

Rolfing for Work-Related Repetitive Motion Injuries

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Introduction

American industry is increasingly aware of the problem of repetitive motion injuries. "Carpal tunnel" has become a catchword for any pain in the upper extremities believed to be brought on by work-related activities. However, repetitive motion injuries come in many forms. Symptoms of repetitive motion injury appear well before carpal tunnel syndrome is present, and very often intervention at an early stage prevents development of crippling, costly injuries. One particularly effective intervention is Rolfing.

Rolfing Structural Integration is a deep connective tissue massage technique that reorganizes coordinated muscle function. It helps to change harmful patterns of body use that contribute to physical discomfort. As a Rolfer with 16 years' experience, I have seen Rolfing help recovery from sports injuries, car accidents, surgery, and the stresses of daily activity.

Since 1992 I have been a consultant at Starkey Laboratories, applying Rolfing Structural Integration to work with people who show early symptoms of repetitive motion conditions.

Rolfing in an industrial setting

Starkey Laboratories, Inc., is a world leader in custom hearing aid manufacturing. Hearing aid manufacture requires highly technical assembly skills, and employees frequently work under time-sensitive conditions. In 1992, the company began aggressively addressing the problem of repetitive motion injuries and consequent high workers' compensation costs. In the preceding year seven employees - out of more than 800 - had required carpal tunnel surgery, and work-camp costs were above \$350,000. As part of a program of increased awareness and early intervention, I was brought in to work with those who complained of symptoms of RMI (such as pain, tingling or numbness in the hands, or chronic muscle tightness in the neck and shoulders) and who voluntarily requested the Rolfing intervention.

The results of nearly four years of this program can be seen in the chart in Figure 1. Workers' compensation costs declined sharply in the first year of the program, and have levelled out from the years 1993-95. The average cost per repetitive motion injury claim was over \$16,000 in 1991, and less than

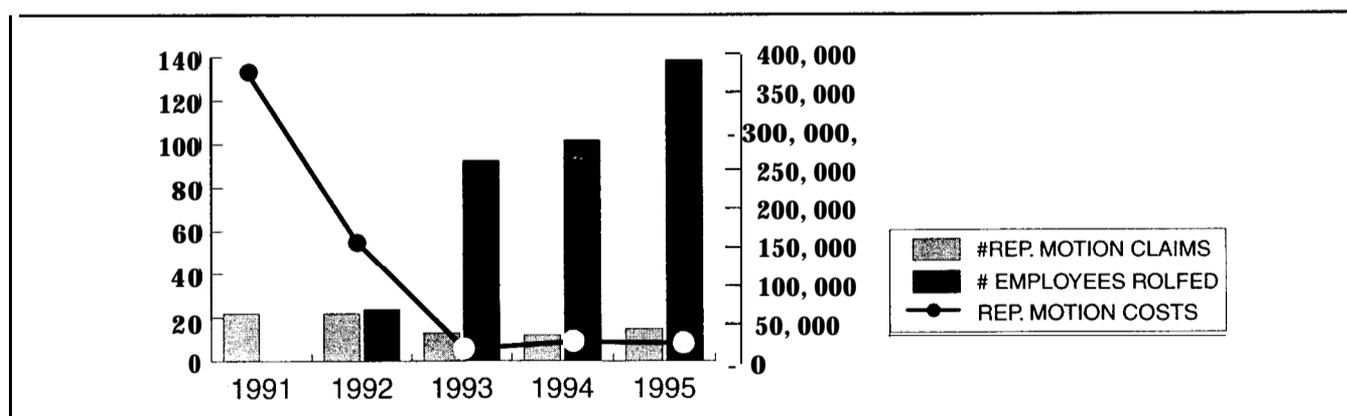


Figure 1

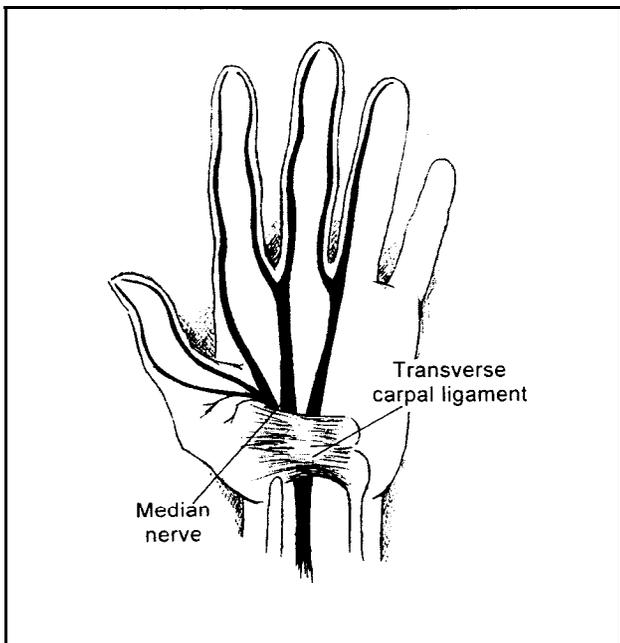


Figure 2

\$1600 in the last three years. From the fall of 1991 to the spring of 1992, eight carpal tunnel surgeries were required. Since 1992, only one Starkey employee has had carpal tunnel surgery. This change can be attributed to an overall increased awareness of potential repetitive motion problems and early reporting of symptoms, as well as the Rolwing intervention. The slight increase in the number of repetitive motion injury claims between 1993 and 1995 is also attributed to increased awareness, i.e., an increased incidence of reported injuries. Even though there has been a slight increase in number of claims, there has been a drastic reduction in severity of injuries.

