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Foal Exercise Might Prevent Future Bone Injuries

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Tailored exercise programs involving habitual low-intensity loading during early development could reduce the prevalence of osteochondral injury later in life, said a group of veterinary orthopedic researchers.

According to the researchers, "The positive effect of exercise on bone mineral density has been documented extensively in several species, including the horse."

The orthopedists sought to evaluate the influence of three different activity levels on subchondral bone mineral density (sBMD, the density of the bone located directly under articular cartilage) in foals during early maturation.

Forty-three foals were randomly divided into one of three groups from time of birth until the end of the study period (which ranged from 5 to 11 months). The first group was sedentary, the second group was subjected to sprint training superimposed on a sedentary lifestyle, while the third were pastured on over 2 hectares and permitted to exercise freely. The proximal phalangeal (P1) bone was then analyzed at two separate sites and at depths ranging from 1 mm to 5 mm.

Key findings in this study were that:

- A clear and significant effect of exercise on sBMD was noted by 5 months of age;
- The sBMD was significantly lower in both sites of the proximal phalanx in the sedentary group of foals compared to both of the other groups, and
- There was no significant difference in sBMD between the sedentary group with sprint training and the pastured group of foals.

These results led the researchers to speculate if similar effects on the distal metacarpal condyle could be expected and whether condylar fractures could be prevented via the institution of well-tailored exercise regimens at a young age.

Research is ongoing.

The study, "Influence of intensity and changes in physical activity on bone mineral density of immature equine subchondral bone," was published in the September 2009 edition of the *Equine Veterinary Journal*. [The abstract is available here.](#)

Readers are cautioned to seek the advice of a qualified veterinarian before proceeding with any diagnosis, treatment, or therapy.



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