A. Sakai, S. Salo. International study & promotion of osteoporosis prevention with Finnish bone exercise monitor in Sendai city, Japan. Gerontechnology 2008; 7(2):203. Ageing is the issue that is not limited to only the most long-living nation: Japan, it should be discussed and solutions given that hold over the national boarders. When an advanced technology is developed, it is recommended to share it by multinational collaboration. With this consequence, Sendai City of Japan and Finland Republic launched a project named Sendai-Finland Wellbeing Center (S-FWBC) Project, where we emphasize the dignity, autonomy and activity of senior citizens[1]. The ultimate purpose of the project is citizens' QOL improvement supported by collaboration of academia, industry and government. This time, we focus on osteoporosis, as it is one of the major reasons to worsen elderly QOL. Concretely, we do an international study of osteoporosis prevention with high-impact exercise scaled with Bone Exercise Monitor (BEM), developed in Finland. **Study in Oulu, Finland** Physical exercise has been found to be effective in the prevention of osteoporosis, however, the optimal amount of exercise was not known. In Oulu City, Finland, T. Jamsa, A. Vainionpaa et al. designed a population-based randomized controlled study to examine the association between physical activity and changes in proximal femur bone mineral density and found it was dependent on the acceleration level of exercise. The quantity and quality of exercise can be monitored with the accelerometer-based physical activity monitor, BEM (Newtest Ltd., Finland), and the method is used for optimizing exercise for prevention of osteoporosis[2,3]. **Study in Sendai, Japan** Following the above study, Oulu Univ., Finland, Tohoku University and Sendai University, Japan started a study to confirm the results for the Japanese population supported by S-FWBC. We designed the study to examine the effect of office-based short-duration high-impact exercise on bone mineral density in healthy premenopausal women. We recruited subjects from a calling center company and 91 women aged 25-50 yrs were met for inclusion criteria, and they were randomized into two groups: (i) 46 for Control group with low-impact exercise and (ii) 45 for Intervention group with high-impact exercise. The exercise was done with instructors or video during the working day. The 12-month exercise term finished at the end of 2007 and (i) 36 and (ii) 39 women are assessed to complete the trial. The analysis will be done by spring 2008. The Japanese women's algorithm will be installed in the BEM which will be imported to Japan soon. **Conclusion: Promotion of osteoporosis prevention** At the symposium, ISG05[1], the first author emphasized the importance of easy-to-use products and services for citizens. The technology that is not used is not the real technology. Through this joint study, we develop an exercise protocol with BEM. The next action we will take is to introduce proper quality and quantity of exercise with BEM to prevent osteoporosis under collaboration of academia, industry and government.

References

1. Taipale V, Kimura M, Tervaskari H, Sakai A, Finne-Soveri H, Ekberg J. Gerontechnology 2005;3:244-246
2. Jamsa T, Vainionpaa A, Korpelainen R, Vihriala E, Leppaluoto J. Clinical Biomechanics 2006;21:1-7
3. Vainionpaa A, Korpelainen R, Vihriala E, Rinta-Paavola A, Leppaluoto J, Jamsa T. Osteoporos Internationale 2006;17:455-463

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