

Training & Conditioning

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RUNNING ON EMPTY

**A look at athletes'
eating deficiencies**

**Career-Ending
Injuries**

**Understanding
Movement Prep**



Ready to Lift?

In order for athletes to get the most out of their strength training, their muscles need to be prepared beforehand. One way to do that is through a new technique called movement prep.

GETTY IMAGES

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& AARON TAYLOR

How do your athletes warm up before hitting the weightroom? For years, coaches asked that they perform static stretches—bending and stretching while sitting and standing. Other coaches have used a general warmup, with the idea of simply getting the muscles moving.

But neither approach is truly in your athletes' best interests. Getting athletes ready for intense activity is not just about stretching, nor is it just about warming up the body. For your athletes to get the most out of their weightroom workout, they need to use a more integrated approach.

In response, we have developed a group of movements that we call movement preparation (or movement prep) to ready the body for intense activity. In our work with athletes, movement prep

has replaced the terms "warmup" and "stretching," not by deleting them but by embracing them and pulling them into an integrated system.

EMBRACING INTEGRATION

To start, let's look at the limitations of performing just a general warmup before working out. A general warmup may get the cardiovascular system prepared for exercise, but it does not take joints to their extreme range of motion. It also does not check functional mobility or challenge functional stability. Nor does it indicate whether a joint or muscle is stiff, if a lingering injury is flaring up, or if the athlete seems off-

balance for whatever reason that day.

And what's wrong with static stretching to get ready for weightlifting? Stretching may increase muscle length, but it does not ready the neurological system for intense activity. Isolated stretching works on one simple movement pattern, but lifting a weight involves complicated movement patterns.

Pre-activity warmup and stretching are still necessary, but they must be woven into neuromuscular activities that prepare the body on a much higher level for functional activity. The main idea of movement prep is to let go of isolation and embrace integration.

As an example, think about how yoga

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Figure One: Hip Flexor Stretch with Chop Motion

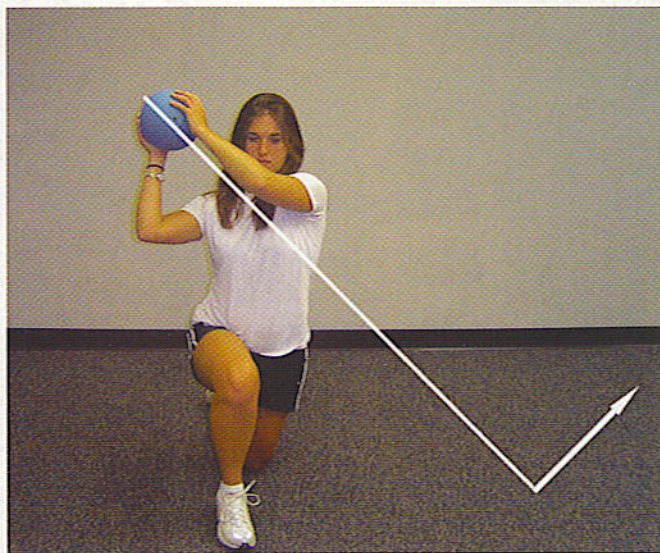


Figure Two: Static Stretch with MedBall Chop

works. In yoga, the athlete does not simply stretch one muscle group at a time. One muscle group in a particular yoga posture or movement may feel a slightly greater stretch than other muscles, but that is not the focus. The focus is the posture or the pattern of movement.

