

## Short Period Exposure of Di-(2-ethylhexyl) Phthalate Regulates Testosterone Metabolism in Testis of Prepubertal Rats

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Exposure of di-(2-ethylhexyl) phthalate (DEHP) to prepubertal rats for 14 or 28 days was reported to have reduced testosterone (T) biosynthesis by altering androstendione 17 $\beta$ -hydroxysteroid dehydrogenase (17 $\beta$ -HSD) activity. However, our study indicated that shorter period of exposure to DEHP (100 or 1000 mg/kg for 5 days) to 4 week old male Wistar rats did not affect the activity of 17 $\beta$ -HSD, the rate-limiting enzyme of T biosynthesis in testes. Testosterone 5 $\alpha$ -reductase (T5 $\alpha$ -R) activity in the testes was significantly enhanced, while aromatase (CYP19) mRNA was significantly reduced with increasing doses of DEHP. The expressions of CYP2C11 and CYP3A2 isoforms in the testes increased along with their enzymatic activities, T16 $\alpha$  and T6 $\beta$ -hydroxylation, respectively. Thus, the current study clearly indicates that the short period exposure to DEHP alters the metabolism of T through the alteration of activities of T5 $\alpha$ -R, CYP19, CYP2C11 and CYP3A2 in the testes of prepubertal rats, and that they are more sensitive marker enzymes to the exposure to DEHP than those of biosynthetic enzymes of T from androstendione.