



What's New from APFRI

Inside this edition: National Whole Grains Month recipe, Core Training Tips, Health and Fitness Tips, Reduce Shoulder Injury article and more...



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Why Work Your Core?

August/September Newsletter 2010

Army Physical Fitness Research Institute

Core training is an essential part of any workout. A strong core provides balance, improves coordination and aids in force transmittal from the lower body to the upper body. Pushing a vehicle out of a ditch or loading a mortar can be difficult tasks if the core is not strong enough to stabilize the torso and transmit the force from your legs to your arms.

Traditional core training consisted of sit-ups, crunches and other hip and low back flexion exercises which focused on only one movement of the core and neglected the rotational and stabilizing role of the core muscles. Appropriate core training targets the muscles of the low back, hips, hamstrings and abdominals.

An important and under trained muscle of the core is the transverse abdominus (TrA). The TrA is nature's weight-lifting belt. It supports the spine and stabilizes the pelvis during lifting. Knowing how to activate it can dramatically improve strength and help prevent damage to the lower back during physical activity. The easiest way to activate the TrA, as well as the rest of the abdominal muscles, is through a technique called bracing. To best visualize bracing, think of tightening your abdominals as if someone is about to punch you in the stomach. Bracing needs to be done anytime you are lifting anything heavy.

Whether you are performing a bench press, squat, military press, dead lift or a standing bicep curl, bracing will stabilize your spine and torso and allow you to lift the weight with a greater amount of control. This brings us to the question: What are the best four core exercises?

There are a myriad of core exercises and equipment available. Regardless of what exercise you choose, the exercises need to be ones that you can and will do. Here are the four effective exercises in no particular order:

1. Dead Lift
2. Squat
3. Front Plank
4. Side Plank

These exercises were shown to have the greatest core muscle activity using integrated electromyography (IEMG) and provided the added benefit of working multiple muscle groups. With the dead lift and squat, researchers found that as little as 50% of an individual's 1RM was enough to stimulate significant increases in core muscle activation.



Not all exercises are appropriate for everyone, and these exercises do require that correct technique is used for maximum benefit and safety. If you have any questions regarding these or other exercises and how you can work them into your personal fitness plan, consider consulting with an APFRI Health Fitness Specialist for assistance.

Go for Whole Grains

Whole grains are an integral part of a healthy diet and may play a role in the prevention of heart disease, cancer and diabetes when as little as three servings per day are consumed on a regular basis. Whole grains may improve health by reducing triglycerides, improving insulin levels and bowel function, assisting weight loss efforts and slowing arterial plaque development. Whole grains provide fiber, vitamin E, magnesium, zinc and some antioxidants not found in other plant foods. The 2010 Dietary Guidelines recommends consuming whole grains as a dietary staple.

Grains consist of three distinct parts: the bran, germ and endosperm. A whole grain includes all three parts. Milling a grain removes the bran and germ, leaving the endosperm, the starchy component. If the bran and germ are not retained in the original amounts, most of the fiber, vitamins and minerals are removed, leaving an inferior product. This product is referred to as a refined grain. Refined flour is not allowed to be sold commercially unless it has been *enriched*, i.e. the addition of four B-vitamins and iron. Enriched flour does not include all of the nutrients that were removed during processing, however, the vitamin folate is routinely added which is not normally present in whole grain flour.

Some examples of whole grains are 100% whole wheat bread, whole wheat tortillas, oatmeal, brown rice, whole wheat pasta, bulgur wheat, popcorn, barley, wild rice, wheat berries and millet. Some food items that are not considered whole grain products are white rice, pasta, soda crackers, farina, white bread, sourdough bread and corn tortillas.



On food labels, whole grain foods will list a whole grain as the first ingredient. Scan the food label for the words “whole” or “whole grain” before the name of a grain, such as “whole oats” or “whole grain oats.” Any product which contains enriched flour is technically not 100% whole grain. However, if a product made with a mixture of whole and enriched grains contains at least 16 grams of whole grain ingredients per serving, it counts as a full serving of whole grain. Therefore, 48 grams of whole grain ingredients is the equivalent of three servings of whole grain foods.

It’s easy and fun to try new tastes and textures by including more whole grains in your diet! Eat a whole grain cereal for breakfast such as oatmeal, Shredded Wheat® or Cheerios®. Make a sandwich with 100% whole wheat bread. Add wild rice or barley to soup. Snack on whole grain granola bars. Prepare quick-cooking brown rice in place of white rice. Before long you will prefer the taste of whole grains over the old standbys.

