

Effects of aging and exercise training on mitochondrial function and apoptosis in the rat heart



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Protein levels of Complexes I, II, and IV lower in older sedentary rats compared to young sedentary rats and older exercising rats

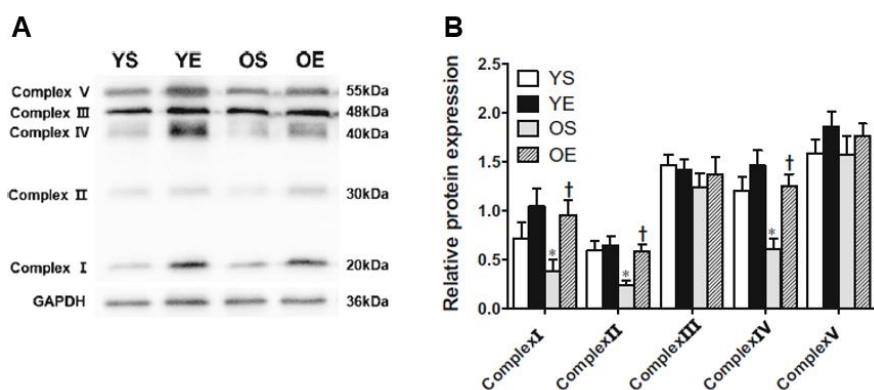


Figure 1. Protein levels of mitochondrial electron transfer pathway complexes subunits of rat heart tissue as shown in **(A)** Western blot and **(B)** the relative expression of proteins assessed using densitometry; young sedentary (YS) group, young exercise (YE) group, old sedentary (OS) group, and old exercise (OE) group. The results are indicated as the means \pm standard errors of means (SEM). * represents $p < 0.05$ compared to the YS group, † is $p < 0.05$ compared with the OS.

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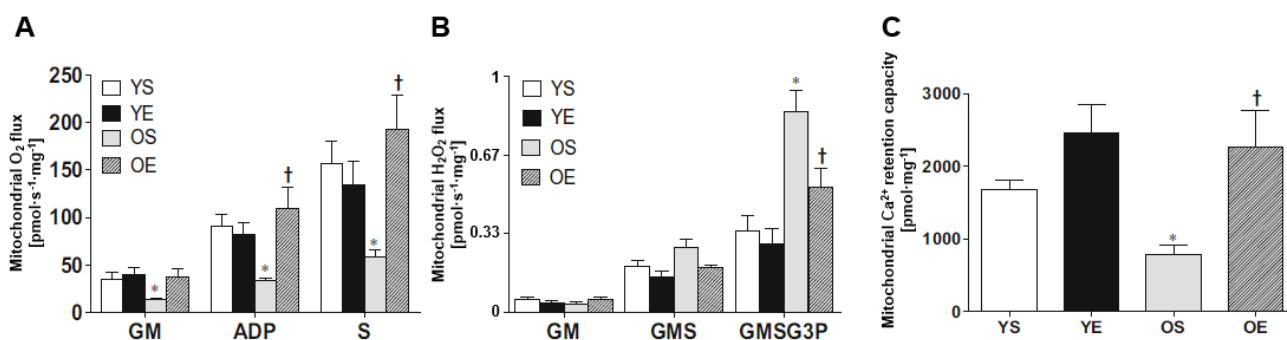


Figure 2. Effects of aging and exercise on mitochondrial function in cardiac muscle. **(A)** Mitochondrial O₂ flux of NADH-linked (glutamate, malate and ADP) and succinate-linked respiration, **(B)** mitochondrial H₂O₂ flux of NADH-linked (glutamate, malate), with succinate-linked (glutamate, malate and succinate), and Gp-linked activity (glutamate, malate, succinate and glycerophosphate), **(C)** mitochondrial Ca²⁺ retention capacity; young sedentary (YS) group, young exercise

Data from this study support the concept that exercise protects against aging-induced mitochondrial dysfunction in cardiac muscle

Reference: No MH, Heo JW, Yoo SZ, Kim CJ, Park DH, Kang JH, Seo DY, Han J, Kwak HB (2020) Effects of aging and exercise training on mitochondrial function and apoptosis in the rat heart. Pflügers Arch 472:179-93.

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