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**Exercise Adaptation of Skeletal Muscle Fibers: The Role of MicroRNAs**

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**Objective** Explore the relationship between exercise adaptation of skeletal muscle fibers and microRNAs.

**Methods** Research related papers.

**Results** endurance training can switch muscle fiber type by promoting microRNAs (miR-208b, miR-499). For example, the conversion from fast Type IIb muscle fibers to slower Type IIx/d muscle fibers, or from Type IIx muscle fibers to Type IIa muscle fibers. Endurance training can also promote the expression of Peroxisome Proliferator Receptor Gamma Coactivator-1α (PGC-1α) and enhance the oxidative potential for slow muscle fibers by inhibiting some microRNAs such as miR-23a. Resistance training can activate insulin-like growth factor-1/phosphatidylinositol-3-kinase/protein kinase B/mammalian target of rapamycin/P70 ribosomal protein S6 kinase (IGF-1/PI3K/Akt/mTOR/P70S6K) pathways and promote fast muscle fibers hypertrophy by inhibiting negative microRNAs (miR-1,miR-133,miR-128a) and promoting positive microRNAs (miR-27,miR-29,miR-486).

**Conclusions** MicroRNAs play an important role in the exercise adaptation of skeletal muscle fibers.