

研究報告

1歳児における身体活動量と睡眠・覚醒に関する研究

—伝い歩き期と自力歩行期の比較—

Study on quantity of physical activity and sleep/awakening of one-year-old child

— Comparison of supported-walk period and free-walk period —

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Abstract

In this study, the authors have discussed physical activities, sleep and awakening rhythms of a supported-walk period (one year old) and free-walk period (one year and eight months old) as a case example of a one-year-old child. In the measurement, we used Actigraph, a clock-shaped three-dimensional accelerometer that is 17g in weight. Physical activities and sleep / awakening hours were obtained for Up Interval (active period), Down Interval (resting period), 0-0 Interval and 24Hour and analyzed. As a result, awakening hours of the subject child was  $794.95 \pm 92.83$  (55.20%) for the supported-walk period and  $800.33 \pm 67.01$  (55.58%) for the free-walk period. It has been revealed that sleep hours are reduced with aging. Furthermore, for active hours and resting hours, it has been revealed that active hours in the supported-walk period were longer than those in the free-walk period and resting hours were short ( $p < 0.05$ ). Moreover, sleeping hours in the active hours were 13.95 ( $\pm 7.66$ ) % for the free-walk period and longer than those in the supported-walk period, which were 10.23 ( $\pm 7.60$ ) %. Therefore, the results have indicated a possibility that in a free-walk period, resting hours are longer than those in a supported-walk period and more stable afternoon sleep is secured in active hours for it. The quantity of physical activities of the subject child was larger in the supported-walk period than in free-walk period. From this result, at the time when the subject child was able to walk myself at the age of one and a half years old, the subject child walked clumsily and unstably hence the quantity of physical activities was larger in the supported-walk period in which crawling is a main activity, we suppose. This study is the first study that reports quantitative analysis results of physical activities and sleep / awakening rhythms of one-year-old child. Several findings in physical activities and sleep / awakening rhythms of one-year-old child were obtained with Actigraph. However, this study is a pilot study of one case example we therefore should carefully derive conclusions for a tendency of one-year-old children. The authors plan to collect examples continuously and obtain new findings.

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physical activity, sleep / awakening, Actigraph