

#### A-24 EEG Changes during 400-m helium-oxygen saturation diving

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Thirteen channels of EEG were recorded during simulated 400-m helium-oxygen diving. The chamber was compressed up to 400 m by helium with pressure-holding stages at 150, 250, and 330 m. The compression rates during 10-150 m, 150-250 m, 250-330 m, and 330-400 m were 1.0 m/min, 0.5 m/min, 0.25 m/min, and 0.167 m/min, respectively. During the compression period, augmentation in theta and delta activity was found at the fronto-central regions in one of the two divers who was continuously monitored EEG; another diver showed no augmentation in slow wave activity. Theta activity was slightly noted in only two of the six divers after 36 h at this depth, although alpha activity did not recover to the precompression level in any of the divers. On the basis of these results, validity of the compression method was discussed.

#### A-25 Effect of Thermal Condition on EEG -A Consideration of Fluctuation of Alpha Wave Frequency-

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The purpose of this study was to quantitate of thermal comfort by fluctuation of alpha wave frequency. Yoshida et al. had reported that fluctuation of alpha wave frequency was different among the various fragrances. We use their method to our examination. Seven subjects are exposed to three kinds of thermal condition including neutral thermal sensation. The average of regression coefficient in comfortable case is closer to -1 than uncomfortable case. Its significance level is over 40%. EEG depends on consciousness level, so we tried to consider the consciousness level by alpha wave. We divided alpha wave to following four bands; 8-9.25, 9.25-10.5, 10.5-11.75, 11.75-13(Hz). Those the rate of 8-9.25Hz band is high are equivalent to early sleep pattern and those of the rate of 11.75-13Hz band is high are equivalent to arousal pattern. So we remove these data including both levels, and its significance level became about 20%.

If we consider the consciousness level, thermal comfort would be estimated by the fluctuation characteristics of alpha wave frequency.

#### B-01 An overall study of the skin -the parameters and their characteristics-

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In the current study, involving 21 healthy women (20-24yr), physiological study of skin and the skinfold thickness of the whole body were determined under the constant conditions that the room temperature and the humidity, and then consideration were given to their characteristics. After the subjects entered a laboratory and the marks were put on 15 sites of the entire body (buccal region; chest; lower thoracic part; abdominal part; dorsum manus; anter part of thigh; anterior part of leg; posterior region of neck; back; upper arm; posterior part of flank; gluteal region; inferior gluteal region; posterior part of thigh) the samplings of stratum cells viscoelasticity of the skin, the skin color, hydration state of stratum corneum, the skin surface temperature, the replica sampling, the water holding capacity of stratum corneum, pH of the skin surface, the extraction of the skin surface lipid and the skinfold thickness with the use of B-mode ultrasonography.

#### B-02

An overall study of the skin  
-the age-related differences in physiological study of skin and the skinfold thickness and the mutual relation-

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In this paper, the age-related differences in the physiological study of skin and the skinfold thickness and the mutual relation were studied by comparison in 20 healthy middle-aged women (40-53yr) and 21 healthy young adult women (20-24yr).

(1) The flexibility of the skin showed the age differences on the buccal region, the dorsum manus the femoral region and the back.

(2) Among the conditions of skin surface, the intervals of furrows were wider on all the portions for the middle-aged group.

(3) A significant correlation was found between the hue and the skinfold thickness, which was more striking for the middle-aged group.

(4) For the middle-aged group, a higher degree of negative correlation existed between the skin surface temperature and the skinfold thickness, especially on the trunk where the subcutaneous fat was heavily distributed.

#### B-03

A study on the skin  
Point difference, age difference, and individual difference about skin color of adult female.

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The purpose of this study is to examine about 11 points of the skin color in the body from a hue, value, and chroma points of view, and to examine about the part difference, age difference, and individual difference.

The items of measurement are cheek, chest, abdomen, back of hand, thigh, calf, back, hip. This study was used the color utensil (MINOLTA CR-100), showed the measure value Yxy, changed the munsell value to them.

The following results were obtained.

- 1) On the hue, the exposed part was tinged with red, the covered part was tinged with yellow, about young ages and middle ages.
- 2) On the value, the exposed part was low, the covered part was high.
- 3) On the chroma, the exposed part was high, the covered part was low, and the front part was low, the back part was high.
- 4) On the hue and value, middle ages were higher than young ages.

#### B-04

A study on the skin  
Characteristics of corneocyte

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The purpose of this study is to investigate morphology of corneocytes and appearance rate of nucleolar. Corneocyte was sampled with corneocytes stripping tape surface of body and stained with a mixture of gentian violet and brilliant green and water (98.5:1.0:0.5). The samples were dried, afterward we examined samples under the optical microscope (10×20).

The following results were obtained;

- (1) About nucleolar inclusion of each region, a group of middle age was about two times as compared with a group of young age. And both young and middle, the maximum of nucleolar inclusion the regio cruris anterior.
- (2) Both of young age and middle age, there were great difference in each region.
- (3) The region of exposing was higher than the region of coating was the appearance rate of nucleolar.