

Research Roundup

Weight not weak leg muscles contribute to increased OA risk for men

A study published recently in the *Annals of the Rheumatic Diseases* revealed low knee extensor strength in adolescent men does not appear to be a risk factor for developing knee osteoarthritis (OA) in middle age, according to Swedish researchers. This finding challenges currently held beliefs.



The 23-year study tracked more than 41,800 men who were required to enlist and serve in Sweden's armed forces or government at age 18. Data on isometric knee extensor strength, weight, height, smoking, alcohol consumption, parental education and adult occupation also were obtained. After excluding men without data, or those who emigrated or died before 1987, there were 40,117 men left in the study.

At enlistment, participants had a mean knee extensor strength of 324 Nm, mean body weight of 66 kg (145 lbs.) and a mean body mass index (BMI) of 21 (normal range for men is 19 to 24 and between 91 to 197 lbs.)

Approximately 14 percent were considered underweight and seven percent overweight. Less than one percent were diagnosed with OA, rheumatoid arthritis or knee meniscus/cartilage injury at their enlistment medical exam.

When the researchers reviewed the medical follow-up data taken between 22 to 25 years later, of the 40,117 participants there were 2,049 with diagnosed knee OA. After calculating adjustments, the incidence of knee OA was 1.12 for each standard deviation (SD) of knee extensor strength, and 1.18 per 5 kg of body weight. As much as 15 percent was attributable to knee injury and physically demanding occupations. The mean age at the time of the knee OA diagnosis was 53 years.

Based on their findings, the researchers concluded that higher knee extensor strength in adolescent men was associated with an increased risk of knee OA by middle age, challenging the current belief that low muscle strength was the contributing factor. They also confirmed increased (higher) body weight was a strong risk factor for knee OA.



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Organized sports don't provide children with enough exercise

A recent study published in the *Journal of Sports Sciences and Medicine* by Kansas State University researchers revealed children are not getting as much exercise as parents think when it comes to organized sports and activities.

The American Heart Association, the U.S. Department of Health and Human Services and the American Academy of Pediatrics recommend children age six and older get at least 60 minutes of moderate to vigorous activity every day, including



bone and muscle strengthening activities. However, researchers found that between sitting while listening to instructions, standing in line while waiting their turn and other parts of practices, only about 30 percent of practice time is actually spent in moderate to vigorous exercise.

“Some parents might think enrolling their children in organized activities or structured sports with hour-long classes or practices would fulfill this need, but our research showed they do not,” said the lead researcher. “In an hour of practice, the children are getting about a third of the physical activity they need for the day—a little bit less activity than people would expect,” she added.

The researchers also noted that although the activities are not providing as much exercise as children need, they are still beneficial because they provide structure, companionship and character building opportunities, along with some exercise.

To help ensure children get at least 60 minutes of the daily activity they need, the researchers recommended parents make sure children have at least 40 minutes outside of practice to play freely at a playground, jump on a trampoline, play catch in the yard, hula-hoop, or engage in whatever activity the child enjoys most.

Play, participate at peak performance with sport-specific OTRF programs

Through the Orthopaedic Surgery & Sports Medicine Teaching & Research Foundation (OTRF), Dr. Steven Chudik and his health performance team provide reliable and proven training information to help athletes of all ages and abilities compete and perform at their best—no matter if it is a state athletic championship, or a weekly golf outing with friends. Created as individual programs, these popular resources are research-based, and incorporate appropriate exercises into weekly training schedules to maintain conditioning and help minimize injuries.

The health performance programs are electronically distributed with the OTRF *Active Bones* e-newsletter. To automatically receive new programs, email OTRF and request to be added to the *Active Bones* mailing list. Sports performance programs previously developed by OTRF are available as PDF downloads from otrfund.org/. To download a program, click on the Sports Performance button on the home page, or email contactus@chudikmd.com for a printed version. Make sure to include your mailing address.



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