# TESTOSTERONE SUPPRESSION BY HEROIN

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Madam,

In Pakistan the proportion of heroin addicts among total drug abusers has risen from 4% in 1980 to 23% in 1985. However, a significant difference in the pattern of drug dependency exists in Europe and Pakistan. Heroin addicts experience both diminished sexual drive and impairment of sexual function. Several studies have been carried out on the endocrine systems of heroin addicts. A significant hormonal depression was observed by heroin treatment during different studies mostly conducted in controlled laboratory conditions and several findings were contradictory to each other[4-8]. The hormonal studies on heroin users receiving street heroin are, however, scanty. The present study was designed to examine effect of heroin on serum testosterone (T) levels in active addict population of Peshawar area in Pakistan where poly-drug abuse is uncommon and illicit heroin is easily available. The serum concentrations of testosterone in 33 males (aged 18-50, receiving street heroin) were measured using RIA kits. Radioimmunoassay kits supplied by Coat-a-Count Diagnostic Product Corporation, U.S.A. The addicts and control males were grouped on the basis of age as adult addicts (18-25 years),mature addicts (26-35 years) and middle age addicts (36-50 years).The results of the study are presented in Table and Figure.

**TABLE. Serum testosterone levels in normal controls and untreated male heroin addicts.**

| Category | Number | Testosterone (ng/100ml) |
|---|---|---|
| CONTROLS | | |
| Young adults | 14 | 623.84 ±104.92 |
| Mature adults | 12 | 667.30 ±170.80 |
| Middle age | 9 | 569.12 ±138.12 |
| HEROIN ADDICTS | | |
| Young addicts | 11 | 228.20 ±122.41 |
| Matur addicts | 14 | 441.01 ±233.60 |
| Middl age addicts | 8 | 433.85 ±227.82 |

Values are mean ±SD

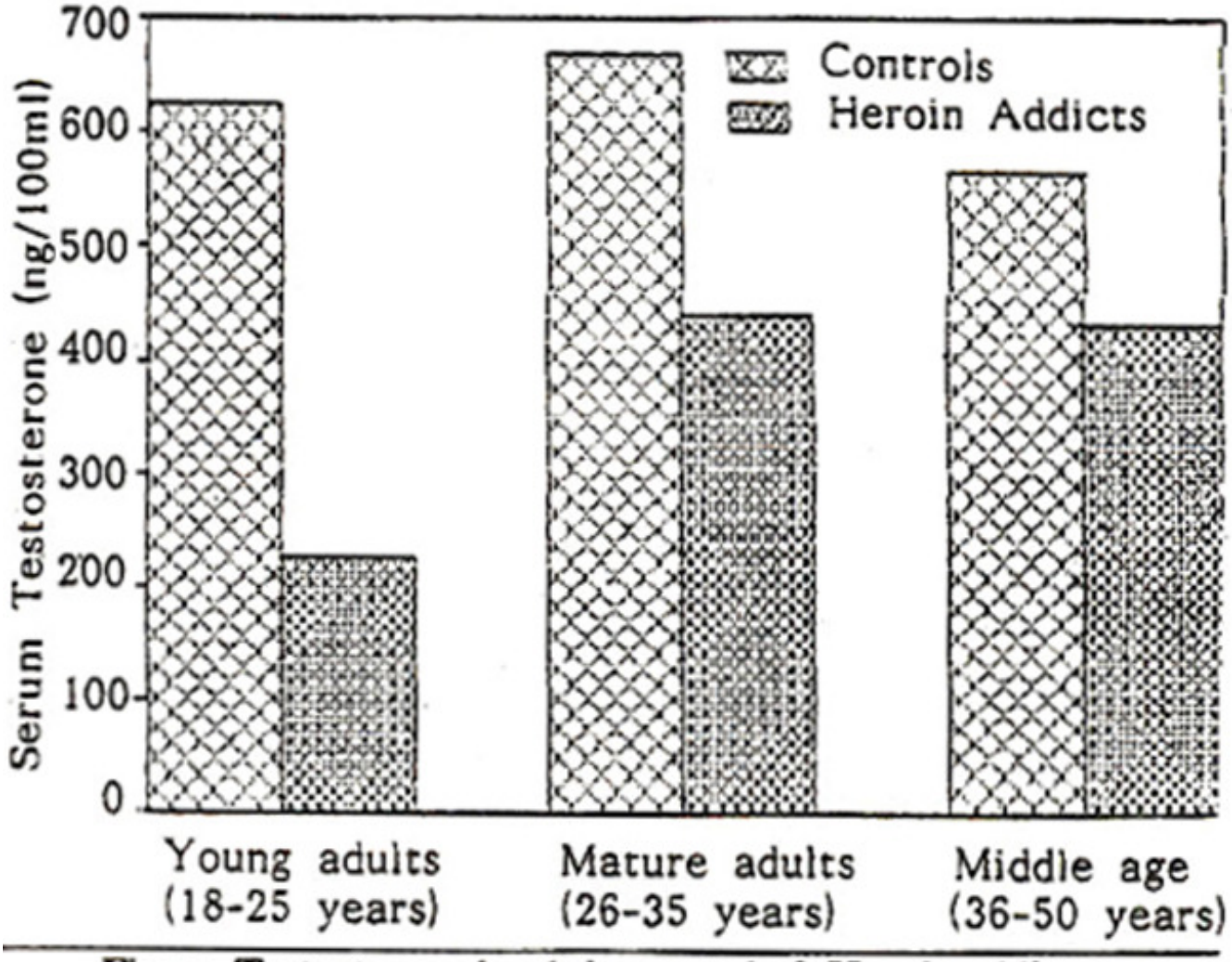


**Figure. Testosterone levels in controls & Heroin addicts.**

The levels of T in young adults was 623.84 ± 104.92 ng/100 ml which were slightly elevation mature adults and slightly dropped in middle age group. However, these differences were statistically insignificant. Similarly the T level differences among the addicts of different age groups were insignificant although in young addicts the levels dropped to 228.20 ± 122.41 ng/100ml. On respective comparison of the average Travels with the control groups, there was a significant decrease ($P < 0.05$) in T values of young and mature addicts with statistically insignificant effect on middle age group. Our findings are in agreement with previous observations reported during the controlled laboratory experiments where heroin was found to suppress plasma testosterone (T). Present study therefore suggests that young addicts may be more prone to the adverse effects of heroin as compared to elder addicts. It is likely that heroin has a direct suppressive effect on serum T. it is possible that heroin may inhibit secretion of gonadotrophins from the pituitary in humans since this phenomenon has been demonstrated in some experimental animals[9]. The work is in progress to see the effect of heroin ongonadotrophins in these male addicts.

Yours,

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