So what goes into a movement prep exercise? Simply put, there are three areas covered in every exercise: stabilized static stretch, dynamic movement with stabilization, and balance drills to address left-right symmetry. The stabilized stretch helps increase muscle length and basic posture and pattern proficiency, the dynamic movement

BEFORE LUNGING

Many workout programs incorporate the lunge, which strengthens the muscles of the core, hips, and legs. It is a simple exercise, but a very dynamic one. The abdominal muscles and hip flexors must be warmed up and working together to get the most out of this exercise. Here are two movement preps we use to get ready for the lunge:

Hip Flexor Stretch with Chop Motion: This is a stabilized static stretch, which engages the core, stabilizes the pelvis, and lengthens the hip flexors. When doing a lunge, the hip flexors will often try to assist or compensate

Simply put, there are three areas covered in every exercise: stabilized static stretch, dynamic movement with stabilization, and balance drills to address left-right symmetry.

functionally prepares the body for complicated movements, and the balance drills ready the athlete for using both sides of the body as well as red flag any posture problems. In all, movement prep will enhance the mobility and stability needed to execute movements with greater control, strength, power, and balance.

In the remainder of this article, we provide specific movement prep exercises to be accomplished with specific lifts: the lunge, squat, and deadlift. For all three, the goal is to provide a preparatory exercise that engages the core and readies the athlete for the specific movement pattern of the lift.

where the abdominals should be working. Movement prep for this motion ensures that hip extension and core stabilization work together. It enhances core stabilization while improving the hips' ability to extend. This movement prep also provides an excellent way to compare left and right function and target the weaker side prior to exercise. (See Figure One, above.)

Instructions: The hip flexor move begins with one knee down and the other foot in front in a half-kneeling position. You hold a stick in front of you, in line with the down knee and an arm's length away. Your base should be narrow, with legs no more than six inches apart. While

holding the stick with both hands, push down in a chopping motion at an angle away from the front foot. This will engage the core and stabilize the pelvis. Rock forward while continuing to hold and put pressure on the stick. Hold the stretch for 10 to 15 seconds, then return to an upright position.

Verbal cues:

- Maintain a tall spine.
- Look forward throughout the entire movement.
- Maintain a narrow base.
- Exert pressure on the stick before and throughout the stretch.

Static Stretch with MedBall Chop: This prep exercise is a dynamic movement with stabilization. It will improve static and dynamic balance reactions for lunge-related activities. The quick movement of the medicine ball chop pass stimulates stabilization reactions within the core. Requiring the half-kneeling position to be maintained provides the stretch, and the movement provides an excellent way to compare left and right function and target the weaker side prior to exercise. (See Figure Two, above.)

Instructions: Get into the same narrow half-kneeling position as the first movement. Using a medium to light medicine ball, throw a bounce pass to a partner. This movement should follow a chop pattern, starting from a point above one shoulder and finishing by the opposite hip. Make 10 to 12 passes to a partner and have the partner return the passes in the same direction. Catch the medicine ball at the top of the arc and immediately pass the ball back. Try and pick a spot on the floor for the medi-

cine ball to hit so that the bounce is the same each time. Speed up the delivery every two to three passes and try to increase the height of the bounce.

Verbal cues:

- Maintain a steady and consistent position throughout the movement without any collapse in the pelvis.
- Keep the front knee in a straight, up position without letting it collapse.
- Maintain an erect spine and move the arms in a diagonal pattern.

SOLID SQUATS

To effectively perform a squat, an athlete's hips need to be ready for deep range of motion, and the knees, ankles, and feet also require a warmup. In addition, the core must be prepared to balance and support weight. To warm up for this lift, we have our athletes complete two very different prep exercises:

Acro Roll Out: This is a dynamic movement with stabilization, which promotes bilateral hip extension in the presence of an actively stabilized core. Having an athlete roll out on Acro wheels stimulates balance and core reactions to stabilize the pelvis while the

hips go through the range of motion required of squatting movements. (See Figure Three, at right.)

Instructions: Start in a quadruped position with knees shoulder-width apart. Toes should be pointing down and hands a little wider than shoulder width. Hips should start over the heels with hips and knees in a flexed position. Slowly roll forward with the Acro wheels while maintaining hand- and arm-width positions and lower your hips to neutral or 0 degrees. Keep toes pointing straight down. Return to start position.

Verbal Cues:

- Maintain a tall and erect spine without any lag at the hips or core.
- Keep shoulders and scapula movement within position.

