# The FORERUNNER NEWSLETTER

Nautilus

July/August 1992


## GE Reaps Benefits, Profits of Corporate Fitness Facility

Following an 18-month study of its corporate fitness facility, GE Aircraft Engines found that users of the fitness center substantially lowered their annual medical bills, recuperated more quickly from injury and returned to their jobs earlier than those who did not use the facility.

The study, conducted at GE Aircraft Engines in Evendale, Ohio, evaluated the medical claims of 822 members of the facility over an 18-month period, six months prior to joining the center and 12 months after joining. About 2,700 people who did not join the center were used as a comparison.

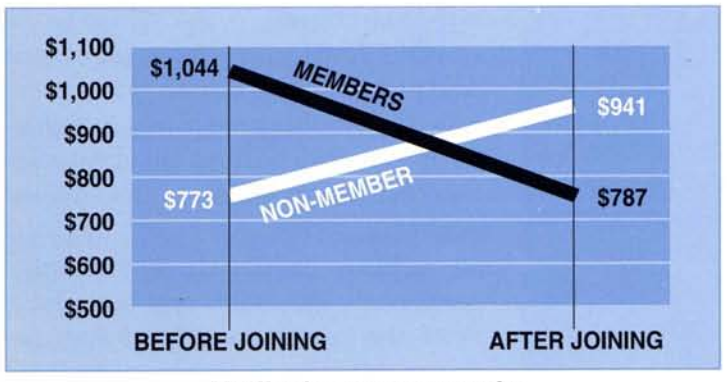
One of the more surprising findings was that prior to joining the center, members had higher medical care costs than non-users, presumably due to a sensitivity to health issues or an existing medical condition. Prior to joining, members had a per capita cost of $1,044 versus $773 for non-members, a 35-percent difference. After one year, the per capita costs for members declined 38 percent, to $757, while costs for non-members increased 22 percent, to $941.

According to researchers, the decline appears to be linked primarily to differences in in-patient cost caused by a lower length of stay for fitness center members compared to non-members. Members stayed in the hospital an average of 3.8 days compared to 5.9 days for non-members. Compared to the control group, the active group also saved $184 per person at the end of the study period. For the total employee membership of the GE Fitness Center of 5,500, the savings would be $1,012,000, which is less than the annual operating cost of the center during the study period.

Additional savings for GE Aircraft Engines are suggested by the fact that fitness center members may spend 762 more days at work which would otherwise be spent in the hospital. First, the cost of extra labor that is carried to counterbalance absences should be less over time. All organizations carry extra labor to cover for absent workers. For GE Aircraft Engines, this cost in salaries and benefits could decrease slightly as a result of fitness center members returning to work sooner after illness.

Secondly, GE Aircraft Engines may be avoiding some of the productivity costs of turning jobs over to replacement workers and subsequently turning jobs back to their regular owners. Absences always cause declines in productivity, both for people who must assume less familiar duties, and for people who must deal with backlogs once they return.

In summary, the report concludes, conservative estimates of savings range from $540,000 to $1 million in lower medical costs plus the productivity benefits of avoiding 762 days of hospital stays per year.




Medical costs per capita

## Maintaining Exercise Adherence in the Elderly

*By: Scott Lakey*

Greater attention is now being focused on exercise for the older adult than at any time in the past. This is due in part to the rapid growth in this segment of the population and in part to the pressure of rising health

## What's Inside

an aerobic fitness norm score from the 30th percentile to the 60th percentile over a three-month period. Periodic fitness testing is necessary to provide feedback and to convey the interest of the staff in the participant's personal progress.

