What's New from APFRI

Inside this edition: Vibram Five-Finger Shoe, getting a good night's sleep, heart healthy dessert recipe, pulmonary hypertension awareness month and more...

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The Vibram Five-Finger Shoe

There is a growing trend among Soldiers in the military with the use of the Vibram Five Finger (VFF) running shoe, also known as the barefoot running shoe. These shoes first made their appearance on the market in 2006 and have since become very popular in the civilian sector.

Time Magazine named the VFF running shoe one of the best health inventions of 2007. Subsequently, the book "Born to Run," by Christopher McDougall, praised the shoes as well as the benefits of barefoot running (1). His theory was that running barefoot is a viable option for all runners; however, this theory has not yet been clinically proven or scientifically researched.

Additionally, Dr. Daniel Lieberman, Professor of Evolutionary Biology at Harvard University and dubbed the "Barefoot Professor," recently published an article in the journal *Nature* that gave even more praise to the benefits of barefoot running (2). Consequently, his praise made the VFF running shoe an even bigger hit. Dr. Lieberman believes barefoot running may help reduce the chance of injury; however, he admits further studies are necessary to support his claims.

According to the VFF website (3), the shoes "not only encourage a more natural forefoot strike during running, they allow the foot to move and work in a completely natural way while providing grip and protection over a variety of surfaces." This is appealing to barefoot runners because of the minimal support to replicate natural barefoot running. The VFF running shoe does have extra cushioning placed directly under the ball of the foot, which makes the shoe appropriate for midfoot/forefoot strike runners and not heel strike runners. Not all foot types are appropriate for the VFF running shoe. The VFF website states, "for pronators (people whose feet tend to flatten out during full weight-bearing activities), VFF will be too much of an abrupt change in biomechanics…and not a wise choice for weight-bearing activities" (3).

An inherent problem of advocating running with the VFF shoe is that runners think they can just change shoes and their running styles overnight. Dr. Lieberman warns that for modern humans who have grown up wearing shoes, barefoot or minimal shoe running is something to be eased into (2). Even the VFF website admits that "the too much too soon phenomenon can be a problem for anyone's foot" (3). Transitioning to VFF running shoes require significant coaching and strict adherence to running guidelines to avoid overtraining and imbalance injuries. A typical Soldier most likely will not have the luxury of a long transition time to switch running styles while still being able to maintain cardiovascular fitness levels required with the Army's current operational requirements. If individuals begin extensive training with VFF without proper progression, it can lead to negative side effects such as overuse injuries. Progression is extremely important with these running shoes and most runners do not know how to correctly transition to running in them.

The intrinsic muscles (muscles inside the foot) and the extrinsic muscles (muscles outside the foot that have an action in the foot) need to be built up over a long period of time to allow runners to run without the arch/midfoot support that most running shoes have. For elite runners, the transition to run from heel strike to midfoot/forefoot/barefoot running with the VFF shoe exclusively may take anywhere from several months to over a year. One would expect the time for Soldiers to transition to these shoes to be at least this much time if not longer.

Currently, there is no evidence-based research that shows the VFF is safe for the general runners in the Army. Further studies are warranted to clinically and scientifically prove the safety of the shoes. The VFF website even states, "we don't believe it is the only footwear you will ever need. There are many times when you need the protection and security of a shoe or boot" (3). For those who are adventurous and want to try the VFF, it is important to remember that there must be a slow progression with running. Positive effects, if any, may take a period of time to become apparent.

Turn Off Your Mind for a Good Night's Sleep

Poor sleep can negatively impact health and performance in many ways including irritability, depression, weight gain, decreased mental acuity, and ultimately reduced resilience. Poor sleep quality can also have an adverse impact on relationships and on leadership. These problems are compounded when poor sleep quality becomes a chronic pattern. One of the most frequently reported complaints is difficulty "turning off my mind," which can interfere with falling asleep and/or cause waking in the middle of the night. The tools listed below can each be highly effective when applied individually. By combining the three tools into one strategy, they become a powerful addition to your kitbag that will help you achieve a good night sleep.

