

## FACT SHEET: TOBACCO AND THE UROPOETIC SYSTEM

- The impairment of venous drainage plays significant role in younger ED patients due to smoking-induced atherosclerotic and arterial endothelium changes which affects the arterial system over a longer period.<sup>1</sup>
- Smokers presented with ED nearly 7 years earlier than nonsmokers did.<sup>1</sup>
- The semen parameters used to indicate fertility in men, such as semen volume, acidity, concentration, and viability, were significantly much lower in smokers than nonsmokers.<sup>2</sup>
- Smoking affected semen quality and significantly reduced ejaculate volume, particularly among heavy and long-term smokers.<sup>2</sup>
- One out of 10 male smokers reported that they had trouble keeping an erection when they wanted to, a difficulty that lasted for at least one month over the previous year.<sup>3</sup>
- Based on cumulative exposure (pack-years), men who ever smoke or who smoke at some time were more likely to have ED compared with men who never smoke.<sup>4</sup>
- When current smokers were compared with former and never smokers and were stratified by age, smokers in their forties had the greatest relative odds of having ED, that is OR 2.74 (0.44–16.89), compared with OR 1.38 (0.51–3.74), OR 1.70 (0.82–3.51), and OR 0.77 (0.27–2.21) for men in their fifties, sixties, and seventies, respectively. Compared with men who never smoked, men who currently smoked were more likely to have ED after the data was adjusted for age.<sup>4</sup>
- Compared with men who never smoked, men who smoked at some time had a greater likelihood of erectile dysfunction (age-adjusted odds ratio = 1.42), and there was a dose response.<sup>4</sup>
- Comparing the pairs of three smoker groups (mild, moderate, and heavy smokers), sperm concentration and fertility index (FI) in heavy smokers were significantly lower than that observed in mild smoker and non-smoker groups.<sup>5</sup>
- There are significant relationships between cigarette smoking and impaired testicular histology, reduced diameter of seminiferous tubules, and decrease in the index of the Sertoli cells in rats. All these elements are directly linked with the reduction in the sperm development process in rats.<sup>6</sup>
- Sperm count and morphology in infertile smokers were significantly lower than in male non-smokers, whereas sperm motility in infertile male smokers was also slightly lower than infertile male non-smokers.<sup>7</sup>
- The prevalence of erectile dysfunction among cigarette smokers was higher compared with non-smokers in the same age groups (smokers vs. nonsmokers, age 35–44: 6.4% vs 4.6%; 45–54: 17.8% vs 14.8%; 55–64: 44% vs 35.6%; and 65–74: 54.7% vs 45.6%).<sup>8</sup>
- Smoking more than 10 cigarettes a day was independently associated with an earlier onset of andropause symptoms such as impotence, weakness, and memory loss.<sup>9</sup>
- Among smokers, occurrence of ED is a result of impaired penile veno-occlusive mechanisms.<sup>1</sup>
- Maintenance flow (MF) of venous blood in the penis is more impaired by smoking than arterial blood (the peak systolic velocity). This MF is one important indicator of venous involvement in pathogenesis of ED among smokers.<sup>1</sup>

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