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The present study examined the effects of light reflection properties of wood on physiological responses in the evening (23:00–25:00) and early morning (8:00–10:00). Indirect light was used in this study. Wood wall, wood wallpaper and gray wallpaper panel were used the reflection side of light. Wood wall and wood wallpaper panel did not induce significantly melatonin suppression during light exposing in the evening. Wood wall and wood wallpaper have the property that absorbs the short wavelength (ex. 460 nm) of light. But, wood wall panel induced greater CNV amplitude and alpha wave ratio than occurred with wood wallpaper panel. And more, wood wall panel were significantly lower heart rate than occurred with wood wallpaper panel in the evening. However, gray wallpaper panel reflecting the short wavelength induced greater CNV amplitude, alpha wave ratio and heart rate that occurred with wood wall panel in the morning.

#### 1-12 Relationships between Sunlight Exposure and Nocturnal Melatonin

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The aim of our study was to examine the effects of sunlight exposure on nocturnal melatonin secretion. The subjects were 6 healthy male students. Two experimental conditions were conducted. Subjects were exposed to sunlight (bright light condition) or dim light (dim light condition) in a room from 10:00 to 13:00 for 7 days. Saliva samples were taken at 1:00 after 7 days exposure was finished. Predicting that the intensity of sunlight differ from day to day, bright light condition was repeated twice. Salivary melatonin was significantly greater in high illuminance, that likes fine day, compared to dim light condition. However, significantly increment was not obtained in low illuminance, that likes cloudy day. These results suggest that short time exposure (3 hours per 1 day) to high illuminance, that likes fine day's sunlight, increase nocturnal melatonin secretion.

#### 1-13 A Reduction Effect of Melatonin Secretion Restraint by Short Wavelength Control of Light

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In this study, twelve healthy males were exposed to the conditions (2300 K, 3000 K, 5000 K and Dim) for 1.5 h at midnight. The conditions of 3000 K and 5000 K were created by commercial fluorescent lamps. The light of 2300 K was modified by 3000 K fluorescent lamp fitted with the special

filter that absorb short wavelength light. The horizontal illuminance level was kept at 200 lx. Saliva samples were taken before and after the conditions. Higher melatonin secretion under 2300 K condition was obtained after the light exposure, compared to 3000 K and 5000 K conditions.

#### 1-14 Effects of Low Ambient Temperature on Sleep and Body Temperature in Women with Cold Constitutions (Hiesho)

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Effects of low ambient temperature on sleep and body temperature in young Japanese women with cold constitutions (known as hiesho) were investigated. The subjects comprised 10 female subjects with cold constitutions (Hiesho), 8 control females (Control), and 10 male (Male). The actigraph and bedroom climate were recorded continuously for 1 week. During the actigraph measurements, skin temperature and subjective sensations were performed for 2 nights. No significant differences were observed in the bedroom climate, which were maintained at 10–16°C, RH 60%, respectively. The clo value of clothing during sleep was significantly increased in the Hiesho than in the Control and Male. Further, wakefulness increased significantly in the Male than in the Control and Hiesho. No significant difference was observed in skin temperature. The thermal sensation of the leg was significantly cooler, and comfort sensation was discomfort in the Hiesho than in the Control and Male. These results suggest that despite no significant differences with regard to sleep and skin temperature, women with hiesho experience increased cold sensation in foot and discomfort.

#### 1-15 Physiological Responses of Sensitive Persons to Heat and Cold during Heat or Cold Exposures

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Our study aims to clarify physiological characteristics of heat or cold sensitive persons under hot and cold conditions. In the experiment of heat exposure, 31 young healthy female students who were divided into 3 groups of 'normal', 'slightly sensitive to heat' and 'sensitive to heat', were exposed to the thermal conditions at 28°C and 32°C of air temperature with 50%RH for 30 minutes. During the heat exposures, skin temperatures at 3 sites and thermal sensation votes were recorded. Body weight was measured before and after the exposure. In the experiment of cold exposure, 19 young healthy female students who were divided into 2 groups of 'normal' and 'sensitive to cold', were exposed to the thermal conditions at 20°C of air temperature with 50%RH for 30