

- A-11 The Influence of Joint Pattern on the Visibility of Different Floor Levels
Experiment by using Eye-camera (Part. 3)

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The purpose of this study was to investigate the influence of joint pattern on the visibility of different floor levels. Twenty young people looked at the models of different floor levels in having eye-camera on, and judged whether it was visible or not. The model's color is gray, its lightness is 7 and the height of different floor levels is 2.0cm. It was lit up from only the ceiling and the illuminance is 100lx. The joint patterns were vertical, horizontal, cross stripes and plain. As the result of this experiment, we could attribute the visibility of different floor levels to the joint patterns.

- A-12 The Influence of Angles and Spatial Frequency of Stripe Signs on Sway of Center of Gravity
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The purpose of this study is to investigate an influence on vestibular sensation of spatial frequency and angle of stripe signs. Six male students were used as subjects. The subjects were presented with stripe signs in four angle types (0°, 1°, 45° and 90°) × two spatial frequency ones (0.33 and 0.04 cycle/degree), ie eight conditions with standing posture. The screen was set in front of the subjects; the visual angle was 176°. The exposure time was 15 minutes for each condition. Sway of center of gravity, head-motion, and subjective symptoms were measured.

At the angle of 1°, the position of center of gravity was located opposite direction with the other angles in both spatial frequencies. At the angles of 1° and 45°, the relationships between sway of center of gravity and head-motion differed from the other conditions in both spatial frequencies. At the angle of 45°, the head-motion were largest in both spatial frequencies.

- A-13 The Measurement of CNV during Hypobaric Hypoxia

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The Contingent Negative Variation (CNV) is recorded from human scalp states. When repeat S1-S2 stimulations, subjects were respected reaction to S2 stimulation, there is a slowly negative changing between S1-S2 stimulations on the EEG. The CNV, slowly changing potential has been reference to "expectancy" (Walter et al. 1964), also "expectation, anticipation, notice and arousal". Subjects were seven male students. Electrodes of EEG were placed over the scalp Fz, Cz, Pz sites. The two patterns of CNV-paradigm were given for subjects, one was simple reaction paradigm and the other was selection reaction paradigm, respectively target stimulus were indicated 100% and 50%, and the SaO₂ and HR were measured simultaneously. The condition of experiment room altitude were pre-0m, 2000m, 4000m and post-0m and room temperature was 25°C. The exposure time of each altitude was 45 minutes. There were effects of hypobaric hypoxia on the CNV early component at the Cz site.

- A-14 Effects of Enriched Oxygen on Physiological Function During Static Muscle Contraction

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The task was performed with right arm. Arm flexion was kept in sitting position, with the upper arm horizontal supported on a solid plate, and the forearm held at 90°. Subjects performed static muscle contraction until exhaustion under eight different conditions consisting of a combination of two levels of contraction (20%, 40%MVC) and four concentration levels of inspired oxygen (air, 30%, 60%, 100%). Systolic and diastolic blood pressures, heart rate, electromyography, and endurance time were measured during static work. The significant effects of enriched oxygen was not observed in all measurements.

- A-15 Effect of Hyperoxia on Human Being after Exercise (II)

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This study aims to estimate how recovery process after submaximal exercise differ with oxygen concentration. Subjects were divided into two anaerobic threshold (AT) group, and recovery process was estimated by two AT-group. Subjects were nine male students (high-AT-group (four); low-AT-group (five)). An electrically braked bicycle ergometer was used for work. Work load was determined 70%VO₂max. After subject rested for five minutes, he repeated three sets; one set is five minutes work and six minutes recovery. V_E, VCO₂ and VO₂ were measured during experiments, HR and blood lactate concentration were measured during recovery periods. Each oxygen concentration (Air, 30, 40, 60, 80 and 100%) was inhaled at recovery periods. The condition of room temperature was 25°C. V_E and VCO₂ tended to be higher at hyperoxia than at normoxia. In high AT group value of blood lactate was significantly lower at hyperoxia than air. These results will indicate that since there was higher VO₂max at high-AT-group than at low-AT-group, the rate of oxygen intake was increased.

- A-16

The effect of CO₂ inhalation on psychological sensation.

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To investigate the psychological sensation against the CO₂, differential limen (DL) and points of subjective equality (PSE) by using method of limits were measured. The five kinds of CO₂ percent (2, 3, 4, 5 and 6% CO₂ in O₂) was prepared as standard stimulus. PSE against the standard stimulus of 3, 4 and 5% CO₂ consisted with CO₂ level of standard stimuli individually. However, PSE against 2% CO₂ was slightly overestimated and that against 6% was underestimated. DL increased with an increase in CO₂ concentrations of standard stimulus.