



International Association of  
Scientists  
www.iasnetedu.com

Available online at [www.jobiost.com](http://www.jobiost.com)

**IJBLS 2023; 2(2):327-327**



International Journal of  
BioLife Sciences

## Abstract

### Health Risk Assessment on DNA Damage in Buccal Cell among Manufacturing Paint Workers

Nurul Afiqah Saironi, Normah Awang\*, Nurul Farahana Kamaludin, Farah Wahida Ibrahim,  
Kok Meng Chan

Center for Toxicology and Health Risk Studies, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan  
Raja Muda Abdul Aziz, 50300 Kuala Lumpur, Malaysia

*Received: 15 August 2023*

*Revised: 22 August 2023*

*Accepted: 29 August 2023*

#### Abstract

**Background and Aim:** Paint manufacturing involves a number of processes involving various types of chemicals that expose workers to occupational hazards. Previously, many studies discovered that workers exposed to complex chemical mixtures could suffer health consequences. The aim of this study is to assess the early DNA damage in buccal cells among the paint manufacturing workers in selected paint factories in Bangi, Selangor, Malaysia.

**Materials and methods:** In this study, 40 paint manufacturing workers were categorized into "control" and "non-exposed" groups, with 19 and 21 individuals, respectively, working in the paint manufacturing and office areas. A World Health Organization (WHO) questionnaire collected demographic data, occupational hazard awareness, personal protective device usage, and serious illness histories. Buccal samples, taken three times per worker, were collected during working hours to assess average damage.

**Results:** The results show that 63% of the respondents have had formal training on hazards and safety measures, 30% are smokers, and only 30% of respondents are aware of the hazards associated with their jobs. When exposed workers were compared to the control group, there was a marginally significant increase in the percentage length of the tail moment ( $P < 0.05$ ). An increase in the percentage of length at the tail moment demonstrates an increase in DNA damage in buccal cells.

**Conclusion:** According to this study, as a result of prolonged exposure to a complex chemical mixture during paint production, DNA damage in buccal cells increases among paint manufacturing workers.

**Keywords:** *Paint manufacturing worker, DNA damage, Occupational exposure*

---

**\*Corresponding author:** Normah Awang, Center for Toxicology and Health Risk Studies, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur, Malaysia.

**E-mail address:** norm@ukm.edu.my