elderly have high rates of the domestic accidents and sudden illnesses in the morning. On the other hand, the children have high rates of the sudden illnesses in the midnight and the children's domestic accidents in the evening. 3) As aged, the type of accidents that fall on the same level and the type of injury that break a bone have become more frequent.

2-11 Correlation of Body Movement and Subjective Comfort in Motion Environment

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The whole-body vibration (WBV) passengers are exposed in a railway vehicle is a major determinant of the ride. The ride of passengers can be measured by psychological, physiological, and behavioral methods. To examine the correspondence between these methods should be important for a better understanding of the ride. In this study, we examined the relationship between the human body movement (*i.e.*, a behavioral measure) induced by WBV and the subjective ride (*i.e.*, a psychological measure). WBVs were generated with the Ride Comfort Simulator of RTRI, simulating lateral jolts which are observed when trains cross turnouts. The human body movement was measured with a 3-D movement analysis system. The experiment was conducted in two postural positions: a standing position and a walking position. As a result, it was suggested that the magnitude of the human body movement at the subjectively allowable limit in the standing position agree with the magnitude of the human body movement at the subjectively allowable limit in the walking position.

2-12 Effects of Menstrual Cycle and Physical Training on Heat Loss Responses during Dynamic Exercise at Moderate Intensity in a Temperate Environment

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Ten untrained (U-group) and seven endurance-trained (T-group) women performed exercise at 50% VO_{2max} for 30 min during both the mid-follicular and mid-luteal phases (environment: 25°C and 45%RH). In U-group, female hormones at rest and esophageal temperature (T_{es}) during exercise were significantly higher during mid-luteal than mid-follicular phase. Moreover, sweating rate (SR) and cutaneous blood flow (%LDF) were significantly lower, and T_{es} thresholds were significantly higher and sensitivities of these responses were significantly lower in luteal phase compared with

mid-follicular phase regardless of body site. These effects of the menstrual cycle were not observed in T-group. The SR and %LDF were significantly higher in T-group than in U-group regardless of menstrual phase or body site. The T_{es} thresholds for heat loss responses were significantly lower and sensitivities of these responses were significantly greater in T-group during mid-luteal phase; only the sensitivity of sweating response was significantly greater during mid-follicular phase. In conclusion, heat loss responses in U-group are inhibited during mid-luteal phase of menstrual cycle. Physical training improved heat loss responses in women, which is more marked in mid-luteal phase.

2-13 Relationship between Oxygenation in Inactive Biceps Brachia Muscle and Hyperventilation during Leg Cycling

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The aim of this study was to clarify the relationship between oxygenation in inactive biceps brachia muscle and hyperventilation during leg cycling. Change in oxygenation was determined using a near-infrared spectrometry. Each subject ($n=7$) performed a 6-min two-step incremental exercise. The intensity of exercise in the first step (3 min) was halfway between the ventilatory threshold and respiratory compensation point (170±21 watts), while that in the second step (3 min) was halfway between the respiratory compensation point and peak oxygen uptake (240±28 watts). After the onset of exercise, muscle oxygenation began to decrease and the amount of hyperventilation ($\dot{V}E_{hyper}$) began to increase. The magnitude of decrease in muscle oxygenation and the magnitude of increase in $\dot{V}E_{hyper}$ became larger after the increase in exercise intensity. There was a significant and negative correlation between the magnitude of decrease in oxygenation and the magnitude of increase in $\dot{V}E_{hyper}$. This relationship suggests that oxygen demand of ventilatory work caused by an increase in $\dot{V}E_{hyper}$ compromises oxygen distribution to limb muscle.

2-14 The Light Exercise "YURU" Enhances Parasympathetic and Hedonic Tone

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The present study was designed to investigate the psychophysiological effects of light exercise "YURU". Six male subjects were participated in this study. All subjects were measured EGG (electrogastrogram), ECG (electrocardiogram), RPE (rating of perceived exertion), STAI (state—trait anxiety inventory) and hedonic scores. The subjects were allowed to get accustomed to the apparatus to be used before measurement and the protocol for the testing session. They were tested in following 2 conditions: 1) rest for 20 minutes, walking on the treadmill for 20 minutes, recovery for 20 minutes (control), 2) rest for 20 minutes,

YURU exercise for 20 minutes, recovery for 20 minutes (YURU). The amplitude of the EGG and HF component of HRV were enhanced after YURU exercise. STAI and RPE was decreased and hedonic scores were increased after YURU exercise. These results show that the psychological effects of YURU exercise would be mediated by parasympathetic nerve activity. In addition, the slow walking speed, which is a cause of the displeasure in the control session of this study. These results suggest that our developed new exercise would be useful to physical and mental health in elderly people.