



MAKE YOUR NEXT JOB A CUSHY ONE:

THE VALUE OF QUALITY PPE FOR LONG-TERM KNEE HEALTH

AN ERGODYNE WHITE PAPER

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// WORK CAN BE A PAIN IN THE NECK KNEE

Whatever trade you ply, work shoes are not a one-type-fits-all proposition. After all, different shoes or boots are designed with specific soles to provide traction and support on rough surfaces, slippery surfaces, finished flooring, construction sites, carpeting, etc. The same truism applies to “shoes” for our knees (but more on that later).

The largest joints in our body – i.e., knees – are complex and critical, the place where the three main bones of the leg (femur, tibia, and fibula) meet and are protected by the kneecap (patella). Large ligaments hold each knee together, and tendons attached to the bones allow muscles to extend and flex the lower leg. Cartilage facilitates the movement of the bones where they meet and, along with fluid-filled bursa sacs, cushion the knee.

Knees can be temporarily or permanently damaged by dynamic, athletic actions such as a twist, a hard plant, or a fall, but static stresses can also lead to disability. Sustained pressure on the cartilage or bursa can be very painful, especially when paired with osteoarthritis or other ailments associated with aging or overuse. Concentration of pressure on a small part of the knee, such as kneeling or pressing against very hard surfaces, can be distracting enough to interfere with a worker’s concentration and productivity.

Carpet layers, masons, baggage handlers, tile setters, carpenters, and other trades do plenty of hard work at or near ground level. In some positions, those knees support a majority of their body weight in a very different way than while standing. These workers don’t want to be distracted by pain, discomfort or concerns about long-term problems. Tasks that involve frequent stooping, kneeling, or squatting increase your risk of developing bursitis, tendinitis, or arthritis in the knee. But this workplace hazard is often overlooked since the debilitation is so gradual.

The risk of arthritis increases for workers who already have had a knee injury and work in these positions.¹

In a national survey of working adults (aged 33-41), the incidence of musculoskeletal disorders including knee injuries was found to be linked to the hazardous job activity of kneeling or crouching.²

// KNEE PADS ARE KNECESSARY

Just as shoes do for feet, knee pads should cradle and support all the bones, cartilage, tendons, and ligaments in knees. High-quality knee pads should conform to the shape of the knee as they move and change position. Old-school knee pads provided a slightly softer surface to kneel on, but concentrated pressure on limited areas. Shaped knee pads with foam lining, gel sheets, or injected gel materials, are designed to surround the knee joint, conform to and cradle it, and most importantly, stabilize it when pressure is applied. The padding is designed to distribute pressure across the entire knee area, as well as to absorb some of the impact associated with moving around, shifting weight when changing positions or “walking” on your knees.

Workers who spend a good deal of time in the kneeling position put 89 percent of their body weight on a small surface area. Prolonged kneeling can often lead to injury. The rationale for using knee pads is to protect the knee by distributing your weight over a larger surface area and reduce the force passed on to soft tissue.³



700,000
KNEE REPLACEMENT SURGERIES PER YEAR
\$49,500: AVERAGE COST FOR A KNEE REPLACEMENT
AVERAGE RECOVERY TIME: 12 WEEKS

// BE A SHELL OUT

For simple or short-term tasks, a pair of inexpensive foam knee pads might suffice, just as a simple pair of flip-flops do for walking to the beach. Beyond the padding, pro-grade knee pads usually incorporate some type of protective shell, analogous to the sole of a shoe.

The shell’s job is to protect from hard or sharp objects, such as rocks, nails, debris, or even bumps in the floor. Depending on the floor’s surface, desirable features could include traction or slip-resistance (roofers); water- or chemical-resistance (custodians and cleaning crews); or non-marring materials (tile installers and finish carpenters). That said, some workers may actually prefer smooth, easy-sliding shells that allow them to scoot around or across certain work surfaces without crawling.

Reducing discomfort associated with kneeling on hard surfaces for prolonged periods may increase productivity because workers would presumably be able to work for longer periods without standing up.³



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// STYLES FOR MILES

The new generations of knee pads also offer more choices for attachment to the worker's knee and leg – a common source of user complaints. Straps that are too tight or feel funny can restrict circulation and cause other problems. Whether hook-and-loop fasteners, buckles, elastic straps, etc. are used, knee pads should fit the task and the worker. Worn all day, or in challenging conditions, they need to be secure and may need to fit over cold weather or other types of protective clothing. For intermittent use, the straps should be easy on/easy off. For folks on the go, the straps may need to articulate for easy walking as well as kneeling. Fortunately, a variety of styles are available to choose from well-stocked vendors.

OSHA® ANALYSIS:

FOR EVERY DOLLAR INVESTED IN EFFECTIVE SAFETY AND HEALTH PROGRAMS, AN EMPLOYER CAN **EXPECT A RETURN OF \$4 TO \$6**



Knee pads stay with the worker wherever they go: they are essentially portable personal padding/protective equipment (PPPPE!).

But sometimes, they just don't work in a specific situation or are not what workers prefer. It may be possible to pad the kneeling surface instead of the knees. This would be analogous to walking without shoes on deep carpet.

Kneeling pads, conversely, are typically thick, padded accessories that workers take with them. Often small and portable for controlling localized pressure, they can also be used to cushion elbows, shoulders, hips, and other body parts when working in tight, constrained, or twisted postures. That's equal opportunity comfort! Larger versions can be used to provide whole-body support, and are comparable to anti-fatigue mats for feet and legs. They can be staged near areas where regularly used and shared by a number of employees who work there.

Modern surgical techniques, reflexology, and a variety of drugs can help treat knee pain when it starts interfering with work, but the less painful approach for your workers' knees (and your bank account) is to invest in quality knee pads that will keep them pain-free and productive for the long haul.

// NOTES, REFERENCES AND MORE

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MAKE THE WORKPLACE A BETTERPLACE.™

THIS DOESN'T HAVE TO BE THE END OF THE ROAD, DEAR FRIEND.

Now that you've read our white paper on the long-term harmful effects of working on your knees – and how much quality PPE can help – check out our innovative ProFlex® Gel Knee Pads. Prepare to leave port on a lifelong patella-pleasure cruise.

MORE QUESTIONS?



800 225 8238



orders@ergodyne.com



www.ergodyne.com