



ERI Safety Videos

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2906

POWERLIFT®:

Lifting Training That Works

Leader's Guide

POWERLIFT®: *Lifting Training That Works*

This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation. Featured are:

INTRODUCTION: A brief description of the program and the subject that it addresses.

PROGRAM OUTLINE: Summarizes the program content. If the program outline is discussed before the video is presented, the entire program will be more meaningful and successful.

PREPARING FOR AND CONDUCTING THE PRESENTATION: These sections will help you set up the training environment, help you relate the program to site-specific incidents, and provide program objectives for focusing your presentation.

REVIEW QUESTIONS AND ANSWERS: Questions may be copied and given to participants to document how well they understood the information that was presented. Answers to the review questions are provided separately.

INTRODUCTION

Most of us have been trained to lift objects with the traditional “bend your knees and keep your back straight” technique, but it just doesn't work. This method forces us to overuse our knees and legs and our backs still end up bearing the brunt of the load. Dr. Michael Schaefer has recognized the flaws of the conventional lifting technique and developed a safe, easier and stronger lifting position: the powerlift. This technique keeps the back in a powerful and safe posture while an object is being lifted. This program explains the five lifting techniques that have been derived from the powerlift position so viewers can move materials safely in practically every situation.

Topics include flaws of the squat lift, the wide stance powerlift and its basic principles, the tipping load powerlift, the tripod powerlift, the golfer's bend, the lean-bar lifting technique and how bridging adds strength and balance as a person lifts.

PROGRAM OUTLINE

BACKGROUND

- Our backs, specifically the health of our backs, affect nearly everything we do—our ability to perform our duties at work as well as our activities at home. Even our valued recreational activities are completely dependent on the health of our backs.
- A specific lifting technique, the powerlift is designed to keep the back in a powerful and safe posture while lifting a wide variety of objects in various situations. It was developed by Dr. Mike Schaefer and has been implemented by some of the largest companies in the world, including the U.S. Postal Service.
- Dr. Schaefer has visited and implemented safe lifting techniques for material handling applications for companies worldwide. While doing so, Dr. Schaefer quickly learned the flaws of the conventional lifting technique and developed a safe, easier and stronger lifting position: the powerlift.
- From the basic powerlift position, five lifting techniques have been derived to help you move materials safely in practically every situation. Viewers will be able to perform these techniques after viewing this program, but first they need to know the cause of most back injuries and why the traditional “bend at your knees and keep your back straight” lifting technique (otherwise known as the squat lift) just doesn't work.

WHY 'BACK LIFTING' CAN BE SO HARMFUL

- Our back is made up of bones called vertebrae, with cushions in between called discs and ligaments, which hold everything together. This combination of structures is known as the spine.

- It is the main structural support for our body and as such, it can support large loads when it remains in its strong neutral position.
- Most people don't lift with their back in this neutral position, but rather by bending at the waist and using their back like a crane. This is called "back lifting."
- In this position, the forces of leverage work against us by loading our backs with up to 10 times the weight of the load being lifted, but it's not just the weight of the load we are lifting; back lifting in this manner forces us to also lift the weight of our upper bodies.
- Even worse, this increased force is concentrated mostly on the vertebrae of the lower back.

CUMULATIVE INJURY & SCAR TISSUE

- Unfortunately, back lifting is what most of us do, over and over again, repeatedly all day long—getting dressed, picking up the paper, feeding the dog; we back lift at work and we back lift at play.
- Each time we force our spine into this over-leveraged, "crane-type" position, we stretch and tear our ligaments and discs. These tears eventually heal, but the healing process replaces healthy tissue with scar tissue that then tears again, easier than before.
- This repetitive process of tearing and healing leads to a decline in the overall health of our back. Bulging discs and torn ligaments will eventually lead to injury and debilitating pain.