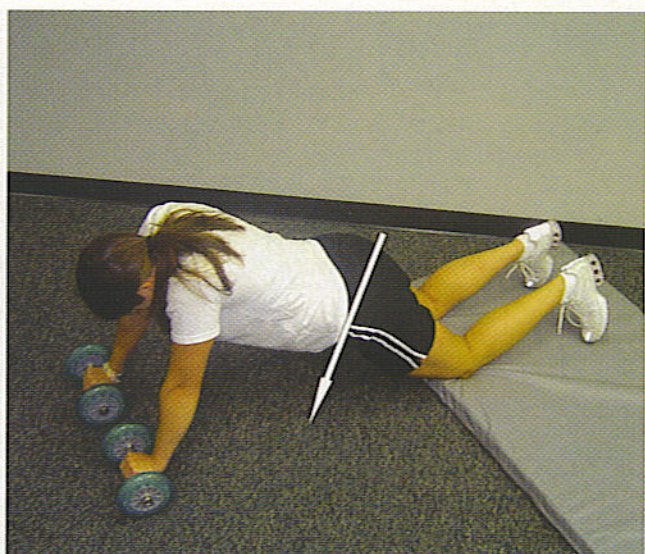
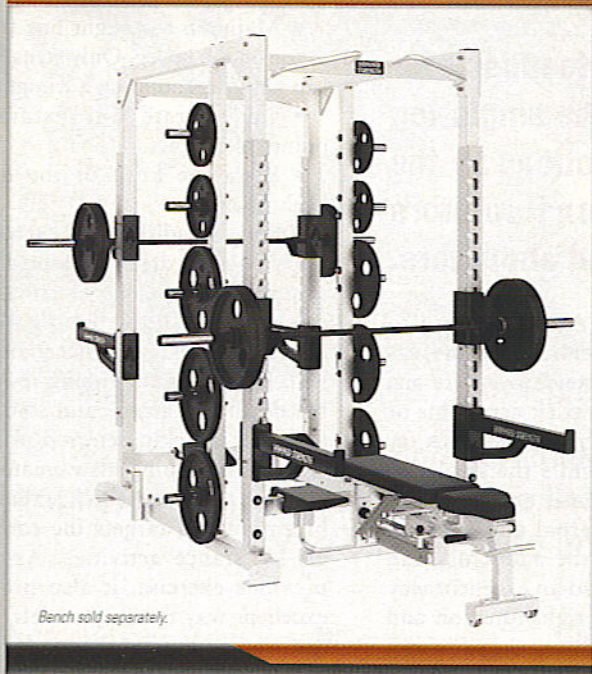


Figure Three: Acro Roll Out

- As movement improves, let arms increase flexion while taking the hips to neutral position.

Squat with Tubing: This is another dynamic movement with stabilization. The tubing assists in two ways with movement prep for the squat. First, the anterior weight shift supports the tech-

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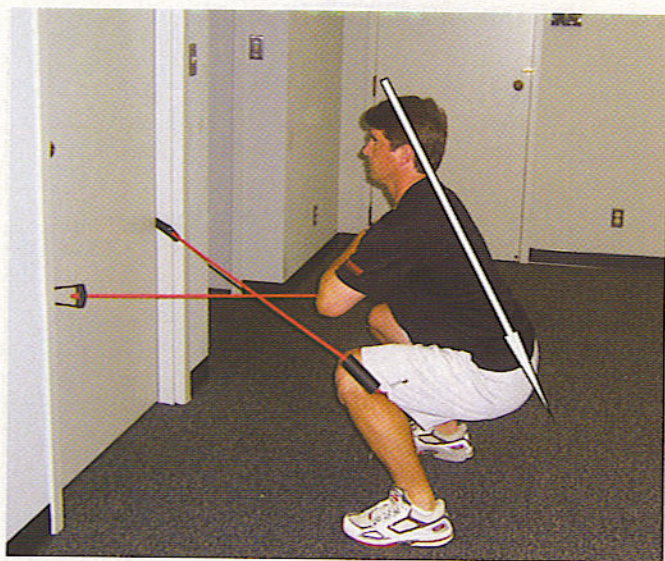


