

Lay summary to Parliamentary Committee Hearing on research into Mitochondrial proteins in DeSeal/ReSeal personnel

What have you discovered?

The pilot studies have consistently found changes in mitochondrial proteins of exposed airmen not present in blood samples from non-exposed controls

When did you discover these particular findings ?.

These changes have been seen in three separate experiments conducted between 2004 and Apr 2009.

What prompted the research ?.

Three factors prompted the research:-

A request from the Chief of the Airforce (through the Airforce Advocate) following the diagnosis of mitochondrial disease in an airman who died after working in the fuel tanks.

A number of exposed individually referred to my clinic were found to have symptoms typical of mitochondrial damage.

Research publications from other centers showed fuel damage to mitochondria.

What does the finding mean in respect of Deseal Reseal personnel ?.

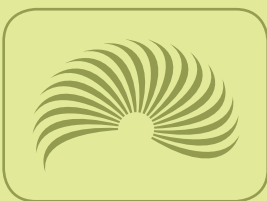
The finding suggests that exposed airmen may show protein differences in blood samples which can be detected through appropriate expert investigation using sophisticated laboratory techniques.

Because mitochondria in blood are derived from stem cells in the bone marrow, the finding many years after exposure, suggests permanent damage or change to these stem cells.

What is yet to do in this research series ?.

The nature of the protein changes should be further investigated to understand the nature of the cell changes. The proteins are more likely to be a response to previous injury rather than direct markers of injury.

The protein test needs to be validated by testing samples from a larger number of exposed and control individuals. The validation study would provide the information necessary to confirm that the changes seen are able to indicate a risk of permanent disability.



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