FLAWS OF THE SQUAT LIFT

- Back injuries are typically a cumulative injury, meaning they occur over a period of time rather than happening in one painful event, but most of us already know this.
- We may have even received prior training to "place your feet shoulder-width apart, keep your back straight and lift with your legs" in an effort to reduce the force placed on our backs while lifting.
- We may even make a good faith effort to do this "every lift—every time," but we just can't seem to make it a habit. There's a good reason we often fail at using this technique—it just doesn't work.
- It's so hard because with our feet shoulder-width apart, we must rock onto the balls of our feet, which is a weak and unstable position. Our knees are held in a deep-squat position and we can't get close enough to the load because our knees and legs get in the way, which forces us to push the load away from us.
- The main flaw with this technique is the deep knee bend required when we squat into our lifting position. With our knees bent into this deep squat position, it becomes very difficult to straighten our knees as we lift with our legs, not to mention trying to balance on the balls of our feet with the load extended out in front of us.
- The mechanical physics of this position forces us to overuse our knees and legs, and your back still ends up bearing the brunt of the load.

THE WIDE STANCE POWERLIFT

- How do we lift with our back in its strong neutral position and avoid the weak and awkward deep knee bend of the squat lift? We lift using the wide stance powerlift technique.
- Wide stance powerlift is the technique developed by Dr. Schaefer. He discovered that taking a stance wider than shoulder-width allows us to raise and lower a load vertically with our legs, similar to an elevator rather than damaging our spine by using it as a crane.

- A wide stance allows us to get closer to the load, since our knees are no longer in the way. Our feet remain flat on the floor, creating a more stable base and the knees only have to bend to a 100-degree angle for the lift.
- Dr. Schaefer calls this the “power-stroke” of the knee because it has more mechanical advantage and strength compared to the squat position. It is also much easier on hurt or arthritic knees than the squat lift.
- Have you ever notice how athletes routinely use this position in competitive play? Look at a wrestler’s stance—their feet are wide, their knees are not over-bent and they have rotated forward at the hips to keep their backs in neutral, creating a strong, flexible stance.

POWERLIFT BASICS

- Learning the basic wide stance powerlift technique will enable you to lift loads easier and safer while keeping your spine in its strong neutral position. The basic powerlift posture can be modified to accommodate other lifting applications.
- To create a powerlift, get close to the load by approaching its corner while spreading your feet wider than shoulder-width apart. Then bend your knees while you lift your head and chest; lifting the head and chest helps rotate your hips forward, which keeps your back in its strong neutral position.
- Remember, you don’t need to keep your back straight, but rather you should keep it in neutral. Again, this can be accomplished by rotating forward at the hips as you go down for the load, then lift with your legs like an elevator instead of using your back like a crane.
- Most of us are not true “power lifters” like a weightlifter, but now we know what he knows—that the wide stance powerlift with the knees at the power stroke angle and the spine in neutral is the strongest lifting posture a human can take.
- Of course, like anything new, you need to practice getting into the powerlift position before it feels comfortable to you.
- When you get it right, you can not only feel the power it adds to your lifts by keeping the knees at their power stroke angle, but you can also feel the stability and safety benefits as compared to the back lift and the awkward squat lift.
- When you practice, just remember: take a wide stance with your head and chest up for a neutral spine.
- There are four other lifts derived from the powerlift concept that give us the ability to move materials safely when confronted with various lifting situations: powerlift while “tipping the load, the tripod lift, the golfer’s bend (which is not just for golfers) and the lean-bar lifting technique.

THE POWERLIFT TIPPING LOAD

- Handles are helpful in lifting because they provide a place for a firm grip and allow us to shorten the lifting motion, but in the real world many loads don’t have handles. So what do you do? You create handles by simply tipping the load.
- As with the basic powerlift on a load with handles, get close to the load by approaching its corner while spreading your feet wider than shoulder-width apart. Then bend your knees as you rotate forward at the hips as you go down for the load, while lifting your head and chest to put your back in neutral.
- Then tip the load towards you, which creates “handles” for a firm grip while also raising the load off the floor to create an easier lift. Then lift your legs like an elevator instead of using your back like a crane.
- To be safer lifters, we need to change the way we think about lifting; one way to do this is to envision a way to create handles on various loads.