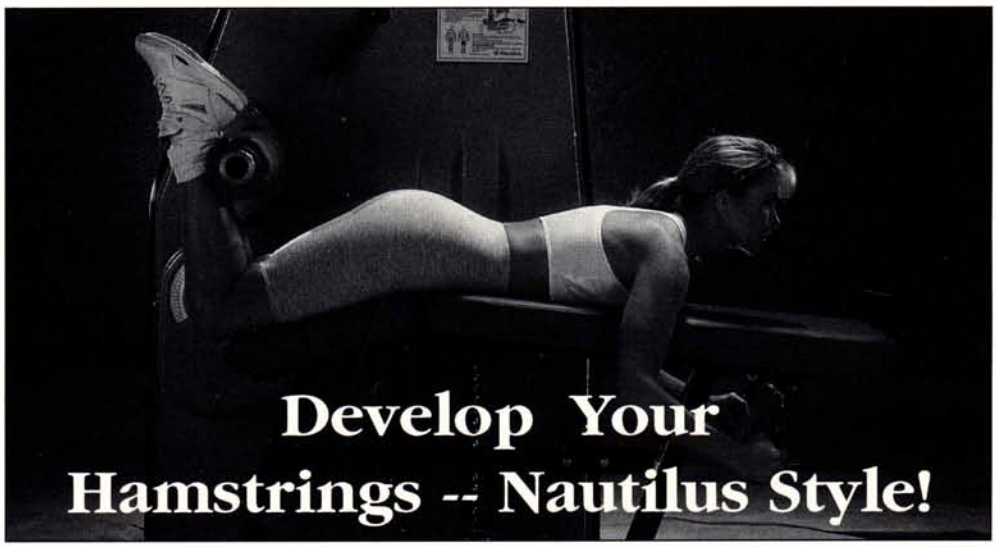
Education should be a structured part of the program, revealing not only the "hows" but also the "whys" of exercise.

Understanding the relationship between exercise and health benefits is very meaningful to an older exerciser. For instance, improvement of flexibility in the hamstrings and quadriceps can, in combination with a reduced waist measurement and stronger abdominal and lower back muscles, lessen chronic low back pain.

Relating the exercises to daily activities serves to make the exercise more immediately useful. For example, the strengthening that occurs in wrist supination and pronation exercises can be associated with an increased ability to open the lids on jars. The tricep dip exercise strengthens the same muscles used to push oneself out of a chair.

There is probably no segment of the population that stands to benefit more from regular exercise than older adults. However, without compliance, the anticipated benefits will obviously not materialize. While these suggestions may seem obvious and simple, they are often not observed. If we are truly interested in the many positive benefits occurring when older adults exercise regularly, we must be devoted to both programming and motivation.

*Scott Lakey received his M.S. degree in Exercise Physiology from the University of Wisconsin, La Crosse, and is certified by the American College of Sports Medicine. The Monarch Foundation is a medical research foundation in Cincinnati, Ohio, that investigates the effects of exercise on populations of all ages.*



# Develop Your Hamstrings -- Nautilus Style!

*By:*
***Matt Brzycki***

Located on the backside of your upper leg, your hamstrings are actually composed of three separate and distinct muscles, the semimembranosus, the semitendinosus and the biceps femoris. The primary function of your "hams" is to flex your lower leg around your knee joint. The best movement for exercising these muscles directly is the leg curl.

Nautilus offers two different machines to develop your hamstrings, the Prone Leg Curl and the Seated Leg Curl. Both leg curls offer many of the same features including low friction movement, an optional range limiter and a 250-pound weight stack.

The Prone Leg Curl is the "veteran" of the two machines and is performed in the traditional manner by lying prone and pulling your heels toward your hips. The long bench pad and the shorter knee pad meet at a slight angle which places your hips in a pre-flexed position. This design reduces the strain in your lumbar area, thereby making the exercise more comfortable. The Prone Leg Curl also features a quick set ankle pad positioning mechanism.

The Seated Leg Curl is the "rookie" of the two units. As the name suggests, this movement is performed in the seated position. This virtually eliminates all tension in your lower back region. There are some people, for example, pregnant women or overweight individuals, who are physically unable to perform leg curls in the prone position. The Seated Leg Curl enables those individuals to effectively train their hamstrings in a safe, comfortable manner.

Regardless of which machine you prefer, several general guidelines apply. The weight should be raised and lowered in a deliberate, controlled manner. It should take 1 to 2 seconds to raise the weight to the mid-range position and from 3 to 4 seconds to lower the weight back to the starting/stretched position. In effect, each repetition should be about 4 to 6 seconds in length. You should try to bring your heels as close to your hips as possible during each repetition. (The angle between your upper and lower legs should be 90 degrees or less in the mid-range position.) Finally, you should reach concentric muscular failure within 10 to 15 repetitions. Following these guidelines will ensure that you've exercised your hamstrings in a safe, efficient and productive manner.

*Matt Brzycki is the strength coach at Princeton University.*