

• **10** : Neuroplasticity; Cortical thickness; Exercise-induced

integration, spatial orientation, and postural control. These findings have important implications for both clinical practice and public health. Incorporating balance education programs into rehabilitation protocols for individuals with balance impairments or vestibular disorders may enhance treatment outcomes and promote functional recovery. Moreover, promoting regular physical activity, including balance training, among older adults could help mitigate age-related declines in sensory and motor function, thereby reducing the risk of falls and maintaining independence.

Conclusion

In conclusion, this study provides novel insights into the effects of balance education on cortical thickness, highlighting the role of exercise-induced neuroplasticity in shaping brain structure and function. The observed increases in cortical thickness in visible and vestibular cortical areas underscore the potential of balance training as a modality for promoting brain health and improving sensory-motor integration. Future research should further elucidate the underlying neural mechanisms and explore the long-term effects of balance education on brain structure and function across diverse populations.

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