

Jumping for joy... and stronger bones

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High impact activities such as jumping and skipping that can easily be incorporated into warm-ups before sports and physical education classes, have been shown to benefit bone health in adolescents.

The 10 minute school-based intervention, provided twice a week for about eight months, significantly improved bone and muscle strength in healthy teenagers compared to regular warm-ups.

Physiotherapist Ben Weeks said the warm-up which included tuck jumps, star jumps, side lunges and skipping with gradually increasing complexity and repetitions, was specifically designed to apply a bone-stimulating mechanical load on the skeleton. Students worked up to about 300 jumps per session by the end of the study.

"Eighty per cent of bone mass is accrued in the first 20 years and especially around puberty due to the circulating hormones. This study targets a window of opportunity in adolescence to maximise peak bone mass with high-intensity, weight-bearing activity."

The study of 99 adolescents with a mean age of almost 14 years found boys in the intervention group improved whole body bone mass while the girls' bone mass specifically improved at the hip and spine.

Boys in the bone-friendly warm-up group also lost significantly more fat mass than the other boys.

Mr Weeks said the gender-specific response to the exercise program

may be related to the different rates of physical development with girls reaching maturity at an earlier age than boys.

"Peak height velocity is at different ages in boys and girls. Most boys in the group were right at that stage while most girls in the study were past puberty."

He said the improved bone strength at the hip and spine in girls was promising as those were the typical sites for osteoporotic fractures in the elderly.

While the study showed that a simple, practical exercise intervention can result in worthwhile skeletal benefits in adolescents, Mr Weeks said larger, longitudinal studies were required to determine whether the beneficial effects could persist into adulthood and reduce the risk of future bone fractures.

Source: Research Australia

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