- For example, are there any handles on a child? Sure there are, under the arms. Simply apply the powerlift technique and you now have a basic powerlift on a load with handles.
- Instead of being forced into the deep knee bend squat lift position to lift furniture, use a powerlift stance and tip the load to bring it up to you and create handles.
- There are many loads that can simply be tilted to create handles for an easier lift.
- Tall objects present a special challenge. They can't be tipped towards you because you can't get close enough; instead, tip tall objects away from you, then step around them in a wide stance and lift using the powerlift technique.
- Become a safe lifter by taking the time to figure out how to apply the wide stance powerlift technique to the loads you lift.
- There are countless ways the wide stance powerlift technique can be used to minimize strain on your back.

THE POWERLIFT TRIPOD LIFT

- The tripod lift is used to safely handle loads that are hard to access. Perhaps the most common example is simply accessing a box on a low shelf.
- All too often, people use a bending and twisting motion as they attempt to access a load like this. The bend/twist motion is awful on your back; instead, save your back by going down on one knee, creating a tripod lift.
- As you go down, support yourself with one hand on a shelf and the other on the opposite knee. This lift creates three points of support, foot, knee, foot; move the load and place it on your opposite thigh.
- Now, here's the important part: let your thigh support the weight of the load as you rise. In fact, you can even push down on the load as you rise; pushing down on the load helps to push you up.
- The tripod stance comes in handy even when you have nothing to lift. For example, use the tripod stance while gardening or anytime you find yourself kneeling. Push down on your opposite knee when it's time to stand; remember, your upper body is also a load and pushing down on your knee helps support the load, taking strain off your back.
- One disadvantage of the tripod lift is kneeling on an unprotected knee. Those with painful, weak or damaged knees may be unable to use this technique; keeping a pad handy to kneel on makes this technique much more comfortable.

THE GOLFER'S BEND

- The golfer's bend is the method most golfers use to lift their ball from the cup. Of course, most golfers haven't been trained in the power lift techniques; they just do it naturally because it takes strain off their backs.
- The benefits of the golfer's bend are not limited to golfers. This lifting technique is a great way for anybody to do a one-handed lift; it relieves back strain because the motion is a pivoting of the hip rather than a bending of the back.
- The golfer's bend looks simple, but it must be done properly. When doing this lift, you must be both supported and crossed over.
- This means that if you are supported by your right hand, then your left foot must stay on the floor. This frees your hip to pivot when reaching the load.

- Failing to properly cross over by standing on the wrong foot makes for an awkward motion and places a twist in your back as you go for the load.
- Use a golfer's bend to remove clothes from top-load washers, or tall containers or storage bins. It can also be used to access items from the bed of a pickup truck.

THE LEAN-BAR LIFTING TECHNIQUE

- As we have seen, the golfer's bend is especially useful for reaching small objects on the floor, but how about those times when you just can't get to the load easily?
- Sometimes our access is blocked by something between us and the load. For example, an item in the trunk of a car or way back on a shelf, or we must reach across an assembly line or workstation.
- How do we lift safely when confronted with a situation like this? Unfortunately, most of us resort to using the back lift, not knowing what else to do, but a better method is the "lean-bar" technique that involves leaning against a horizontal bar to help reduce the load placed on your back while lifting.
- Learning to use the lean-bar technique will solve many difficult lifting problems. The key is to lean your thighs into the object that lies between you and your load.
- Of course, the object is not always an actual bar; it could be something like the bumper of a car. As you lean, let the bumper support all your body weight as you reach in to pick up the load.
- Remember, the key to a successful lean-bar lift is to transfer all of your body weight to the lean bar, in this case, the car's bumper. If you can still feel the lift in your back, then you are not leaning with enough force.
- The lean-bar technique can be used anytime a solid, immovable object is between you and the load and is lower than hip socket level, such as shelves, storage or similar situations.

