Abstract

Existing questionnaires can judge which hand or foot is the dominant one, but they do not quantify its motor skill. Here, we developed a new method to quantify the motor skill of the hands and feet by tracing a circle at a preset speed using a smartphone, which was held or attached to the ankle. By calculating the variability of the circular movement, we succeeded in quantifying the degree of handedness and footedness and could visualize the improvement and regression of motor skill from growth and aging, respectively. Furthermore, forced use of the right-hand improved not only right-hand skill, but it surprisingly improved right-foot skill too. Our method readily visualizes the skill and the lateral balance of the hands and feet, which we believe may be useful in assessing improvements in motor skill during sports training and physical rehabilitation.



References

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Contact

Atsushi Takagi Sensory and Motor Research Group, Human Information Science Laboratory