

Anabolic effects of androgens on muscles of female pelvic floor and lower urinary tract.

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PURPOSE OF REVIEW: This review discusses recently published data concerning the anabolic effects of androgens on muscle and the mechanism by which testosterone regulates body composition with special emphasis on the anabolic effects of androgens on the muscles of the pelvic floor and lower urinary tract. **RECENT FINDINGS:** Androgens have direct anabolic effects on skeletal muscle. Testosterone increases lean body mass and decreases fat mass in a dose- and concentration-dependent fashion. The action of testosterone on muscle involves multiple mechanisms, including its effects on inducing protein synthesis, recruiting satellite cells, and modulating the commitment of pluripotent mesenchymal cells to myogenic lineage. Levator ani and other muscles of the pelvic floor and lower urinary tract are sensitive to the anabolic effects of testosterone. Androgen receptors are also expressed in the pelvic floor and lower urinary tract of both animals and humans. Anabolic effects of androgens may play an important role in the female pelvic-floor and lower-urinary-tract disorders. Furthermore, the interactions between androgen and nitric oxide synthase and arginase have been demonstrated, suggesting that androgens may also participate in modulating the physiological functions of lower urinary tract through nitric oxide. **SUMMARY:** Androgens induce muscle hypertrophy and reduce fat mass. The action of androgens in the lower urinary tract and pelvic floor is complex and may depend on their anabolic effects, hormonal modulation, receptor expression, interaction with nitric oxide synthase, or a combination of these effects. Further studies are needed to determine the precise role of androgens in women with urinary incontinence and pelvic organ prolapse.

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