Motor functions begin to decline sharply from age 49.1.

人の運動器機能は49.1歳から急激に低下し始める！

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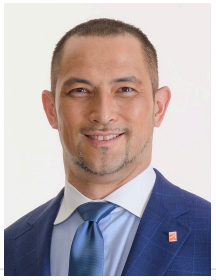

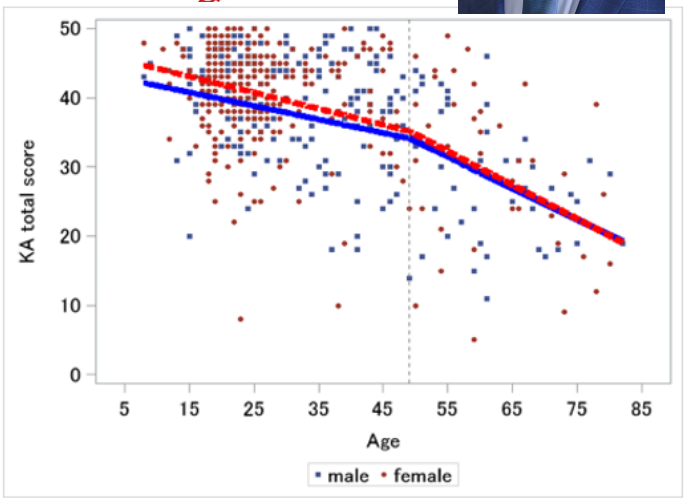

Exploring age-related changes in motor function: insights from the peak decline found in Koji Awareness screening test

Koji Murofushi[1,2✉], Hiroki Katagiri[3], Sho Mitomo[2,3], Kenji Hirohata[4], Hidetaka Furuya[5], Ryoichi Hanazawa[6], Akihiro Hirakawa[6], Kazuyoshi Yagishita[3] & Koji Kaneoka[7]

The KOJI AWARENESS (KA) screening test assesses motor function in humans. We aimed to analyze the correlation between age and KA screening scores and to identify the specific age at which a significant decline occurs. A total of 793 healthy participants (234 females) were interviewed for basic information on age and sex and completed the KA screening test. In addition to calculating the total score from the KA test, the scores were calculated for the neck-scapula-upper extremity-complex (NSU), trunk, and lower extremity (LE) segments. Spearman's rank correlation coefficient was used to assess the validity of the test. Additionally, Bayesian linear regression was employed to estimate the change point in KA scores, facilitating the identification of a critical age associated with a notable decline in motor function. KA screening total and separate body segment scores were negatively correlated with age in both gender (for female and male, KA total score, $\rho = -0.443$, $\rho = -0.344$; NSU segment, $\rho = -0.431$, $\rho = -0.427$; trunk segment, $\rho = -0.210$, $\rho = -0.473$; LE segment: $\rho = -0.43$, $\rho = -0.507$). Furthermore, a change-point analysis using linear regression analysis showed that KA screening total scores declined sharply at the age of 49.1(95% credible interval: 37.503, 68.366). The result show that total KA scores decrease − 0.196 (95% credible interval: − 0.335, − 0.049) for every 1 year of age increase, and for ages over 49.1, total KA scores additionally decrease − 0.255 (95% credible interval: − 0.485, − 0.054) for every 1 year of age increase. In the NSU segment, females showed a more rapid decline than males from the age of 50 years. KA screening test total scores declined sharply at the age of 49.1. These results may be useful in setting treatment goals, exercise, and lifestyle programs for age-related decline in motor function.

Keywords KOJI AWARENESS, Aging, Motor function, Musculoskeletal function, Correlation analysis

Institute of SCIENCE TOKYO　獨協医科大学 Dokkyo Medical University　WASEDA University 早稲田大学　AXIS　TOKYO SPINE CENTER SONODA