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### IS CIGARETTE CONSUMPTION ASSOCIATED WITH DECREASED WORK PRODUCTIVITY IN WORKERS?

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#### Abstract

**Backgrounds:** Workers' health, which impacts workplace productivity, is a concern for all companies. Employers and society benefit when workers make positive lifestyle changes, such as quitting smoking. Although the harmful effects of smoking on health have been clearly demonstrated, there is still debate about the impact quitting smoking has on workers' health. Indonesia is one of the countries in Southeast Asia whose population is mostly smokers, especially among young people. The number of smokers in Indonesia is enormous. Cigarettes can be obtained from the market, but residents make some manually. In addition, filtered kretek cigarettes are in great demand by most active smokers in Indonesia. It is a fact that most Indonesians smoke kretek. This study aims to determine changes in respiratory organs in rat models after treatment with low-dose filter cigarette smoke which results in decreased productivity.

**Methods:** We have conducted a study using two groups of Sprague-Dawley rats with filtered kretek cigarettes. The first group of rats, as our control group, are designed without exposure to cigarette smoke and breathe fresh air. While the second group, as the treatment group, was exposed to cigarette smoke with one cigarette/per day for about 13 weeks.

**Results:** The study showed that the treated group of rats had dull yellow fur on the back and abdomen, was less clean, and the hair distribution was less frequent than the control group. Changes in organ size were also found, such as bronchial length, bronchial width, bronchiolar width, and us bronchiolar circumference in the rat group treated at week 13. In addition, mucus was found in the bronchioles and respiratory bronchioles in the treated rat group, but no mucus was seen in the control group.

**Conclusions:** Changes in several organs in rats given filtered kretek cigarettes resulted in damage to the respiratory organs. This can also happen to workers who smoke filtered kretek cigarettes, resulting in decreased work productivity.

**Keywords:** Cigarettes consumption, workers' health, respiratory organs.