POWERLIFT:
Lifting Techniques For A Healthy Back

PROGRAM SYNOPSIS:
Most workers have been instructed to lift objects safely by using the "old way" of lifting; unfortunately, this method contains many flaws that result in unnecessary and very harmful stress on our backs. Lifting while balancing on the balls of our feet, too much bending of the knees, leverage that places excessive force on the lower back and overextending the spine beyond its base of support are all problems associated with this approach. To eliminate the harmful effects of the old way of lifting, Dr. Mike Schaefer, a licensed orthopedic and chiropractic doctor, has developed the PowerLift technique. This program demonstrates how to combine various lifts and postures associated with Dr. Schaefer's PowerLift technique to overcome the real world challenges presented by many material handling situations.

Topics include flaws of traditional lifting techniques, advantages of a wider stance, creating a basic PowerLift, the "tip the load" technique, the bridging technique, the tripod lift, the golfer's bend, the lean bar technique and performing PowerLift pushes and pulls.

PROGRAM OUTLINE:

FIVE POWERLIFT LIFTING TECHNIQUES
- PowerLift is not just a new way of lifting; it's a new way to think about lifting, where every lift is a safe lift.

- From the basic PowerLift position, five different lifting techniques have been derived that can be used in a variety of lifting situations: the basic PowerLift, the "tip the load" PowerLift, the tripod PowerLift, the golfer's bend and the lean bar lift.

FLAWS OF TRADITIONAL LIFTING TECHNIQUES
- Those trained in PowerLift like to call traditional lifting techniques the "old way" of lifting.

- The old way of lifting instructs us to "approach the load and place your feet shoulder width apart. Then, bend your knees and grasp the load." This is where the problems start. In this position, we find that we must rock onto the balls of our feet.

- Lifting anything while balancing on the balls of your feet is an awkward, weak and unstable position.

- If we examine the knees while in this position, we see that a deep knee bend is required in order to squat into our lifting position. This old way of lifting typically requires a 65-degree bend of the knees.

- When knees are bent this much, the lifting power of the legs is significantly reduced, making it very difficult to stand back up again.

- One universal key to safe lifting is to keep the load close to your body, but in this position, we can't keep the load close to us because our knees and legs get in the way.

- When we attempt to rise with the load, while awkwardly balanced on the balls of our feet, we inevitably must push the load away from us as we rise; in order to clear our knees.

- Anytime a load gets out in front of your body, like this, the leverage created places much more force onto the lower back and can be very damaging.

- Lifting a load like this, which we call "back lifting", is very harmful because the spine is overextended beyond its base of support, much like a large construction crane. However, unlike a crane, the spine is not reinforced to support loads in this orientation, the result being large and harmful forces placed on the delicate discs, vertebrae and other spinal structures.

- Another way to think about it is to pretend that you were designing a lifting robot. Would you make your robot have a deep knee bend and use a "crane-style" back lift, knowing that this would place excessive wear and tear on the knee joint

and also focus much of the force on a single area of the lower back, leading to frequent joint failure and increased maintenance? Of course not.

- Instead, you would design your robot to distribute the stress over all of the joints by having the knees bend only to 100 degrees, be positioned well over the load and let the hips pivot instead of the back bending to prevent over-leveraged loading of the lower back joints. This lifting robot will have minimal wear and tear and will not succumb to premature failure.

ADVANTAGES OF A WIDER STANCE

- This is the exact thought process that led Dr. Mike Schaefer, a licensed orthopedic and chiropractic doctor, to develop the PowerLift lifting technique. The PowerLift technique eliminates the harmful effects of the old way of lifting, just like weightlifters do.

- Dr. Schaefer discovered that taking a stance wider than shoulder width allows us to get closer to the load, since our knees are no longer in the way.

- In this position, our feet can remain flat on the floor, creating a more stable base of support.

- A wider stance automatically places us lower and closer to the load, reducing knee bend to around 100 degrees.

- When the knees are only bent to 100 degrees, it increases the mechanical advantage and strength available for lifting. This improved knee position is called the “power stroke angle.”

- Rising up again from the power stroke angle is much easier and less damaging than attempting to rise from the deep knee bend required by the old way of lifting.

- Perhaps most importantly, having a stance wider than shoulder width allows us to pivot at the hips instead of bending the back.

- Being closer to the load allows us to raise and lower a load vertically with our legs, similar to the lifting motion of an elevator, rather than damaging our spine using a back lift, which is overleveraged similar to a construction crane.

- Lifting with our legs like an elevator, while also keeping our chest and head up, directs most of the force down our spine vertically.

- This allows the vertebra and discs to stay stacked in proper alignment and transfers the weight of the load to our sturdier hip and leg structures.

CREATING A BASIC POWERLIFT

- To create a basic PowerLift, get close to the load by approaching the load at a corner while spreading your feet wider than shoulder width apart.

