addition, we discussed the characteristics of each item among four cities in Korea, China, Taiwan and Japan.

P-16  A Comprehensive Study of Effect of Urbanization on Health of Children in East Asia Part 3
Questionnaire Findings about Habitat
Koji NAKAJIMA1), Mari KUBO1), Kazumi SHIMAKURA1), Shintaro YOKOYAMA1), Masaru ISHI2), Naoto ICHIMARU3), Taro YAMAUCHI4) and Kazumi NATSUHARA4)
1) Hokkaido University, 2) Fukuoka University of Education, 3) University of Tokyo, 4) Fukuoka Prefectural University
We performed a comprehensive study about urban environment and health of children in East Asia. We investigated various measurement items, for example, local cold tolerance and questionnaire about a lifestyle in four cities of East Asia. We developed two questionnaire sheets for children and their parents. The main questionnaire for children asks 1) sleeping time and quality, 2) daily physical activity, 3) usage of information technology devices, 4) cramming for examination and 5) subjective score for health. That for parents asks 1) health of child, 2) indoor pet animal, 3) passive smoking, 4) heating, cooling and ventilation system, 5) residential construction and 6) family structure. The database was made based on these measured items.
In this report, we describe the results of residential construction, heating, cooling and ventilation system, passive smoking, family structure. In addition, we discussed the characteristics among four cities in Korea, China, Taiwan and Japan.

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P-18  Comparison of Body Fat Percentage Measured by Different Methods
Shin-ichi WATANABE, Takashi MATSUYO, Yusuke OHNO, Ken-ichi MATSUMOTO and Mutsumi SORIMACHI
Department of Robotics and Mechatronics, Faculty of Engineering, Kanagawa Institute of Technology
Body fat percentage (%FAT) of healthy volunteers with age from 20 to 84 was measured by using 8 kinds of measuring instruments. The principles of the measuring instruments used were bioelectrical impedance analysis (BIA), air displacement plethysmography (BOD POD), skinfold thickness, and ultrasonography. The measured values of %FAT were found to depend strongly on the instrument used. As much as 5% difference in %FAT values were noted between “InBody” and “BOD POD”, which have been considered to be most reliable. Two instruments for home use showed considerably different %FAT values which were strongly age-dependent each other. The reason is considered that these apparatus utilize different presumption methods to transform measured body impedance to %FAT.

P-19  Evaluation of Ability for Differential Threshold Associated with Applied Force in a Finger-tip—Comparison with Archery Athletes—
Kentaro KOTANI1), Seiji ITO2), Toshihiro MIURA3) and Ken HORII1)
1) Faculty of Engineering, Kansai University, 2) Graduate School of Engineering, Kansai University, 3) Faculty of Letters, Kansai University
The objective of the study was to investigate the effect of adaptation to cutaneous sensation by measuring a tactile differential threshold associated with applied force presented on a fingertip in an archery athlete, who has trained fine finger manipulation with the requirement of precise tactile perception. A total of 14 subjects consisted of two groups, a control group and an archery athlete group, participated in the study. As a result, the Weber ratio was 0.10 for both groups until the standard stimulus was 5.0 gf and the Weber ratios for each group were increased differently when the standard stimulus became less than 5.0 gf. The average differential threshold for athlete group, however, was higher than that for control group, which implied that the cutaneous sensation obtained at the finger tip for archery athletes was less sensitive than that for control subjects. It was concluded that the adaptation of archery athletes was not observed as the tactile differential threshold in our experiment; however, the hardness of the skin on the fingertip rather showed their adaptation since it was revealed that the hardness of the skin was correlated with the differential threshold.

P-20  Modeling for a Cerebral Cognitive-Task Processing Based on Reaction Time in the Task
Tadashi NIIOKA and Daiki YOSHIDA
The Graduate School of Environmental Earth Science, Hokkaido University
Reaction time in a cognitive task would be a good candidate for an indicator to evaluate the influence of a stimulus on a higher brain function. In this study, reaction time was measured in healthy male graduate students using an instrument developed by us to display a cognitive task and to measure the reaction time. Based on analysis, focusing to priming effects, of the results in the reaction time, a model for the cerebral cognitive-task processing has been proposed. Moreover processing time in each processing stage in the model has been estimated from the reaction time measured. The model for a cerebral cognitive-task processing proposed in this study would be remarkably useful in analyzing the higher brain function.