Give whole grains a chance. You may notice an improvement in how you feel and possibly reduce your risk of developing a chronic disease. Please see your APFRI dietitian for ideas on incorporating whole grains into your diet.

Health/Fitness Tip

- Endurance training plays the greatest role in lowering blood pressure at rest and during exercise.
- Be sure to incorporate regular endurance training into your routine that sufficiently overloads your cardiovascular system.
- Frequently training at the same level with the same type of exercise, duration, and intensity without variation will result in decreased benefit and/or de-conditioning over time.

Ya, I'm Stressed...Now Get Out of My Face!

Ever felt overwhelmed in your work? Ever asked yourself, “What am I doing here?” or “Will this ever get better?” You’re not alone. Many Americans feel the same way. According to a 2007 survey completed by the American Psychological Association, three quarters of Americans list work as their primary source of stress and 50% of Americans believe that their work has suffered secondary to stress. Furthermore, three-quarters of Americans report various negative psychological symptoms related to stress...such as irritability and anxiety as well as various physical symptoms...such as fatigue, headaches, and stomach pain.



According to Rebecca Goldin (2004), while the financial costs of stress are difficult to determine, there are a number of indicators that a negative impact is significant. According to the American Institute of Stress, costs are associated with “accidents, absenteeism, employee turnover, diminished productivity, direct medical, legal, and insurance costs, workers’ compensation awards as well as tort and FELA (Federal Employers’ Liability Act) judgments.”

Of course, the costs to the organization can be very subtle. According to David Lee (1997), one of the losses associated with stress is the worker’s ability to make process improvements. In other words, the workers become so busy working, that there is little time or energy left to evaluate the process. Consequently, inefficient or “broken” processes are missed and can remain in place for months...or years. The results can be devastating to the organization as a whole as well as on the personal level. Mr. Lee went on to describe an analogy from Stephen Covey’s popular work, which describes the man who is reluctant to stop working long enough to sharpen his saw. Consequently, his work behavior isn’t efficient and he spends excessive amounts of time sawing, time that would have been saved if a small investment of time and effort had been made to improve his work process.

So how do we manage stress better? The following are some suggestions provided by the APFRI program and the National Institutes of Health that have been identified as useful tools:

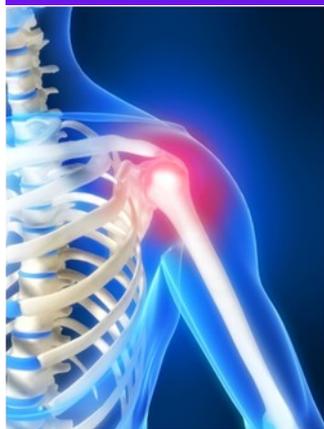
Cognitive:

1. Look for the positive in each situation...but especially in negative ones. You know the old saying about making lemonade from lemons...it works but it takes practice!
2. Watch out for “perfectionism” and “personalization.” These beliefs can quickly lead to “majoring in the minors” and taking responsibility for stuff that you shouldn’t be.

Behavioral:

1. Plan/take time for problem solving. As noted above, simply working harder may not be the best solution. Find new ways to accomplish your mission.
2. Engage in regular physical exercise...every day is best. Recommendations vary, however, most concur that about 20 to 30 minutes a day will improve your mood as well as your physical fitness.
3. Eat right. It sounds so simple and we hear it all the time, but it works. Focus on the well known food pyramid for starters and be careful to avoid over-eating.
4. Create a social network. The literature is filled with evidence that individuals who have stable, supportive social connections are more resilient to stressors. Think of your social network as your allies in the battle for balance.
5. Plan time for personal development and leisure. Let’s face it, we are all productive, busy folks and short-time self-denial will work for short-term gains. However, it’s not a good strategy for life-long success.
6. Avoid stimulants. (Like caffeine) When stressed, you are likely already sufficiently stimulated, so you likely don’t need any additional stimulation. Consuming stimulants may push your system too far and lead to irritability and/or social breakdown.