- Use the "Notebook-by Bedside" technique to clear the mind. When you do, make sure that you're not yet physically in bed. This technique, used by Retired General Tommy Franks in the buildup to Operation Desert Storm, is to record on a tablet or 3X5 card anything you want to accomplish the next day, as well as obstacles that may stand in the way. Also record any thoughts you cannot get off your mind which prevent sleep. By doing so, psychologically you have put the thoughts on tomorrow's to-do list, and can therefore "cross them off the list" in your mind. By doing this at a different place and time than sleep, you have also physically moved the worry away from your bed and bedtime. Add a relaxing wind-down period or activity before going to bed. The next day, scratch off any needless items, leaving only what you wanted to remember (1).

- Employ deep, rhythmic breathing to induce relaxation. Often referred to as "Tactical Breathing" (2), diaphragmatic breathing can help you fall asleep when you first go to bed and fall back asleep after waking in the middle of the night. Tactical Breathing decreases physiologic arousal and induces calm and relaxation. You can practice by placing your hand on your stomach, which rises and falls with your diaphragm as you inhale and exhale slowly and rhythmically. Your stomach should move, not your chest. Pause before inhaling and exhaling. Tactical Breathing was originally recommended for use in high demand circumstances to reduce the stress response (2), but it can also be adapted strategically to aid in sleep onset and recovery.

- Focus on your breathing technique as a way to eliminate distracting thoughts. Redirecting thoughts back to breathing, a technique called Mindfulness-Based Stress Reduction, resulted in a reduction in worry and insomnia (3). Research in experimental psychology has demonstrated that front-loading relevant perceptions can help eliminate distractions and enhance performance (4). Increasing your focus on a goal-related relevant activity (breathing technique) can effectively take the place of distracting thoughts.

Practice is important, so don't give up after just a few tries! If you're not asleep after 15 minutes or so, get out of bed and do something relaxing. When you return to bed, repeat steps 2 and 3 again. Each of the tools listed above can be effective sleep enhancers when used individually, but when combined with an overarching strategy and employed together, these can provide you with a very powerful intervention to improve the quantity and quality of your night's sleep.

Food Manufacturers Get in the Game to Help Prevent High Blood Pressure

For the past four decades health organizations have been encouraging Americans to reduce sodium intake to at least 2300 mg daily to prevent or lower high blood pressure. Currently, many experts believe that lowering daily consumption of sodium to no more than 1,500 mg daily would be more effective. Yet, the typical individual on average consumes almost 3500 mg sodium daily (1). Seventy-five percent of this sodium consumption comes from processed foods where it functions as a preservative, flavor modifier, ingredient binder, stabilizer, and/or color enhancer. Though these uses are important, the amount of salt added is often beyond what is required for safety and function.

As part of an effort to help Americans cut back on sodium intake, the Institute of Medicine released a report in April 2010 recommending the Food and Drug Association establish new national standards for the food industry to gradually reduce the amount of sodium in foods (2). Salt is an acquired taste and studies have shown that gradual reductions over time are more accepted by consumers. Though it will take several months before the FDA works out the details for these suggested industry changes, many manufacturers have already voluntarily agreed to start cutting back on the sodium content in their products. A recent news article reported that "New York City has spearheaded a National Salt Reduction Initiative, and, as part of it, 16 companies (including Starbucks, Subway, Boar's Head and Mars) have signed on to voluntarily reduce sodium levels in their foods by 25% over the next five years." In addition Kraft announced in March plans to cut 10% of the sodium from its North American product line in the next two years. Other similar pledges have been made by ConAgra Foods Inc. (makers of Chef Boyardee and Orville Redenbacher's brands), Heinz, General Mills, Unilever, Sara Lee, Campbell's and PepsiCo (which is even attacking its Lay's potato chips). (3)

These food company efforts help reduce the amount of sodium, however even with a 25% reduction many packaged foods still contain 500-1000 milligrams of sodium in one serving. It is imperative that individuals make additional healthy food choices to help reach the 1500 mg or less daily sodium goal. The American Heart Association (1) offers these tips to reduce sodium intake:

- Learn to use spices and herbs to enhance the taste of your food. Most spices naturally contain very small amounts of sodium.
- Add fresh lemon juice instead of salt to fish and vegetables.
- Avoid or limit added salt to homemade dishes.
- Specify how you want the meal prepared when dining out. Ask for the dish to be prepared without salt.
- Don't use the salt shaker. Use the pepper shaker or mill.
- Choose fresh or frozen foods that naturally have low sodium.
- If using canned or processed foods, select items with reduced or no added salt.
- Select unsalted nuts or seeds, dried beans, peas and lentils.
- Limit salty snacks like chips and pretzels.

