In Japan, the number of patients in need of care will reach 7 million and it will cost 10 trillion JPY; thus, a care prevention program is required to increase the QOL of patients and decrease the cost of the care. It has already been shown that the main causes of care are disability, apoplexy, and dementia; however, prevention programs for these diseases have not been established yet.

Juntendo University established the Sportology Center in 2007 and promoted research for prevention programs by integrating medicine and sports. This project was supported by a MEXT*-Supported Program for High-Tech Research Centers 2007-2012 (*Ministry of Education, Culture, Sports, Science and Technology). During this research project, we found that muscle dysfunction is closely associated with metabolic syndrome, atherosclerosis, pre–osteoporosis, and white matter alteration in the brain in middle-aged men. From these results, we hypothesized that muscle dysfunction is a comprehensive therapeutic target for care prevention (Figure-1). To test this hypothesis, we started “Research project to develop care prevention program: Focusing on muscle function” as a MEXT-Supported Program for the Strategic Research Foundation at Private Universities, 2014-2018. The goal of this project is to establish a care prevention program by preserving/enhancing muscle functions. We hope our research project will increase healthy life expectancy.

Research project to develop care prevention program: Focusing on muscle function
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1) Metabolic syndrome prevention research group
Group head: Yoshifumi Tamura (Associate Professor), Department of Metabolism & Endocrinology, Juntendo University Graduate School of Medicine
2) Tamura Y, et al: Short-term effects of dietary fat on intramyocellular lipid in sprinters and endurance run-

2) Locomotive syndrome prevention research group
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3) Brain disease prevention research group
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