Tips for Reducing Shoulder Injuries and Pain



The bench press is a great exercise for developing general upper body strength. It builds the triceps, deltoids and the chest. However it also has a bad reputation of being the cause of shoulder pain and injury. So, what can you do to reduce the beating your shoulders endure from this exercise? Here are several tips to not just save your shoulders some grief, but to improve your bench press and upper body strength. Use a grip no wider than 1.5 times shoulder width. The wider the grip used, the greater risk of injury. Tears of the pectorals major and overuse injuries are common when using a wide grip. EMG studies have shown that the pectoral muscles and deltoids are activated just as much using a shoulder width grip as they are using a grip that is twice as wide as shoulder width. The added benefit of using a narrower grip (shoulder width) is that it activates the triceps more.

Provide structural balance – train your back and shoulders to support bench pressing. The muscles of your back support your shoulders during the bench press. The stronger your back is, the greater potential you have to bench press heavier weight. Focus on your upper back and rear shoulder. Two exercises that work particularly well are the face pull and the seated single arm external rotation.

Face pull – The face pull is performed using cable machines, bands or TRXs. The point of origin of the resistance should be between eye level and 2 feet above eye level while standing. Grasp the handle(s) with an over hand grip less than shoulder width apart. While keeping your elbows at or above chin level, pull your hands towards your face aiming for the space between your chin and nose. Pinch your shoulder blades together with each rep.

Seated single arm external rotation – This exercise is performed seated upright on a bench with one foot flat on the bench. If your right foot is on the bench rest your right elbow on your right knee with your fore arm in a vertical position. The knee should be bent so that your elbow is close to shoulder height. The angles of your elbow and shoulder should be as close to 90 degrees as possible. The exercise is performed holding a light weight in your hand. While maintaining 90 degrees flexion at your elbow, rotate your arm so that your forearm is horizontal and your hand is pointing to the opposite side of your body then return to the starting vertical position. Work up to 3 sets of 8 reps with a weight close to 10% of what you can bench press.

Mix it up – do not use just a barbell. Barbells lock your joints in a specific range of motion. Dumbbells allow your joints to orient themselves into a more natural and neutral position. Also perform the incline bench or dips to add variety to your upper body routine. These exercises still challenge your pectorals, shoulders and triceps, but the stress on the joints is different.

Decrease the range of motion – use floor presses. Decreasing the range of motion by preventing the elbows lowering beyond the level of the torso reduces the stretch on the front portion of the shoulder. By performing floor presses with a slight pause, not only do you decrease the range of motion and prevent bouncing the weight off your chest (bouncing the weight off your chest is a bad habit to get into for several reasons), it forces the muscles to have a stronger contraction.

This is not an all inclusive, exhaustive list of things to improve shoulder health. Take the time to learn what works best for you and then do it. If you are not sure about how to do an exercise properly seek guidance from a knowledgeable professional. Consulting an APFRI Health Fitness Specialist for assistance or with any questions is definitely a step in the right direction.



CGSC Annex Class Schedule

Please call
758-3421 for noon
-time lecture
locations.

September
-8 * Eating Lite: Tips for Weight Loss
1245 NTL Lewis & Clark
-15 General Fitness
1245 NTL Lewis & Clark
-22 Stress Management
1245 NTL Lewis & Clark
-*29 Physioball
Hands-On Class Gruber Gym 1500

*Special Effort
classes may allow
students to
receive Strategic
Engagement Credit
for
Blogging



For More Information: <https://apfri.carlisle.army.mil> then click on CGSC
Or <http://usacac.army.mil/cac2/cgsc/Events/APFRI/index.asp>

Become a fan on Facebook and check out updates on classes and APFRI events

Women's Symposium August 26 6:00pm-8:30pm

SCHEDULE

MILITARY SPOUSES ARE...

1800-1830 Social Hour
1830-1900 Introductory Speaker-LTC Diggs with mini
APFRI brief
1905-1925 Breakout Sessions
1930-2030 Keynote Speaker – Nancy Clark, MS, RD, CSSD
Sports Nutritionist



CGSC Staff Highlight Mrs. Cecilia Thomas Registered Dietitian



Cecilia has been a dietitian for almost 30 years, first as an active duty Army dietitian with assignments that included Army Physical Fitness School, Research Dietitian at Natick, 55th Medical Group Dietitian, and Instructor at the AMEDD Center & School. She has a bachelor's degree in nutrition from Southwest Texas State University and a master's in health promotion/nutrition from Vanderbilt University. In her free time she enjoys reading, walking/hiking, and traveling.