Besides the obvious improvement in costs for workers' compensation payments, there has been an additional benefit to the company in insurance premium costs. In Minnesota, insurance premiums are set to reflect an average amount of claims costs, and a company's actual rate of pay is modified to reflect their previous claims record. When the program of on-site Rolwing began, Starkey's modification factor for this rate was about 91%; that is, their premiums were 91% of the national average. The national average rate of reduction - the modification factor - is about 95%. Starkey's modification factor is now about 75% of the national average. Savings are reflected not only in outlay for workers' compensation, but also in insurance premium costs.

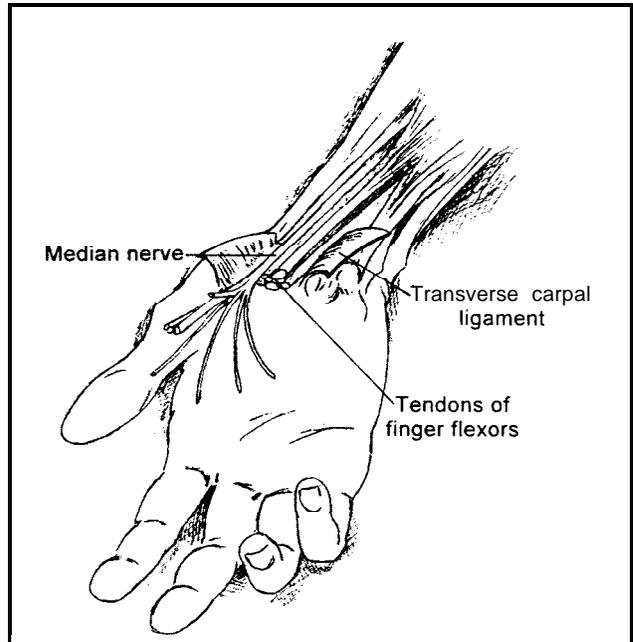


Figure 2

What causes repetitive motion injuries?

Repetitive motion injuries generally involve damage to nerves, and sometimes tendons, caused by irritation, compression and restricted blood flow. As the term implies, no single event is the cause of these injuries. They are an accumulation of minor, often unnoticed stresses. Such stresses might be sitting in a posture that does not support your back, holding your hands or arms in a sustained position, or movements that are repeated without variation.

Carpal tunnel syndrome is probably the most familiar example of repetitive motion injury. In this condition, compression of the nerve at the wrist is caused by swelling in the surrounding tendons. (See Figure 2 for an illustration of the site of nerve compression.) Irritation of the tendons may be caused by repeated hand movements. However, before tendons become irritated the health of the nerve may be compromised by restricted blood flow in the wrist area, which can be caused by the hands being held in an extended position. Carpal tunnel syndrome became widely known when computers came into common use, and many people held their hands in an inappropriate position to type.

Because restricted blood flow to nerves contributes to repetitive motion injuries, symptoms of such injuries - such as numbness, a burning sensation, tingling, or decreased strength or dexterity may occur