November is Pulmonary Hypertension Awareness Month

Preventing high blood pressure is an important goal for everyone. Getting food makers to provide healthier options (even at a slow, gradual pace) is a worthwhile endeavor. More important is challenging yourself to make individual healthy food and lifestyle choices to improve your personal health.

Heart Healthy Oatmeal Apple-Nut Crisp

- 5 medium-large Rome, Jonagold, Spartan or Honeycrisp apples, peeled and thinly sliced (about 6 cups)
- 6 tablespoons granulated sugar
- 1 tablespoon lemon juice
- 1 teaspoon ground cinnamon, divided
- 2/3 cup whole-wheat flour
- 1/2 cup old-fashioned rolled oats
- 1/2 cup packed brown sugar
- 1 tablespoon margarine
- 1 tablespoon canola oil
- 2 tablespoons frozen apple juice concentrate
- 1/3 cup coarsely chopped walnuts

Preparation:

1. Preheat oven to 375°F. Coat an 8-inch square (or 2-quart) deep baking dish with cooking spray.
2. Combine apples with granulated sugar, lemon juice and 1/2 teaspoon cinnamon in a large bowl. Toss to mix.
3. Transfer to the prepared baking dish, cover with foil and bake for 30 minutes.
4. Meanwhile, combine whole-wheat flour, oats, brown sugar and the remaining 1/2 teaspoon cinnamon in a medium bowl. Mix to blend. Using a fork or pastry blender, cut in margarine until evenly distributed and there are no chunks. Stir in oil, apple juice concentrate and nuts; toss well until evenly moistened and crumbly.
5. Remove the foil from the baking dish and scatter the topping evenly over the apples. Bake uncovered until the topping has browned and the fruit is soft and bubbling, about 30 minutes more. Let cool for at least 15 minutes before serving.

Makes 8 servings. Serving Size 1/2 Cup

Nutrition Per Serving: 239 calories; 6.8 g fat (0.6 g sat, 6 g unsaturated); 0 mg cholesterol; 43.5 g carbohydrates; 6 g fiber; 3.3 g protein; 1 mg sodium.

Traditional Apple Crisp usually has 414 calories mostly from fat (229 calories/25.4 g).

Billboard Irony

USAWC Fitness Classes - Thorpe Hall

NOON-TIME LECTURES

Combat Stress
1145-1245
October 1
WWA

HANDS-ON FITNESS CLASSES

Peak Performance
1145-1245
October
5, 7, 12, 14, 19, 21, 26 ,28

November 2, 4, 9

Teen/Parent Strength
1600-1700
October 27

Flexibility
1145-1245
November 30

Lumbar Stabilization
1145-1245
November 23

Please Join Us!

Teen/Parent Strength Training is held on the 2nd Floor.

Lumbar Stabilization, Flexibility and APFRI Peak performance classes are held on the 3rd floor.

For More Information:

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Staff Highlight
Mr. Albert Cobb, Assistant Research Analyst

Albert Cobb is the APFRI Assistant Research Analyst for the USAWC. In addition to his assistant research analyst duties, Albert draws from his human resources background and doubles as backup for a majority of the administrative staff. Originally from Moultrie, GA, Albert has served all over the globe as a personnel management NCOIC serving in Turkey, Cuba, Bosnia, Germany, Italy and Korea (twice) and in the U.S. at Ft. Hood, Ft. Bliss, Walter Reed and Ft. Eustis before retiring from the Army in 2003.

After spending 7 years in the private sector, Albert joined AFPRI in February 2010 and immediately saw the benefits of the APFRI program. “I wish I had this opportunity available to me 20 years ago. Every Soldier needs this program.” He is especially proud to be part of APFRI’s expansion plans to offer its services far beyond the War College.

Command and General Staff College Annex

The Army Physical Fitness Research Institute is currently seeking participants for our upcoming Peak Performance class; this class is designed to develop athleticism in a dynamic group setting. This intense total-body workout focuses on increasing speed, strength, power, agility, mobility, and reaction time. This class is NOT for beginners. You should be relatively injury free, and have the ability to run, jump and change directions at high speeds. Each class is taught by an APFRI exercise physiologist.

