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TWO NEW KLRI PEER-REVIEWED PUBLICATIONS:

**Hormone Therapy May Reduce Atherosclerosis in Women Close to Menopause,
Growth Hormone May Increase Risk of Diabetes, Improve Lipid Profile in Men**

Phoenix, Arizona. (August 3, 2009) – The Phoenix-based Kronos Longevity Research Institute (KLRI) has published two new publications on hormone therapies and their effects on reducing the risks of cardiovascular disease in older adults.

Cardiovascular disease caused by atherosclerosis, or the build-up of plaques along the arterial wall, is the greatest single killer of American women—40% of total deaths—and the rate of mortality is nearly as high for men. Atherosclerosis can lead to the blockage of arteries that commonly support the heart, brain, kidneys and extremities, and cause blood clots, heart attacks and stroke.

Published in the American Society for Reproductive Medicine's *Menopausal Medicine*, KLRI publications findings were twofold that there are certain benefits to menopausal hormone therapy (HT) in newly postmenopausal women, but that there are risks and a potential loss of benefit to estrogen therapy in women who have been postmenopausal for several years and may have pre-existing atherosclerosis.

"This research continues to underscore the theory that estrogen may be cardio-protective if administered close to menopause," said Dr. S. Mitchell Harman, MD, PhD, KLRI's Director and President.

The Postmenopausal Estrogen/Progestin Interventions (PEPI) trial compared conjugated equine estrogen (CEE) with three different CEE-progestin combinations and placebo in 875 healthy, postmenopausal women, aged 45 to 64. KLRI has found that other trial results used by the FDA, American Heart Association and other groups began menopausal HT use much later than in usual clinical practice—beginning trials on women of a median age of 63, as opposed to 51 (the average age of menopause in the United States). Younger women saw benefits from menopausal HT; older women saw the opposite.

KLRI research project, The Kronos Early Estrogen Prevention Study (KEEPS), will more fully address the issue of the benefits of menopausal HT in women close to the menopausal transition. Results from this study are not expected for several more years.

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Another KLRI study, appearing in the ***Journal of Clinical Endocrinology and Metabolism*** and led by Marc Blackman of the Washington DC VA Medical Center, tests the effects of growth hormone (GH) therapy, both combined with sex steroids and alone, in healthy, ambulatory men and women over 65 years of age for a period of six months. The study found that GH caused insulin resistance (the body's inability to respond to and use the insulin it produces) to increase, yet it had a beneficial effect on lipids (molecules in the blood that include cholesterol and triglycerides).

"It's extremely unusual to analyze the effect of both growth hormone and sex steroids," said Harman.

This research is particularly interesting because the effects of GH therapy have not been studied extensively. The body naturally secretes growth hormones to fuel growth through childhood and maintain tissues and organs. Their use as an anti-aging therapy stems from the natural decrease of growth hormones secreted by the body as we reach middle age—replacing them with artificial GH, in theory, would slow the aging process. However, there is little evidence to suggest that it is effective.

Very few studies have tested the combined effects of GH *and* sex-steroids on glucose tolerance, elevated cholesterol and insulin sensitivity—changes in older adults that occur as a result of aging and that contribute to increased risk for cardiovascular disease. GH has been found to decrease total body and regional fat mass in older men, while sex-steroids have been reported to have positive effects on lipid (fat) concentrations in the body.

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About Kronos Longevity Research Institute

Kronos Longevity Research Institute (KLRI) is a not-for-profit, 501(c)(3) organization that conducts state-of-the-art clinical translational research on the prevention of age-related diseases and the extension of healthier human life. KLRI tests new strategies to detect and prevent chronic diseases associated with aging and investigates the effects of innovative interventions to slow the aging process and improve health outcomes for older persons. In addition, KLRI helps the medical and lay communities understand important aging issues. KLRI research findings support a healthier quality of life and a robust lifestyle in our senior years. For more information, visit www.kronosinstitute.org.