- Approaching a load at a corner will better fit the contour of your body and allows you to get over the load, making the lift much easier and safer.

- Remember this catch phrase, “last step, wide stance.” When you approach a load, always use your last step to create a wide stance.

- After creating a wide stance with your last step, bend your knees while you lift your head and chest.

- In addition to keeping your spine in its natural strong alignment, lifting the head and chest helps to rotate your hips forward into optimal lifting position.

- Use your knees to lower yourself down to the load. You may wish to support yourself by placing the palm of your hand on your upper thigh as you lower.

- Take a firm grip on the load and then lift straight up with your legs like an elevator instead of using your back like a crane.

- Lifting from this improved posture and with the knees at the power stroke angle will feel much more powerful and stable.

- It takes a little practice to make lifting this way a habit. When you practice just remember, “last step, wide stance.” Then just lift with your legs like an elevator and do not use your back like a crane.

THE ‘TIP THE LOAD’ TECHNIQUE

- One important part of a safe and stable lift is having a good grip on the load. Many loads have handles which help facilitate a good firm grip.

- There are also many loads that don’t have handles, which can make gripping and lifting much more difficult.

- Using PowerLift techniques will overcome this problem because Dr. Schaefer discovered that simply tipping a load makes the corners into handles that make lifting much easier. Dr. Schaefer refers to this technique as “tip the load” and learning it is an important part of understanding the PowerLift technique.

- As with the basic PowerLift on a load with handles, get close to the load by approaching its corner and on your last step make a wide stance.

- As you lower yourself to the load by bending your knees into the power stroke position, tip the load towards you, which creates handles which allow for a firm grip.

- Boxes, buckets and practically any type of load can be tipped to create handles as part of performing a safer lift.

- Having an understanding of the tip the load PowerLift concept allows you to modify it slightly to fit challenging lifting situations.

- For example, tall objects present a special challenge. Tall objects can’t be tipped towards you to create handles 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.

- Tall loads, loads with handles, awkward loads, practically any load can be lifted safely using the PowerLift lifting technique.

- PowerLift helps you create a new way of thinking about lifting. Use your knowledge to analyze each lift and find a way to apply the PowerLift technique to ensure a safe and powerful lift.

- For example, when team lifting heavy or awkward loads, make a lifting plan that ensures each person uses the wide stance PowerLift technique. Remember “last step, wide stance”, then lift together for a safe, powerful lift.

THE BRIDGING TECHNIQUE

- Of course, not every lift is so easily approached. Many objects are hard to access and workers tend to contort themselves into poor postures in an attempt to overcome these types of lifting challenges.

- Dr. Schaefer has developed a variety of techniques and postures that incorporate PowerLift to safely overcome these types of challenging lifting applications.

- It is important to understand that no matter what lifting technique you use, the weight of your upper body adds to the weight of any load you will be lifting.

- As you move in and out of various lifting postures, supporting the weight of your upper body by the use of your hands or other objects will greatly reduce the strain on your back.

• Using this technique to reduce the force on your back is called “bridging” and is an important part of all PowerLift techniques.

THE TRIPOD LIFT

• Lifting safely when a load is low and hard to reach can be a challenge.

• Perhaps the most common example is simply accessing a box on a low shelf. All too often people use a bending back lift and twisting motion as they attempt to access a load like this. This bending back lift and twisting motion is awful on your back.

• Using the tripod lift overcomes these harmful motions. To create a tripod lift, go down on one knee, creating three points of contact with the floor. As you go down, support the weight of your upper body by bridging one hand to a solid object and the other hand to the opposite knee.

• Once in this strong position, place the load on your opposite thigh and then rise from there using a tripod lift. When using this method, 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.

• Even when rising without a load from the tripod stance, push down on your opposite knee to help you rise. This is a great back saver anytime you must rise after kneeling down.

• Remember, your upper body is also a load and bracing as you lower and pushing down as you rise takes strain off your back.

• If you find yourself frequently kneeling into the tripod position, 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 or from the ground. Golfers tend to do this naturally because it takes strain off their backs as they bend low to reach the ball.

• This technique is a great way for anybody to do a one-handed lift.

• This seemingly simple method is a great reliever of back strain because the motion is a pivoting of the hip rather than a bending of the back.

• To enjoy the benefit of this lift, it must be done properly, which means you must be “supported” and “crossed over.”

• Supported means that you must support your body weight by bridging to a solid object.

• Crossed-over means that you’re opposite foot, the foot across from the supporting bridge, must stay on the floor.

• Being crossed over like this allows your free foot and hip to pivot out of the way while reaching for the load.

• Letting your free foot rise off the floor is the key to reaching low without straining your back.

• 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.

• Common uses for a golfer’s bend are to remove items from storage bins, to pick up small objects on the floor or to remove clothes from top load washers.

• When two hands are needed to grasp the load, you can often brace against a solid object to perform modified golfer’s bend.

