As possible match the workbench height to your elbow position for the task at hand.
- C. Use a standing mat for foot comfort.
- D. Use a footrest that will allow you to put one foot up on the rest and then alternate with the other foot.
- E. All of the above.

T/F: It is worth the time it takes to adjust the stool to fit your particular workstation set-up needs.

## **Pipetting**

When pipetting you can prevent twisting and bending of the wrist, neck and arms by adjusting the height and position of tools and equipment by:

- A. Positioning solution container outside your reach.
- B. Keeping waste receptacles at a low height; no higher than top of tube being filled.
- C. Working with your arms away from your body.
- D. Elevating your arms without support for lengthy periods.

T/F: A good strategy to control fatigue when pipetting is to work as fast and as for long as you can to get the job done quickly

## **Microscopy**

T/F: Because most microscopes will be used by a variety of individuals, it is critically important that each user take the time to set-up the microscopy workstation for their unique needs.

Setting up the microscope workstation includes the following steps:

- A. Position the scope for adequate room for your legs.
- B. Adjust the stool or chair to enhance neutral body position and support.
- C. Provide a footrest if needed to ensure adequate foot and leg support.
- D. Adjust the height of microscope to match your neutral head and neck position.

- E. Adjust the eyepieces and angle of view to allow for a balanced position of your head on your shoulders
- F. All of the above.

## **Lab Hood or BSC**

T/F: Ergonomics principles of Neutral Position and Support, Reach Zone, Power Position and Fatigue Control go a long way to enhance lab hood or BSC use.

## **Test Tube**

Arrange test tubes to minimize reaching and twisting by:

- A. Placing them as far from you as possible to you.
- B. Use container to raise test tube racks.
- C. Use a vortexer mixer rack instead of holding tubes by hand.
- D. Always use only one hand to open and close test tubes.
- E. B and C above.

T/F: you can use cap removers to minimize pinch grip and stress on the fingers.

## **Material Handling**

T/F: If possible, it makes sense to consider use of lift assistive devices for material handling jobs that justify their need (heavy items that must be transported frequently).

The Power Lift Technique includes this very important step:

- A. Always look down when you lift.
- B. Always look up when you lift
- C. Make sure your feet are very close together when you lift.
- D. Always use the Power Lift by yourself; do not ask for assistance.

Other techniques to handle materials include:

- A. Golfer's Lift
- B. Two Stage lift
- C. A and B