Due to special limitations, class enrollment will be RSVP ONLY

Dates: October 18 and November 19
Time: 1500-1600
Location: Functional Fitness Clamshell (Next to Harney Gym)

Contact:
Mr. Tom Davis @ (913)-758-3409

For more information

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Log onto:

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

CGSC Staff Highlights
Mrs. Sonja Campton and Mrs. Paula Cunningham

Sonja came to APFRI after working for 14 years with the United States Census Bureau in Kansas City, KS, where she was a Supervisory Clerk with the Current Population Survey. She holds two Associate Degrees from Kansas City Kansas Community College in both General Studies and Office Technology Management.

Sonja will return to school in the fall to pursue further education. She is a pet lover, and she and her husband have two dogs, a cat, and a bird. She enjoys reading, watching movies, bowling, and doing activities with family and friends.

Before coming to APFRI as an Office Automation Technician, Paula was the Administrative Readiness NCO for the Battle Command Training Center at Fort Leavenworth, KS for four years. In addition to her APFRI duties, Paula is a Warrant Officer with the Army National Guard with 11 years of service. During her military career Paula has traveled the world, deployed to Bosnia and has had the honor in supporting the victims of Hurricane Katrina when her National Guard unit mobilized in support of the relief efforts.

A native of Texas, Paula now resides in Leavenworth, KS. She is a pet lover who enjoys reading, traveling, music and working out. Paula will earn her Bachelor's Degree in Psychology from Columbia Southern University this year.

USASMA Annex Class Schedule

October

Hypertension: The Silent Killer
4 October

General Fitness
13 October

Executive Stress Management
27 October

Leveraging Type A Behavior
29 October

November

Increasing Aerobic Power
1 November

Hypertension: The Silent Killer
10 November

Restorative Sleep: Retake the Night
17 November

Cholesterol and You: Gearing up for Changes
24 November

Classes are held in the East Auditorium 1200-1250

Important Dates

Major Trisha Stavinoha
Guest Lecturer
Dietary Supplements for Soldiers
12 October

Women's Health Symposium
21 October

Spouse Blood Draw
25 -29 October

LTC (RET) Danny McMillian
Guest Lecturer
Made to Last: Forging Physical Success Across the Military Lifespan
2 November

USASMA Staff Highlight
Major Mae Cisneroz, Deputy Director, USASMA APFRI

Major Mae Cisneroz serves as the Deputy Director of the Army Physical Fitness Research Institute (APFRI) Annex at the U.S. Army Sergeants Major Academy (USASMA) at Fort Bliss, TX. Her previous military assignments include: OIC, Physical Therapy Clinic, Soldier Family Medical Clinic, William Beaumont Army Medical Center (WBAMC), Fort Bliss, TX; Assistant Chief, Physical Therapy, WBAMC, Fort Bliss, TX; Chief, Physical Therapy, U.S. Army Health Clinic Camp Casey, Republic of Korea; Assistant Chief, Physical Therapy, U.S. Army Health Clinic, Mannheim, Germany; Chief, Physical Therapy, 86th Combat Support Hospital, Camp Adder, Iraq; and Staff Physical Therapist, USA MEDDAC, Fort Jackson, SC.

Major Cisneroz earned a Doctor of Physical Therapy degree from Temple University, a Master of Physical Therapy degree from the U.S. Army-Baylor University, and a Bachelor of Science degree in Kinesiology-Exercise Science from the University of Houston. She is a Board Certified Specialist in Orthopedic Physical Therapy from the American Physical Therapy Association and is also a member of the Military Chapter of the American Physical Therapy Association.

In her spare time, Major Cisneroz enjoys working out, playing sports, and is an avid runner. Last year, she was a part of the Fort Bliss Women's 10-miler team and competed in Washington, D.C. She also enjoys playing sports on the post intramural teams, especially volleyball. Her favorite hobbies are sightseeing, photography, and traveling. She has visited over 30 countries during her civilian and military travels.

Contributors/Article Authors

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Food Manufacturers Get in the Game to Help Prevent High Blood Pressure
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Heart Healthy Oatmeal Apple-Nut Crisp
Mrs. Cecilia Thomas, RD
CGSC Annex APFRI

References & Resources

The Vibram Five-Finger Shoe

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Turn Off Your Mind for a Good Night's Sleep

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Food Manufacturers Get in the Game to Help Prevent High Blood Pressure

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2. *Strategies To Reduce Sodium Intake*, Report Brief, Institute of Medicine of the National Academy of Sciences, April 2010.
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