P-21  Evaluation of the Movement Intensity in a Free Walk for the Elderly
Haiyan JIN1), Yuichi KOGAMI2), Norikazu KOBAYASHI2), Makoto MAKI1), Shinya SAKAI1) and Kaoru INOUE1)
1) Department of Health Science, Hokkaido University, 2) Faculty of Health sciences, Tokyo Metropolitan University
It is extremely important to maintain the necessary ability to
be active in daily living as it regards the mental health and quality of life (QOL) for the elderly. It is thought that evaluation by a physiological index is the most important way to measure the ability for activity in the elderly. This study evaluated the physical activity of elderly women older than 75 years. In the present study, during a free walk and at a time of rest the oxygen intake and heart rate were measured. As a result, 1 METs = 3.06 ml/Kg/min was recorded at the time of rest, and at the time of a free walk an average of 3.84 METs and 76.40% Max HR were recorded for the elderly subjects. Compared with the young, the ability to be active for the elderly has decreased. Even if a free walking is a light exercise for the young, the possibility that it is an exercise of appropriate vigor for the elderly of 75 years or more is demonstrated.

P-22 The Improving Effect of Body-Cooling Innerwear Made from New Material on Exercise Function
Jeong-Mi LEE1, Junya TAKAKURA1, Sachiko MITARAI2, Nanami OZAWA1, and Shigeki WATANUKI2
1) Graduate School of Design, Kyushu University, 2) Institute of Design, Kyushu University, 3) GUNZE Limited

This research aims at verifying the body-cooling effect of innerwear made from new material of pebax which is expected continuous cooling effect. 8 healthy male undergraduates and graduates participated in experiment. Participants wore pebax innerwear and polyester innerwear on different days, and performed target heart rate (THR) exercise of 115 bpm and 130 bpm with a consistent speed of 60 rpm on a bicycle ergometer at 28°C and 65% relative humidity. Each THR exercise was performed for 15 min, taking the recovery periods after exercise for 10 min. Heart rate, body temperature (skin and rectal temperature), sweat rate, weight loss, exercise intensity, and subjective evaluations were obtained. In the THR exercise of 115 bpm, the exercise intensity when wearing pebax innerwear was significantly higher than that when wearing polyester innerwear, although no significant differences were found between pebax innerwear and polyester innerwear for either body temperature or subjective evaluations. These results indicate that pebax innerwear effectively emits the heat and sweat from the body, and improves exercise function.

P-23 Physiological Significance of Different Textile Materials of Underwear Worn during Nocturnal Sleep for Sebaceous Gland Activity
Ritsuko IMAMURA1,2, Hiromi TOKURA3, Toshiyuki Nanba3, and Sachiko MITARAI1
1) Faculty of Education, Wakayama University, 2) The Hong Kong Polytechnic University, 3) Gunze Co. Ltd.

Twenty-eight male volunteers aged 18–23 years old were divided into 3 groups at random. One-third wore 100% cotton underwear, one-third 100% polyester and one-third cotton-synthetic blend every night for 4 weeks in autumn. We collected sebum from their back skin once in the morning every week by a cup method using organic solvents. The chromatograms were developed and then charred, and the lipid classes were quantified by densitometry. The amounts of squalene (SQ), wax esters (WE), and triglycerides (TG) were calculated from the ratio of the peak area. WE and TG concentrations increased gradually for 3 weeks in cotton and blended groups and then decreased the final week. The polyester group had a short term WE (2 weeks) and TG (1 week) increases, but at lesser rates than cotton and blended groups, then decreased. No SQ changes were observed for any group. Of the materials test worn synthetic clothing with hydrophobic properties lessens natural sebaceous gland activity in autumn compared with underwear with hydrophilic properties.

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P-25 Study on Gazing Object Analysis Using Eye Tracking for Usability Testing
Takuo MATSUNOBE
Faculty of Systems Engineering, Wakayama University

Eye movement analysis has been used for understanding cognitive processes. This paper describes the methodology of user test using eye camera without disturbing subject’s behavior. The purpose of this study was to develop and evaluate a method to detect the cognitive state using eye tracking data. For the user test, seven web sites were selected. A difficult task was designed for each web site. The subjects were healthy university students. We record a subject’s gazing point by eye mark recorder and record an operation by video recorder while a user was browsing a web site.

The results of this study are as follows:
1) We analyzed eye movement data with an area of the gaze target (menu area, navigation menu, etc.). By the gaze target area, eye movement data show a cognitive status.
2) In gaze target analysis, eye fixation time, eye fixation frequency, gazing point move speed, gazing point move distance were effective index.

P-26 Study on Psychosocial Stress and Stress Tolerance Capacity among Public School Workers
Kazuhiko YAMAMOTO1, Masahiro IRIE1, Yoko SAKAMOTO2, Susumu OHMORI1, and Mototaka YOSHINARI3
1) Institute of Health Science, Kyushu University, 2) Graduate School of Design, Kyushu University, 3) Kyushu Central Hospital

The aim of this study was to examine psychosocial stress and stress tolerance capacity among apparently healthy adults. Out of one thousand nine hundred forty-one public school workers admitted to a hospital for medical check-ups between November 2004 and March 2005, 1499 workers responded to the questionnaires which assessed the degree of stress response.