of skin sensitivity to warm and cold were measured at 8 body sites (forehead, chest, back, forearm, hand, thigh, lower leg, and foot) using a stimulator (Intercross-200) in 17 older (66 yrs) and 13 younger men (21 yrs) under a neutral environment of 27.5°C and 50% RH. The threshold of skin sensitivity was defined as the change of heat flux between the skin and the surface of the stimulator required for the subject to feel the stimulator to be warm or cold. There were no age differences in oral temperature, mean skin temperature, and subjective thermal and comfort sensations during the test. The thresholds of skin sensitivity to both warm and cold were decreased significantly in the older men at all sites except the forehead. However, these thresholds did not correlate with PR and VO₂. These results suggest that skin sensitivities to both warm and cold decline with aging but are not affected by PR or VO₂.

1-16 Aging Process of Sweating Mechanisms
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Sixteen older and 13 younger men participated in 40-min passive heating (by placing the lower legs and feet in a 42°C water bath while sitting in ambient conditions of 30°C and 45%rh) and an iontophoresis test using acetylcholine. During the passive heating, the sweat rates (SR) on thigh, chest, and forearm (but not on the forehead) were significantly lower in the older men than in the younger men, regardless of their similar mean body temperatures (Tb). The lower SR in the older men was due to lower sensitivity of sweating (an indicator of peripheral mechanisms) but not to higher Tb threshold for sweating (an indicator of central sudomotor function). In the iontophoresis test, acetylcholine-induced SR and sweat output per gland on the thigh and forearm were lower in the older men, but no group difference was observed in the maximal value or the onset time of sweating induced by sudomotor axon reflex. These results suggest that an age-related change in the sweat gland itself (atrophy and/or lower sensitivity to cholinergic stimulus) may precede a decrement in the activities of the central sudomotor and sympathetic nerves.

1-17 The Improvement Effects of Theanine on Sleep of Women with Job
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The sleep improving effects of L-theanine was already reported by using the physiological sleep parameters estimated continuous determination of wrist actigraph. The results were investigated in the conditions of experimental controlled life schedule in the young healthy males. However, it is not clear the sleep improving effects of L-theanine to the women in their 20's and 30's old occupied in the stressful working and having the irregular life style. Ten healthy female daytime workers (34.3 ± 7.1 years old) were recruited. A random, double-blind, placebo controlled, cross-over-designed study was performed. Soft-drinks of 140 ml contained 300 mg of L-theanine or placebo having same aspect and taste were ingested 1 hour before bedtime during one week. During the experimental period, 2 subjects dropped out. According to the sleep questionnaire, feelings of sleep initiation-maintenance and frequent nightmare were ameliorated during the period of ingesting L-theanine compared to placebo. The results of this study show that L-theanine has an improving effect on sleep maintenance and encourages the alleviating effects on psychological stress.

1-18 Relationship between Psychological Parameter and Physiological Parameter—Fatigue and Refreshment—
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This study aims to clarify the relationship between psychological parameter, fatigue and refreshment, and physiological parameter.

Experiment consisting of mental task and wind stimulus which give subjects fatigue and refreshment respectively were performed by the subjects. During the experiment, electrocardiogram (ECG) and near infrared spectroscopy of frontal lobe blood flow (FLBF) were measured for each subject. Then we calculated parasympathetic index (HF/(LF+HF)), sympathetic index (LF/HF) by FFT of RR interval and the slope of linear regression equation of FLBF (S-FLBF).

The results of self-report questionnaire showed all subjects felt fatigue by the mental task and refreshment by wind stimulus. During the mental task, S-FLBF decreased and LF/HF increased gradually. This indicates fatigue can be evaluated by the decrease of S-FLBF and the increase of LF/HF. And while the subjects were given wind stimulus, the average value of FLBF decreased and HF/(LF+HF) increased compared with the ones during rest. This means refreshment can be evaluated by the decrease of average value of FLBF and the increase of HF/(LF+HF).

1-19 Fatigue in a Stereoscopic-Picture Image with Changing Congestion Corner
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