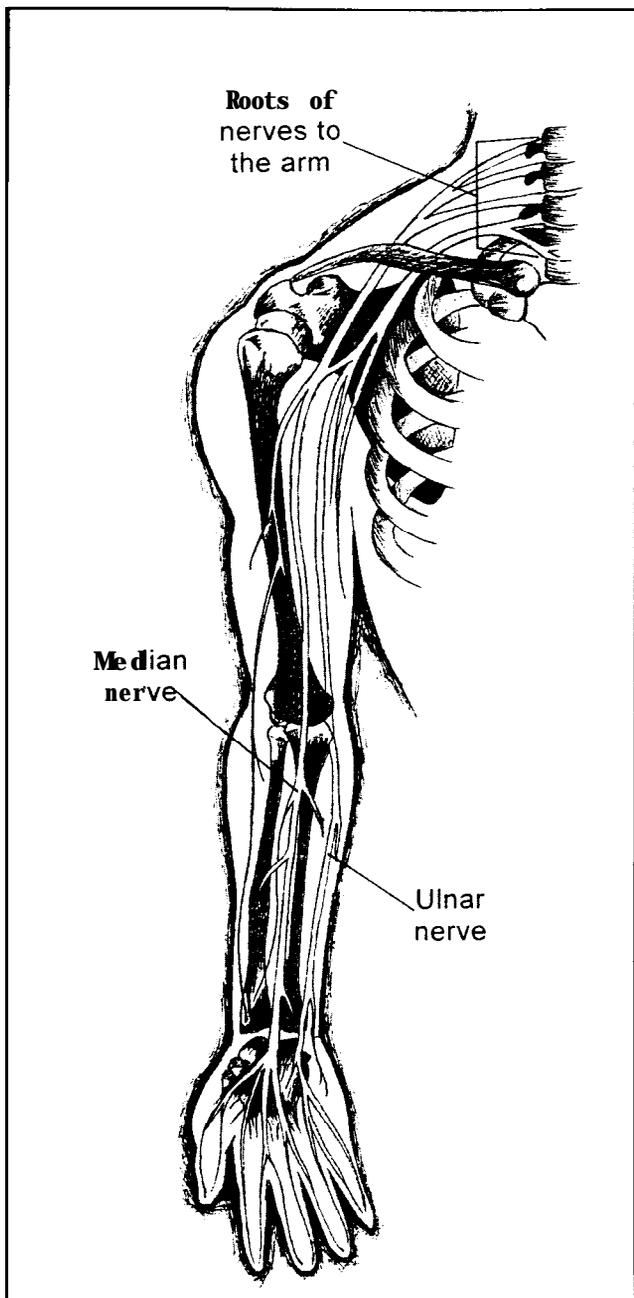


Figure 3

even when there is no direct pressure on the nerve or swelling of the tendons. Figure 3 shows the path of the nerves from the neck through the arm and ultimately to the hand. Pressure on the nerve, or restriction of blood flow, at any point along the nerves' pathway, may produce the symptoms of RMI. Even chronically tight muscles can result in nerve pressure and compromised circulation.

An example taken from my work at Starkey Laboratories illustrates the number of factors that may play into RMI. As previously stated, Starkey manufactures custom hearing aids. The extremely

small size of some of these aids is shown in Figure 4. Since the hearing aid is an electronic instrument, its components must be connected by wires. The job of a wirer provides many possibilities for the kind of repetitive stresses mentioned above.

Figure 5 shows a wirer at work. The extension of the wrist that can compromise circulation to the hand and the nerves of the hand is evident. There are other stresses as well: the tight grip that must be maintained to hold onto very small electronic components and wires, the repetitive squeezing motion of clipping wires, the pressure of the hands resting on the desk surface or microscope, the flexing of the neck to look through the microscope, and the pressure of neck and shoulder muscles in holding the head steady. Since pressure anywhere along the nerve pathway may reduce blood circulation and impair nerve health, the neck position and the posture of a worker may be as significant to repetitive motion injuries as the actual work activity.

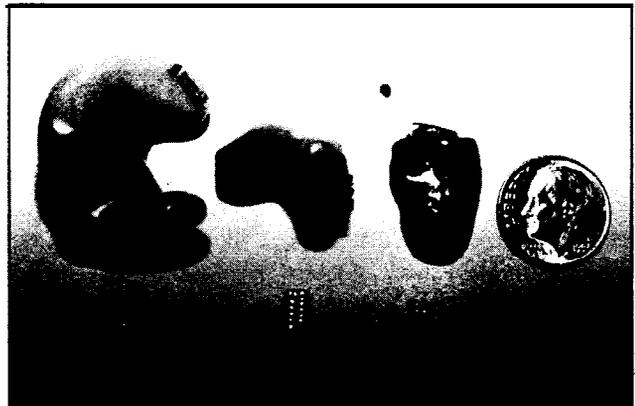


Figure 4



Figure 5

What can be done to help prevent RMI?

Simple solutions to the risk of RMI are often the most effective. In many of today's work situations, *lack* of movement is as much a risk as repetitive movement, as it contributes both to pressure in vulnerable areas and decreased circulation. Employees should be encouraged to take short breaks to move around throughout the day when their jobs require that they remain in one position. Simple exercises, involving gentle stretching, arm rotation, and the like, are helpful in restoring circulation. Proper support in sitting, so that the head is balanced over the neck and the neck is supported by the spine, is also important.

What can Rolfing Structural Integration contribute to managing RMI?

Rolfing as an integral part of a company's health and safety program provides obvious and immediate benefits to the employee as well as the employer. A Certified Rolfer is trained to free patterns of holding and chronic stress in the body's connective tissues, and to re-educate the coordination of muscle groups so that they function more efficiently. A Rolfer can, as I have done with Starkey

Laboratories, work with the conditions of repetitive stress in the body as they develop, so that they do not reach the critical phase of compromising the worker's ability to work. They may also, in a series of sessions with a client, work to improve the entire self-organization of the body for better posture, flexibility, and support, and educate employees about proper movement both on and off the job. Rolfers evaluate the mechanics of the employee's posture and movements at work, and can be helpful in ergonomic evaluations. In the larger picture, the presence of the Rolfer and the service they provide contribute to the overall sense of well-being of employees; they simply feel they are being cared for. Everyone benefits.

For further information on Rolfing, please contact:

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