Genetic and Metabolic Research of Age-Dependent Chronic Degenerative Disease

Positions
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Research
Our research is focused on age-related chronic degenerative disease, such as osteoporosis, osteoarthritis, including disc degeneration disease and muscle mass loss - sarcopenia. The prevalence of sarcopenia is as high as 30% for those above 60 years old. In the elderly, the loss of muscle mass is correlated with profound physical impairment and disability with severe clinical consequences, including mobility loss, osteoporosis, osteoarthritis, increased fracture risk, dyslipidemia, insulin resistance, and increased mortality. However, it is also often developed at a much younger age. Despite the above clinical significance and despite the fact that a strong familial component in muscular mass variation is well established, there is almost a total lack of molecular genetic studies of this trait. This is in a great contradiction to studies concerning the other two body composition components: bone and fat mass, for each of which many dozens of studies have been published during the past two decades. It is therefore timely and imperative to invest extensive scientific research in the genetic and metabolic mechanisms of early and rapid muscle mass loss. The other important subject of our current research is low back pain, representing most common musculoskeletal disorder in general human population. However, it is still unclear which individuals develop it. We examine the contribution of genetic factors, lumbar disc degeneration and other potential risk factors in a general human population.

Publications


Yulia Vistoropsky, Sergey Ermakov, Mohammed Toliat, Svetlana Trofimov, Janine Altmüller, Ida Malkin, Peter Nürnberg, Gregory Livshits. Genetic determinants of circulating levels of Tumor Necrosis Factor Receptor II and their association with TNFRII gene variants. Cytokine 2010; 51: 28-34.


Anna Leonov, Svetlana Trofimov, Sergey Ermakov, Gregory Livshits. Quantitative genetic study of amphiregulin and fractalkine circulating levels - potential markers of arthropathies. Osteoarthr & Cartil, 2011; 19:737-742

Gregory Livshits, Maria Popham, Ida Malkin, Philip N. Sambrook, Alex J MacGregor, Timothy Spector, Frances MK Williams. Degenerative disc disease and genetic predisposition are the main risk factors for long back pain in women: The UK Twin Spine Study (TUTSS). Ann Rheumat Dis 2011; 70:1740-1745


Liran Franco, Frances MK Williams, Svetlana Trofimov, Tim D Spector, Gregory Livshits. Elevated plasma fractalkine levels are associated with higher levels of IL-6, Apo-B, LDL-C and insulin, but not with body composition. Metabolism, 2013; 62:1081-87.


Ida Malkin, Frances MK Williams, Genevieve LaChance, Timothy Spector, Alex J MacGregor,


**Reviews**


**Grants**