PFAS Health Study: Blood Serum Study

Pre-test consultation advice for GPs

While PFAS can persist in humans, animals and the environment, currently there is limited evidence of significant impacts on human health from exposure to PFAS chemicals.

The Environmental Health Standing Committee (enHealth) issued revised guidance statements in 2019 to reflect the most current evidence relating to PFAS, including that PFAS exposure has been associated with mildly elevated levels of cholesterol, effects on kidney function and effects on the levels of some hormones. However, these effects are small and generally within ranges seen in the general population.

As a precaution, governments in Australia recommend that exposure to PFAS be minimised wherever possible while further research is undertaken on the potential health effects of PFAS exposure.

Further information is available in the *Per- and Poly-Fluoroalkyl Substances (PFAS) – Health Effects and Exposure Pathways* factsheet published on the Department of Health website.

Limitations of PFAS blood testing

Blood testing for PFAS currently has no diagnostic or prognostic value for individuals and cannot be used to guide clinical management. This means that a blood test cannot determine if PFAS levels in a person's blood will make them sick now or later in life, or if any current health problems are related to the PFAS levels found in their blood. There are no 'normal' or 'abnormal' ranges and most Australians are expected to have detectable levels of PFAS in their blood due to the widespread use of this chemical in a range of applications and products.

The value of blood testing is limited to assessing exposure at the population level. A blood test can measure the level of PFAS in a person's blood and can tell a person how their blood levels compare with the levels seen in the general Australian population.

Discussion points regarding PFAS blood testing

- All Australians are expected to have detectable levels of PFAS in their blood. A range of levels would be expected in all communities due to background exposures.
- There has been testing of pooled blood in Australia to assess the range of levels in the community and this has been useful to document changes over time. This testing did not identify results for individuals.
- A "normal" PFAS range for an individual is not available in Australia or internationally.
- An individual's blood result can be compared to historic pooled community levels.
- Blood levels are not predictive of health problems in individuals. There is no consistent evidence of PFAS resulting in human disease therefore levels considered higher than the Australian general population may have no clinical relevance to the individual. For this reason, a "minimal risk" level also does not exist in Australia.
- There is no practical treatment available to lower levels of PFAS in the blood.
- A PFAS blood test will only tell you the current level of PFAS in an individual's blood.
- PFAS have a very long half-life in humans and persist in the body for many years. The blood level will usually reflect cumulative exposure over this extended period.
- A PFAS blood test cannot tell you when exposure occurred. Nor is it possible to determine the source of PFAS found in an individual's blood.

- The PFAS blood test does not measure the blood level precisely. Tests taken from the same person at the same time show variability as a result of the test methodology.
- The same level in two different individuals may not mean the same level of exposure, due to toxicokinetic differences.
- There are no specific biomarkers to look at effects of PFAS exposure.
- Patients should be referred as appropriate to psychological, mental health, counselling or other support services through their Primary Health Network (PHN) or via the digital mental health gateway Head to Health.
- Repeat or frequent blood testing is not recommended and has no clinical value. In humans, studies suggest that it can take many years for PFAS blood levels to go down by half.