BRIDGING

- Bridging is a way to add strength and balance as you lift. Bridging is when your hand and arm are placed against a solid object while lifting or rising.
- Bridging works by giving you better balance and increasing your strength. By pushing off against a solid object, you eliminate the added weight of your upper body from the lift, increasing your strength by about a third.
- Bridging to your thigh can also be combined with the powerlift stance for one-handed lifting. Once you get the feel for it, you'll be surprised how often you are able to use bridging to improve your strength and add stability to many lifting situations.

SUMMARY & CONCLUSION

- In this program, we have learned several powerful techniques for safe material handling and lifting.
- We introduced the wide stance powerlift technique and learned its advantages over the squat lift. We have seen how to overcome obstructive lifting situations.
- We demonstrated how to create handles on a load where none existed before and how to use bridging to support our upper body weight and add balance and strength.
- In order to use this information to lift in the safest manner, we must take the time to consider each lift and determine which method or combination of methods will allow us to move an object while maintaining our back in its strong neutral position.

- Of course, maintaining a general level of fitness combined with appropriate daily stretching and warm-up prior to beginning our material handling activities is also a key part of maintaining a healthy back.

PREPARE FOR THE SAFETY MEETING

Review each section of this Leader's Guide as well as the videotape. Here are a few suggestions for using the program:

Make everyone aware of the importance the company places on health and safety and how each person must be an active member of the safety team.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Copy the review questions included in this Leader's Guide and ask each participant to complete them.

Copy the attendance record as needed and have each participant sign the form. Maintain the attendance record and each participant's test paper as written documentation of the training performed.

Here are some suggestions for preparing your Videotape equipment and the room or area you use:

Check the room or area for quietness, adequate ventilation and temperature, lighting and unobstructed access.

Check the seating arrangement and the audiovisual equipment to ensure that all participants will be able to see and hear the videotape program.

CONDUCTING THE PRESENTATION

Begin the meeting by welcoming the participants. Introduce yourself and give each person the opportunity to become acquainted if there are new people joining the training session.

Explain that the primary purpose of the program is explain five lifting techniques derived from the basic powerlift position and how they can help employees move materials safety in practically every situation. .

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline. Lead discussions about specific tasks that require lifting at your facility and the techniques that should be used to keep the back safe and healthy while performing these tasks. Use the review questions to check how well the program participants understood the information.

After watching the videotape program, the viewer will be able to identify the following:

- How the traditional squat lift is flawed and how it can harm the health and safety of the spine;
- The basic principles of the wide stance powerlift;
- How to perform the four other lifts derived from the powerlift concept: the tipping load lift, the tripod lift, the golfer's bend and the lean-bar lifting technique;
- How bridging can add strength and balance as someone lifts an object.

POWERLIFT:
Lifting Training That Works
REVIEW QUIZ

Name _____ Date _____

The following questions are provided to check how well you understand the information presented during this program.

1. Back injuries typically develop over a period of time as opposed to happening in one painful event.
 - a. true
 - b. false

2. Which of the following problems with the squat lift technique is considered the main flaw?
 - a. having to rock onto the balls of our feet
 - b. placing your feet shoulder-width apart
 - c. the deep knee bend required when we squat

3. The spine is in its strongest lifting posture when it is straight.
 - a. true
 - b. false

4. When using the tipping load powerlift, very tall objects should be tipped _____ your body.
 - a. toward
 - b. away from

5. When performing a tripod lift, pushing down on the load as you rise helps to push you up.
 - a. true
 - b. false

6. When doing a golfer's bend with support from your right hand, which foot must stay on the floor?
 - a. right
 - b. left

7. If you can feel the lift in your back when performing a lean-bar lift, you are not leaning with enough force.
 - a. true
 - b. false

8. About how much strength do you add when you bridge to an object to eliminate the added weight of your upper body from a lift?
 - a. a quarter
 - b. a third
 - c. a half

ANSWERS TO THE REVIEW QUESTIONS

1. a

2. c

3. b

4. b

5. a

6. b

7. a

8. b