

X-Ray Fluorescence Measurement of Bone Pb *In Vivo*: a Review and Prospects for Improvement

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Bone Pb was first measured *in vivo* by Ahlgren *et al* of the University of Lund in 1972. Such *in vivo* bone Pb measurements have challenged and contributed significantly to the understanding of the long term behaviour on Pb in the human body. Different investigators have built on the platform provided by Ahlgren and his colleagues. Somerville *et al* found that ^{109}Cd was an advantageous alternative as a fluorescing source for K series Pb x-rays. Whereas Wielopolski showed the potential of using L x-ray fluorescence to provide complementary information

The systems with the lowest detection limits at present are third generation versions of the ^{109}Cd K x-ray fluorescence. This presentation will explore the use of ultra high throughput nuclear pulse electronics to improve these detection limits further.

This presentation will also review recent work using portable x-ray analyzers for L x-ray fluorescence of Pb. Attention will be paid to ease of use as well as performance comparison with K x-ray fluorescence.