PREVENTING WORK-RELATED MUSCULOSKELETAL INJURIES

Back injury is the most common cause of occupational injury for people who work with young children—but preventative measures are effective and can be easily learned.

by Alicia M. Wortman

Common sense tells us that happy healthy employees are more productive in the workplace. In the child care environment, employee productivity directly affects our children. Although researchers have studied the health and epidemiology of illness among children in out-of-home day care, few have examined the occupational health of caregivers. Just like any workplace, there are environmental and occupational hazards in a child care center. Ideally, we want to minimize the hazards and maximize the opportunities to ensure the health and safety of the employees.

Ergonomics for Child Care

Ergonomics is the scientific study of fitting a job to an individual. This science can, and should, be applied to the child care setting. Musculoskeletal injuries are relatively high among child care providers. The Bureau of Labor Statistics reported that one of every 100 child care workers suffered a nonfatal occupational injury in 1999 (Bureau of Labor Statistics). Working as a child care provider can be a physically demanding job. It requires constant interaction with active (sometimes hyperactive), spontaneous, impulsive, heavy (sometimes very heavy) children. Lifting, stooping, bending, climbing, crawling, reaching, pulling, and pushing are just some of the strenuous activities required. According to the Center for Disease Control and Prevention, back injury is the most common cause of occupational injury for child care providers (U.S. Public Health Service). Aches, pains, muscle strains, and sprains are also commonplace. Many of these musculoskeletal injuries can be prevented.

Phyllis M. King noted the paucity of documented research regarding the health and safety of the child care provider in a child care setting (King, Gratz, Scheuer, & Claffey). However, research in other workplace settings can be applied to the child care setting. Child care providers need to be educated about what to do, and what resources to use, so they can improve the efficiency and safety of their working environment. The medical literature reports that most back pain is not the result of a single injury. Even though pain may be felt suddenly, the problem is almost always due to a combination of several factors. These factors include poor posture, faulty body mechanics, stressful living or work habits, loss of flexibility, and a general decline of physical fitness (Saunders). The good news is that we have control over these factors. We can improve our posture and body mechanics. We can work with our co-workers to improve the ergonomic set-up of our workplace. And, we can exercise regularly to improve our flexibility and general fitness.
Education is Key

The child care provider must learn about these issues as part of employment orientation. However, the education should not stop here. Education of employees should be an ongoing process with regular in-service, provision of written brochures and literature, and reminders that help staff incorporate the behaviors into the daily routine. For instance, pictures of proper lifting techniques and written reminders can be posted on the wall.

Education on use of proper body mechanics must begin with a basic understanding of the anatomy and physiology of the spine. The spine is a unique set of joints which serve many vital functions. Not only does the spine serve as the foundation for our skeleton, providing us with both stability and mobility, but it also houses our spinal cord, which is an extension of our brain—receiving and providing sensorimotor input/output. The spine has a natural inward curve (or lordosis) in the lumbar and cervical spine and a natural outward (or kyphosis) in the thoracic spine. These curves exist to provide necessary shock absorption, stability, and mobility needed for normal biomechanical function. We must support and maintain these natural curvatures, or what has been termed as a neutral spine. Find your neutral spine by standing erect and gently tightening your abdominal (stomach) muscles. Perform this exercise in various positions: sitting, standing, and lying. With continued practice there will be carry-over to retrain these muscles to naturally support the lumbar spine without conscious effort.

The spine is not supported when you sit in a slumped position. This can be avoided by sitting with low-back support. If you must sit on the floor, sit against a wall or with a large husband-style pillow for your back. Adults should use adult furniture whenever possible. When the situation requires using child-sized chairs, tables, or desks, be sure to sit with as much back support as possible. Stand up as if rising from a squat position, keeping your back straight, pelvis level, and abdomen tight while you use your thigh muscles to raise your body to standing.

Getting to Child Level

Avoid leaning forward or downward to reach or assist children. Instead, assume a squatting position or kneeling position to bring your body closer to the children. Use small kneeling pads (similar to the type used for gardening) to allow more comfortable kneeling when working with children who are sitting at child-sized tables. Do not sit for prolonged periods of time. When you must sit, use comfortable chairs with back support (rockers, gliders, etc.).

Stretching

Break up bouts of sitting with gentle stretching exercises. When you sit, your spine naturally flexes (or rounds). It is important to counterbalance this with some gentle extension exercises. For instance, each time you rise from a seated position, place your hands in the small of your back and gently lean backward. Hold for a few seconds and return to the natural upright position. Repeat several times throughout the day. Another
useful technique involves simply reaching your arms towards the ceiling, in order to stretch and extend the trunk and neck.

**Standing**

Proper posture should be used while standing as well. When standing for a prolonged period of time, shift your weight from side to side and change positions. Adjust the height of changing tables so that the child you are changing is at your waist level. Use step stools for accessing high-to-reach places. Reorganize areas so that the most commonly used items are at an accessible level while standing.

**A Buddy System**

If possible, install large mirrors (shatter-resistant, of course) throughout the child care center. This will help to provide constant reminders to improve your posture and body mechanics. Also, use a buddy system so co-workers remind each other when faulty body mechanics are observed.

**Footwear**

Be sure that you wear comfortable shoes with good shock-absorption. With every step, your foot must absorb one-and-a-half times your body weight. You can purchase over-the-counter shoe inserts to increase the shock-absorption of your shoe. This will help divert unnecessary stress to your weight bearing joints. Avoid wearing high heels or hard-heeled shoes.

**Lifting**

Another way to reduce stress to the spine is by reducing the amount of lifting. This may be a difficult task in the child care environment. When lifting, use proper lifting techniques. Tighten your stomach musculature as you lift. This helps the muscles to provide a corset-like support to the spine. Bend at your knees and hips and bring the item or child close to your body before lifting. Do not twist or turn when lifting. Twisting stresses the muscles, ligaments, and joints of the spine complex.

Avoid repetitive lifting from the floor. Have the children pick up toys and other items from the floor. Incorporate this into daily clean-up time. Always lower the crib side before lifting a child out. Utilize a ramp or small, stable step ladders, or stairs to allow children, with close and continuous supervision, to climb up to change tables or other places to which they would ordinarily be lifted. Use convenient equipment, like a multi-seat stroller, for moving children, reducing the necessity for carrying them long distances.

**Exercise**

Finally, incorporate exercise into daily routines. Maintaining general fitness and flexibility is essential to maintaining musculoskeletal health. Incorporating some of the
gentle stretches mentioned above is a good way of ensuring that you maintain your flexibility. Institute walking programs and other fitness programs for the staff to encourage overall physical fitness. Work together as a team by developing an ergonomics mission statement that supports the mission of the organization. For example: “The mission of the XYZ Ergonomics Program is to support quality child care through the safe and innovative use of ergonomics, maximizing productivity, and protecting the health of the workforce” (Worrell). Use a team approach to develop ideas to improve the ergonomics of your child care center.

References


[http://www.headstartinfo.org/publications/hsbulletin75/hsb75_05.html](http://www.headstartinfo.org/publications/hsbulletin75/hsb75_05.html)