Figure Four: Squat with Tubing

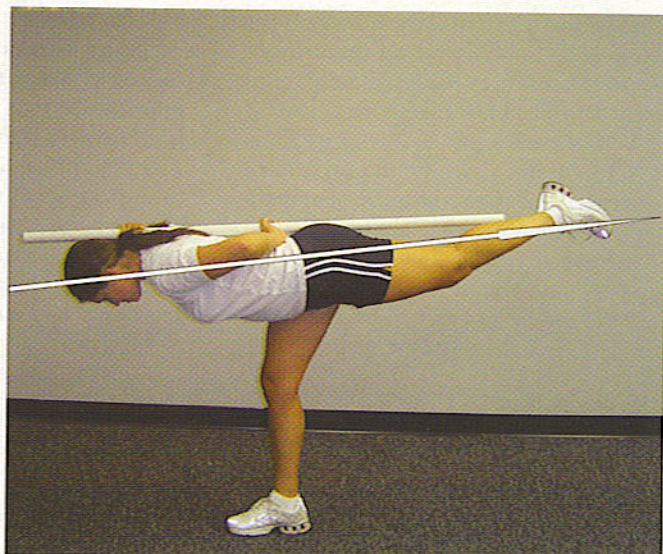


Figure Five: Bend with Stick

nique by stimulating plantar flexion and hip and knee extension. Second, the adduction creates a need for enhanced glute medius activity. (See Figure Four, above.)

Instructions: Place the points of attachment of the tubing (Lifeline FMT) at knee-height and spread the handles about the size of a door-width apart from each other. Then give the band a twist so that the tubing crosses in front of you. Step inside and face the point of attachment. Position the foam handles at the outside of your knees. Point your toes straight ahead with your feet shoulder-width apart. Start your squat.

In this exercise, the stick creates feedback for spine stabilization while the single-leg stance requires intense balance reactions by the hip internal and external rotators as well as the adductors and abductors.

While pushing your knees down, keep feet flat, and cross your arms over your chest. As you descend, keep your heels down and go as deep as you can comfortably go. Then return to the standing position.

Verbal Cues:

- Keep the line of your spine parallel to the line of the lower leg (tibia) and keep your knees over the outer half of your feet.
- Do not let your heels rise off the ground.
- If unable to go completely down, use a heel lift and slowly decrease the

size of the lift over time, working toward doing a squat with the heels flat.

- To increase difficulty, keep moving back to create more resistance.

LIVELY DEADLIFTS

We often ask our athletes to perform single-leg, single-arm dumbbell deadlifts, which require intense balance and spine stabilization. Our movement prep activities for these deadlifts involve athletes balancing on one leg while lengthening the hip muscles. We also use the movement prep activities to look closely at left vs. right side strength discrepancies. Here are the two exercises we use:

Bend with Stick: A balance drill to address right/left symmetry, in this exercise, the athlete bends over on one foot while holding a stick across his or her spine. The stick creates feedback for spine stabilization while the single-leg stance requires intense balance reactions by the hip internal and external rotators as well as the adductors and abductors. This is also an excellent way to compare left and right function and target the weaker side prior to exercise. (See Figure Five, above.)

Instructions: Start in a standing upright position while holding a dowel or

stick in both hands behind you or slightly off to one side. You will raise the opposite leg. Place one hand (still holding the stick) behind the neck with the palm facing the body. Position the other at the lumbar area with the palm facing away. In one motion, balance on one leg and flex forward (without rotating) while raising the straight leg and keeping the toes pointed up. For the down leg, the knee should be slightly bent. Four points of contact should be maintained: the back of the head, between the scapulae, the hips, and the calf. Then return to the upright position.

Verbal Cues:

- Maintain a straight line from head to toe on the up leg. Only go as far as you can while maintaining a straight line.
- Concentrate on sustaining the points of contact.
- Keep the knee of the down leg slightly bent.

