

## Publication

## Acute and Long-term Effects of Resistance Training on Executive Function

**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4602156**Author(s)** Soga, Keishi; Masaki, Hiroaki; Gerber, Markus; Ludyga, Sebastian**Author(s) at UniBasel** [Gerber, Markus](#) ; [Ludyga, Sebastian](#) ;**Year** 2018**Title** Acute and Long-term Effects of Resistance Training on Executive Function**Journal** Journal of cognitive enhancement**Volume** 2**Number** 2**Pages / Article-Number** 200-207

The current body of evidence suggests that both acute and chronic exercise have a positive impact on executive function (i.e., top-down mental processes for achieving internal goals). Previous reviews have mainly focused on the effects of aerobic exercise, whereas possible benefits following resistance training have received far less attention. Therefore, the present review examines both the acute and long-term effects of resistance training on the three core facets of executive function (inhibitory control, working memory, and cognitive flexibility). Comparing the effects of resistance training on different subcomponents, benefits were most pronounced for inhibitory control in both the acute and long-term exercise paradigms. Although some studies also reported positive effects of resistance training on working memory and cognitive flexibility, the interpretation of these improvements is limited due to heterogeneous findings and a small number of studies. Thus, it is premature to conclude that resistance training selectively benefits the inhibitory aspect of executive function. Further, it remains unclear how frequency, duration, and intensity of resistance training influence such cognitive enhancements. Consequently, future studies are encouraged to address possible influences of exercise characteristics on the subcomponents of executive function, and to further examine the effects of resistance training across all age groups.

**Publisher** Springer**ISSN/ISBN** 2509-3304**edoc-URL** <https://edoc.unibas.ch/78181/>**Full Text on edoc** No;**Digital Object Identifier DOI** 10.1007/S41465-018-0079-Y