THE LEAN BAR TECHNIQUE

- There are many lifting applications when something solid comes between us and the load, blocking our ability to lift using a basic PowerLift stance. For example, when we must reach across an assembly line or workstation or remove items from the back of a vehicle.

- When confronted with a situation like this, many people resort to an unsafe, overleveraged back lift, not knowing what else to do, but let's learn a better method. It's called the lean-bar technique because it involves leaning against a horizontal solid object or bar to help reduce the load placed on your back while lifting.

- The solid object must be below hip socket level to allow your hips to assume a proper lifting posture. The key to the lean bar technique is to take a wide stance and lean your thighs hard enough into the solid object so that it supports all of your body weight.

- In other words, you are bridging to the solid object with your thighs, keeping both hands free to grasp the load. Using your thighs to support your body weight will take your back out of the lift and allow your legs to do the work.

CARRYING A HEAVY LOAD

- There are a variety of ways to safely lift a load using the PowerLift techniques.

- Once lifted, travel with the load close to your body. In fact, having the load in contact with your body will help support the load and reduce strain on your back.

- For even heavier loads, you can let the load stay in contact with your thigh as you walk. Allowing a load to "ride the thigh" is a great way to reduce the strain on your back. This works for buckets, boxes, bales of straw or any other heavy or awkward load.

- Of course, when a load is too heavy or too awkward to lift alone, find a partner and use PowerLift techniques to team lift the load safely.

PUSHING AND PULLING

- People involved with material handling often find themselves pulling or pushing objects. When this is the case, use the PowerLift technique to prevent a sudden strain on your back.

- You must always avoid a sudden application of force from a poor posture or weak position. This can quickly lead to injury.

- Also, never pull one handed. One handed pulls are the cause of many shoulder injuries.

- When pulling, try to imagine the low, athletic stance you would naturally assume when playing tug-of-war. When the tug of war starts, the contestants assume a low, wide stance and drop their rear end lower to help power their pull.

- This is the same powerful movement Dr. Schaefer incorporates into the PowerLift pulling technique. This initial powerful posture is important because the hardest part of any pull is getting the object started.

- To perform a PowerLift pull, take a firm grip on the object to be pulled and take a wide stance by placing the outside foot to the side of the object being pulled while the other foot remains slightly behind you.

- Then bend your knees and drop your rear end down low to initiate a strong, powerful pull.

- The key is to make the beginning of the pull smooth, so that the forces generated by your legs pushing, your arms pulling and the momentum of your rear end dropping all come into play at the same time.

- When it's time to push, maintain your low, wide stance and push off with your rear leg while resisting with your arms.

PREPARE FOR THE SAFETY MEETING

Review each section of this Leader's Guide as well as the program. 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 program. Play it 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.

Make an attendance record 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 video 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 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 to demonstrate how to combine various lifts and postures associated with Dr. Schaefer’s PowerLift technique to overcome the real world challenges presented by many material handling situations.

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

Lead discussions about specific material handling tasks that are performed at your facility and how using the various PowerLift lifts and postures can make these tasks easier and less stressful on the spine.

After watching the program, the viewer should be able to explain the following:

- Why traditional lifting techniques are flawed;
- What the advantages of taking a wider stance when lifting are;
- How to create a basic PowerLift;
- How to perform the basic PowerLift, the “tip the load” PowerLift, the tripod PowerLift, the golfer’s bend and the lean bar lift.
- How to reduce back strain when carrying a heavy load;
- How to perform PowerLift pushes and pulls.

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Name_____Date_____

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

1. Lifting anything while balancing on the balls of your feet is an awkward, weak and unstable position.

a. True
b. False

2. Taking a wider stance to get lower and closer to a load reduces knee bend to around _____.

a. 45 degrees
b. 65 degrees
c. 100 degrees

3. When approaching a load, you should always use your first step to create a wide stance.

a. True
b. False

4. Lifting your head and chest while performing a basic PowerLift helps to rotate your hips forward into optimal lifting position.

a. True
b. False

5. Boxes, buckets and practically any type of load can be tipped toward you to create handles as part of performing a safer lift.

a. True
b. False

6. When performing a lift, supporting the weight of your upper body by the use of your hands or other objects is called _____.

a. Bracing
b. Blocking
c. Bridging

7. Pushing down on a load while performing a tripod lift helps to push your body up.

a. True
b. False

8. When performing the lean bar technique, you must use one hand to support the weight of your upper body.

a. True
b. False

9. When a load is too heavy or too awkward to lift alone, you should find a partner and use PowerLift techniques to team lift the load safely.

a. True
b. False

10. You should only pull objects one-handed when you have first assumed a low, athletic stance.

a. True
b. False

ANSWERS TO THE REVIEW QUESTIONS

1. a

2. c

3. b

4. a

5. a

6. c

7. a

8. b

9. a

10. b