



MSHA's Occupational Illness and Injury Prevention Program Miner's Tip

**Your
Health
Comes
First!**

“Knee Injury Prevention”

Category : **All Mines**
Mine Type: **Health and PPE**

MSHA is working jointly with mine operators, NIOSH, academia, and health professionals, as partners in an effort to develop knee protection systems. The ultimate goal is to prevent debilitating injuries and reduce knee injury incident rates in the mining industry.



Industry experts are exploring the technologies associated with developing pads/braces/ergonomic programs for the optimum "knee protection system" in the industry and particularly for low seam coal miners. However, in the interim, a physical therapy specialist has pointed out that in addition to wearing adequate knee protection miners can immediately take preventative measures to potentially minimize long term damage to the knees. Since the low seam miners are in the nearly constant kneeling position during the course of an 8 to 10 hour day, and subjecting their knees to direct compressive forces, he recommends the following:

- Miners periodically take a few minutes to "unload" the knee by repositioning themselves and doing a few repetition range of motion exercises (bending, stretching and flexing of knee/leg).

By periodically relieving the compressive forces through repositioning and motion exercises, shock absorbing tissues in the (i.e., cartilage, meniscus) are better able to absorb synovial fluid needed for nutrition in these structures and to improve knee lubrication. The result may be longer term maintenance of the mechanical strength and health of these shock absorbing structures. Miners must be made aware that the relatively simple activity of periodically relieving pressure on the knee and exercising the knee joint may aid in the prevention of potential long term debilitating knee injuries.

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MSHA extends a thank you and a tip of the hardhat to:

Kelley Fitzgerald
Physical Therapist, University of Pittsburgh

Kelley is a winner of a limited edition sticker and patch. If you have a tip you would like to pass on, you can e-mail it to MinersTips@msha.gov. If your tip is selected, you will receive credit in this space.

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Remember – Safety and Health are Values!