Tomatoes and Cukes

Sometimes, simple is best. This refreshing summertime salad is delicious and delightfully simple!

Ingredients:

2 tbsp olive oil or canola oil
1 tbsp white vinegar
1 tbsp minced fresh parsley
¼ tsp fresh ground black pepper
3 medium fresh tomatoes, sliced
½ or 1 whole large cucumber, sliced
Handful of leaf lettuce or fresh spinach leaves



In a small bowl, whisk oil, vinegar, parsley, and pepper. Set aside. On a serving plate, arrange lettuce or spinach leaves. Place tomato and cucumber slices in a pretty design over the greens. Drizzle the dressing over the top. Enjoy!

National Whole Grains Month Recipe

Mediterranean Chickpea Stew with Polenta

This meal takes about 30 minutes to prepare. It is very colorful and hearty and makes tasty leftovers. Recipe from the American Institute for Cancer Research.

In a small Dutch oven, heat 1 tablespoon of oil over medium-high heat. Add eggplant, zucchini, onions and bell pepper. Cover, reduce heat and cook until vegetables soften, 8 minutes. Add garlic, oregano, paprika and red pepper flakes. Holding a knife vertically, work it up and down in the can of tomatoes to chop coarsely. Add the tomatoes with liquid to vegetables. Mix in tomato paste and chickpeas. Cook until vegetables are soft but still hold their shape, 10 minutes. Season stew to taste with salt and pepper. The stew can be made up to 2 days ahead and reheated.

Meanwhile, brush polenta on both sides with oil. Heat a griddle or heavy skillet over medium-high heat. Add polenta slices, in one layer, and cook until they begin to brown on bottom, 5 minutes. Turn and brown on second side, 4-5 minutes.

To serve, divide polenta among 4 wide, shallow bowls. Top each with one-fourth of the stew, garnish with parsley and serve immediately.

Ingredients:

3 tbsp extra virgin olive oil, divided
2 cups diced eggplant
2 cups diced zucchini
1 cup chopped onions
1 medium red bell pepper, seeded and diced
2 garlic cloves, finely chopped
1 tsp. dried oregano
1 tsp. ground paprika
1/8 tsp. dried red pepper flakes
1 can (28-oz.) plum tomatoes (with no added salt)
2 tbsp tomato paste (with no added salt)
1 can (15-oz.) chickpeas, rinsed and drained
Salt and ground black pepper
1 tube (17-oz.) prepared polenta, cut into 8 slices
1 tbsp chopped flat-leaf parsley, for garnish

Nutritional Facts per Serving Based on 1 cup Serving

| | | | |
|---------------|------|-------------|--------|
| Calories | 390 | Total Fat | 12g |
| Saturated Fat | 1.5g | Cholesterol | 0mg |
| Carbohydrates | 61g | Sodium | 500 mg |
| Fiber | 11g | Protein | 11g |

Sudoku Puzzle Answers

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 1 | 9 | 6 | 7 | 8 | 2 | 4 | 3 |
| 3 | 4 | 7 | 2 | 5 | 9 | 6 | 1 | 8 |
| 8 | 2 | 6 | 3 | 1 | 4 | 7 | 5 | 9 |
| 4 | 7 | 1 | 9 | 8 | 3 | 5 | 6 | 2 |
| 6 | 8 | 2 | 5 | 4 | 7 | 9 | 3 | 1 |
| 9 | 3 | 5 | 1 | 6 | 2 | 4 | 8 | 7 |
| 7 | 9 | 8 | 4 | 3 | 5 | 1 | 2 | 6 |
| 2 | 6 | 4 | 8 | 9 | 1 | 3 | 7 | 5 |
| 1 | 5 | 3 | 7 | 2 | 6 | 8 | 9 | 4 |

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Ya, I'm Stressed...Now Get Out of My Face

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Tips for Reducing Shoulder Injuries and Pain while Bench Pressing

Manu Peeni, MS, CSCS, HFS, APFRI USASMA

Sudoku Puzzle

Manu Peeni, MS, CSCS, HFS & Candice Munoz, APFRI USASMA

Recipes

Troy Redford, APFRI USASMA, Tomatoes and Cukes

Jennifer Eiland, APFRI USASMA, Mediterranean Chickpea Stew with Polenta

References & Resources

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