Severity of kyphosis and decline in lung function: The Framingham study

July 28 2016

Researchers from the Harvard affiliated Hebrew SeniorLife Institute for Aging Research (IFAR), have published a recent article in *Journals of Gerontology: Medical Sciences*, suggesting that preventing or slowing progression of hyperkyphosis may reduce pulmonary decline in older adults.

Hyperkyphosis is a poorly understood condition that causes an extreme forward curvature of the spine and affects as many as 20 to 40 percent of older individuals. "Clinically, we know hyperkyphosis restricts expansion of the lungs and causes difficulty in breathing, as well as other serious health problems," said Amanda Lorbergs, a post-doctoral scientist at IFAR and lead author of the study. Lisa Samelson, senior investigator for the study and associate scientist at IFAR and assistant professor at Harvard Medical School, added, "Our findings are highly important, because they are based on pulmonary function data collected in a prospective cohort followed over a long period, allowing us, for the first time, to quantify the impact of hyperkyphosis on declines in lung function."

Samelson's team used data from the Framingham Heart Study that has collected information from generations of Framingham residents and their offspring since the 1940s. These data include measurements of kyphosis from spine radiographs taken at the beginning of the study and pulmonary function (spirometry) tests performed on four occasions over the next 16 years. The researchers found that women who had the most severe kyphosis had the greatest declines in lung function. Moreover,

this loss of lung function that may be due to hyperkyphosis is comparable with the amount associated with smoking up to 15 cigarettes per day. Pulmonary impairment is a leading cause of morbidity and mortality in older adults. By quantifying the impact hyperkyphosis can have on pulmonary impairment, this study highlights the importance of developing approaches to prevent or reduce hyperkyphosis.

More information: Amanda L. Lorbergs et al, Severity of Kyphosis and Decline in Lung Function: The Framingham Study, *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* (2016). DOI: 10.1093/gerona/glw124

Provided by Hebrew SeniorLife Institute for Aging Research