Contaminants in human nail dust: an occupational hazard in podiatry?
Paul Tinley\textsuperscript{1*}, Karen Eddy\textsuperscript{2}, Peter Collier\textsuperscript{3}
\textsuperscript{1}Department Podiatry, Charles Sturt University, Albury, NSW 2640, Australia, ptinley@csu.edu.au
\textsuperscript{2}Department Podiatry, Charles Sturt University, Albury, NSW 2640, Australia
\textsuperscript{3}Riverina Podiatry, Albury, NSW 2640, Australia

Background
There has been limited literature indicating that podiatrists’ health may be at risk from exposure to human nail dust. This exposure is due to their work in reducing thickened toe nails using high speed burs. Previous studies carried out in the UK have shown that large amounts of dust become airborne during the human nail drilling procedure and are present in the air up to 10 hours after a clinical session. This increases the risk of Respiratory Tract (RT) infection for the practitioner.

Methods
This study used a nasal swabbing technique followed by fungal culture to determine whether podiatrists (n = 50) had the same microbes present in their nasal cavities compared to a non-podiatry health professional control group (n = 45). All swabs were cultured, counted and identified for each subject. Each podiatrist was surveyed regarding the use and type of nail drill along with type of protective mask used, how often the mask was changed and the extent of drill usage over a two week period.

Results
The results showed the podiatrists had a greater range of microbes in their nasal cavities although the controls had greater overall numbers of organisms. The known pathogen and common indoor air mould, Aspergillus fumigatus was the most commonly found fungus within the podiatric group with 44% of the group having the fungus present. All nail drills used by the podiatrists had some form of dust extraction (except one). Of concern was the fact that 17% (n = 8) of the podiatrists did not use a mask at all whilst drilling and seemed unaware of any infection control issues. Simple disposable masks were the most frequently worn with only half being changed after each patient further increasing the cross infection risk.

Conclusion
The high levels of Aspergillus contamination is a significant finding in the podiatry group as this fungus is small enough to enter the tissue of the nasal cavity and as a small particle will stay airborne in the room for up to 16 hours. Aspergillus has been shown to cause brain and soft tissue tumours in extreme cases. The high levels of upper respiratory track problems reported in the literature may well be caused by this fungal agent. The non-use and use of inappropriate masks by podiatrists is clearly an occupational hazard to their health and well-being.