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E-3 News

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Electronic Exercise Education

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Whole-Body Vibration & Hamstring Flexibility

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Will whole-body vibration training help increase the range of motion of the hamstrings?

R. van den Tillaar, *Journal of Strength and Conditioning Research*, 2006, 20(1): 192.

The hamstrings, the large muscle group in the back of the thigh, when excessively tight, can contribute to low back strain. For athletes, the feared “hamstring tear” impels them to stretch those muscles regularly. Stretching can be done in a number of ways: static, dynamic, or with proprioceptive neuromuscular facilitation (PNF). While all do work by mechanisms not yet scientifically-identified - either increasing stretch tolerance or reducing stretch resistance – it is agreed that some version of increased tissue strength and/or analgesic effect occurs. Both mechanisms, however, may be enhanced by whole-body vibration (WBV), a technology that only recently came to the U.S. WBV requires that the person stand on a platform that vibrates at very high frequencies but with low amplitudes (minimal movement), presumably stimulating muscle and bone development. This study tested WBV’s ability to facilitate hamstring flexibility.

Two groups of college-age students were tested on hamstring range of motion (ROM) prior to the training programs: stretching only vs. stretching plus WBV. After 4 weeks of 3/wk sessions lasting less than 10 minutes each, the WBV group made the most dramatic gains the first week and continued making gains throughout the program. The stretching group made gains the first 2 weeks but none thereafter. The WBV group increased ROM by 2.68 degrees vs. 12.4 degrees in the stretching only group.

The conclusions are obvious: WBV can help increase hamstring flexibility, and the tighter you are, the more it can help you.

RECIPE OF THE MONTH

from food.cookinglight.com [Cooking Light 3/99]

Fruit ‘n Granola

makes @ 6 cups



- 4 cups regular oats
- ½ cup sliced almonds
- 1 tsp. ground cinnamon
- ¼ tsp salt
- 1/3 cup honey
- 1/3 cup molasses
- 1/3 cup water
- Cooking spray
- 1 cup chopped pitted dates
- 1 cup raisins

■Preheat oven to 325 ■Combine first 4 ingredients in a large bowl and stir mixture well ■Combine honey, molasses, water, and oil in a medium saucepan; bring to a boil ■Remove from heat; pour over oat mixture, stirring well to coat ■Spoon mixture onto a jelly-roll pan coated with cooking spray; spread evenly ■Bake for 40 minutes or until lightly toasted, stirring every 10 minutes ■Remove from oven ■Stir in dates and raisins ■ Cool completely ■Store in airtight container Serving size @ 1/2 c: 277 calories, 6.2g fat, 53.4g carbohydrates, 5.8g protein, 5.2fiber.

Multi-Task for Better Balance:

Adults may be able to improve their balance under dual-task conditions by balance training.

Bicep curls, shoulder presses and squatting while on a balance beam, board or BOSU Trainer is one example.

A more advanced exercise would be to do a combination of the exercises mentioned above.

Pearls...

Intermittent cardio exercise equals higher caloric burn: According to a study in the Journal of Exercise Physiology online [2005;8(4):1-8], total energy expenditure during 30 min of intermittent exercise and three 15-minute recovery periods was slightly greater than the collective energy expenditure for 30 continuous minutes of exercise and 45 minutes of recovery. The 30 minutes of continuous exercise actually had a slightly higher energy expenditure (7 Kcals), but the three 15 minute recovery periods from the intermittent exercise produced a higher energy expenditure (22.2 Kcals) accounting for the 15 Kcal difference between the protocols.

Shake Off Depression with Exercise: A report in the Jan. 2006 edition of Medicine & Science in Sports & Exercise concluded that exercise is the best medicine to shake off feelings of apathy, sadness, and hopelessness. Subjects with higher cardiorespiratory fitness levels were less likely to suffer from depressive symptoms.

Full-body exercise training improves fitness and quality of life in survivors of breast cancer.

B.S.B. Cheema and C.A. Gaul. *Journal of Strength and Conditioning Research*, 2006, 20(1): 14.

The battle with breast cancer, including the various treatments and drugs, can have a debilitating effect on the body, bones, and spirit of its victims. Exercise has been promoted for its myriad benefits – from cardiovascular wellness to musculoskeletal strength to psychological well-being. Studies have borne this out. However, lymphedema (due to surgical removal of some lymph glands, swelling of the arms may need to be monitored) and “life satisfaction” (a positive emotional state, in light of the fears and consequences of treatment) are primary concerns for the exercising cancer survivor. This investigation set out to demonstrate that an 8-week strength plus cardio training program could be done safely and effectively, yielding improvements both physiologically and psychologically.

A full-body free weight routine of 2-3 sets of 8-12-repetitions of 10 exercises was performed twice a week; cardio was done three times a week. The 27 subjects were at least 6 months post-treatment, though some were still taking certain medications (hormone therapy). There was no control group. All subjects improved strength without developing lymphedema or any other complications; all reduced body fat, increased aerobic capacity, and increased flexibility. Using two psychological metrics, there was an 8-9% improvement in “quality of life” measures. Although there was no control group, it would still be safe to conclude that a well-devised, progressive training program can help the breast cancer survivor improve physically and emotionally.

ABDOMINAL EXERCISE OF THE MONTH

PLANK

Lie facedown on the floor with your upper body propped on your forearms and your elbows directly beneath your shoulders. “Lift belly button away from the floor.” Your torso should be off the floor so your body is in a straight line. Do not let your belly droop.



ADVANCED

Kneel in front of exercise ball. Lean forward while placing your forearms on the ball. Press your forearms into ball and lift your knees off of the floor. Tighten abdominals the entire time during the exercise. Once you have reached a position where your body is straight, hold, then slowly lower and repeat.