Tubing Deadlift: This exercise is another balance drill to address right/left symmetry. Here, we are mimicking a single-leg deadlift with little weight, using elastic resistance instead of a dumbbell. By adding the tubing resistance to the deadlift, balance and stability mistakes are quickly detected prior to exercise. The tubing also creates greater rotational force, which enhances stabilization and targets the core for single-leg stance activities. As with the previous exercise, it also provides an excellent way to compare left and right function and target the weaker side prior to exercise. This same move can also be done with a dumbbell. (See Figure Six, above right.)

Instructions: Place the tubing (Life-line FMT) at a low attachment point. Loop the tubing around the shoulder that is above the down leg. Place the same-side hand on the lower back to help maintain a nice arch while doing the single-leg deadlift. Standing upright, grab the handle of the tubing with the opposite hand. This will create a rotational force, so it is important to maintain good posture throughout the movement. Keep shoulders parallel to hips by not letting the shoulders rotate out. Rotate forward in the same fashion as in the single-leg forward bend by keeping the body in a straight line from head to toe with the down knee slightly bent.

Verbal Cues:

- Keep the body as tall as possible throughout the movement.
- Descend only as far as this posture allows.

WHEN & HOW

While these movements are meant to prepare the body for three fundamental lifts—the lunge, squat, and dead lift—they don't all have to be done be-

fore strength work begins. They can be performed either as a single set of preparation prior to activity or as a superset between activities. Either way, they will reinforce and improve technique for the lifts.

Movement prep exercises also give the coach and athletic trainer an opportunity to observe movement problems, limitations, and restrictions prior to intense exercise or heavy loading. In many cases, movement prep can temporarily become the workout until a movement pattern is corrected or improved, at which time more functional movement or greater load can be added.

These movements are effective because they are an extension of corrective rehabilitation exercises that specifically

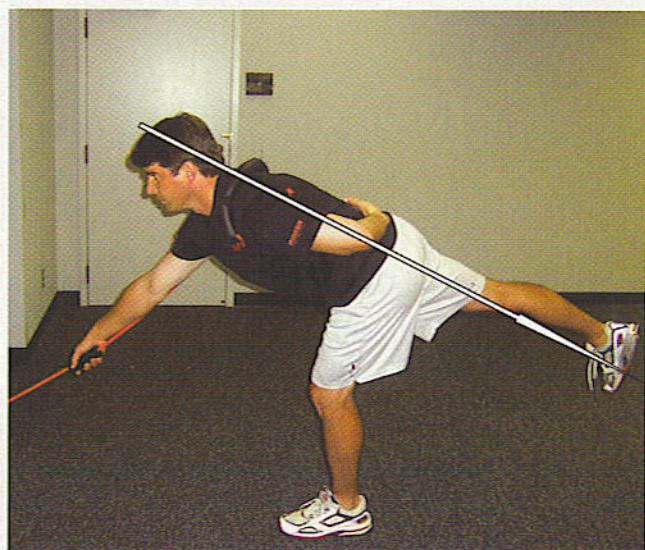


Figure Six: Tubing Deadlift

focus on the neuromuscular system and the correction of movement patterns. They do not just isolate specific muscle groups. Instead, they integrate stretching, movement patterns, balance, and core work into quick and easy exercise patterns that any athlete can benefit from. ■

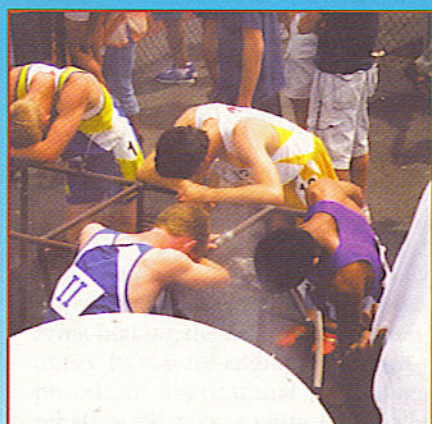
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