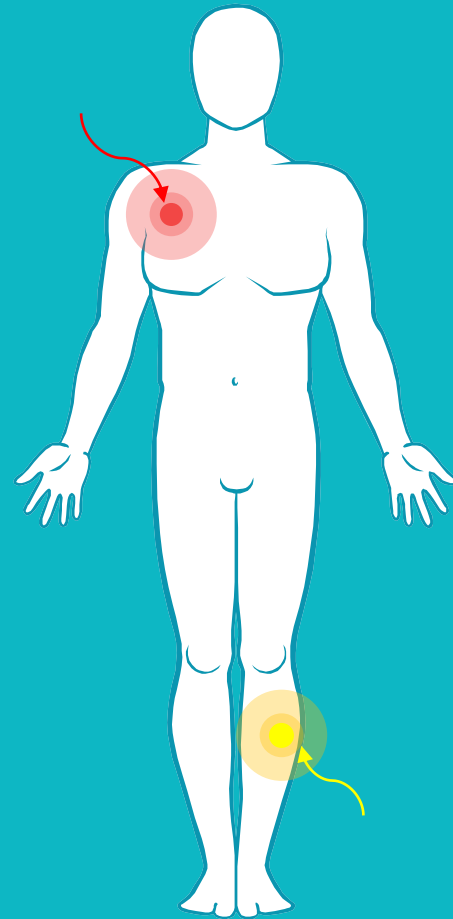


Devices to Measure Gd in Different Organs

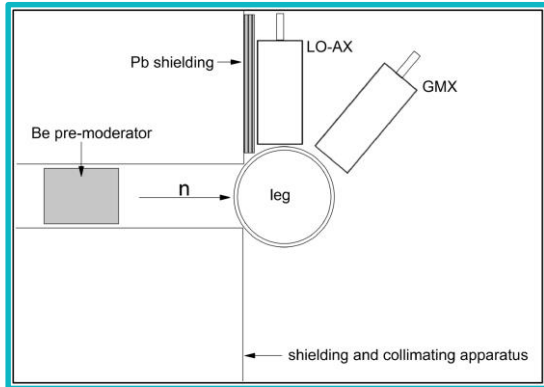
Fiona McNeill



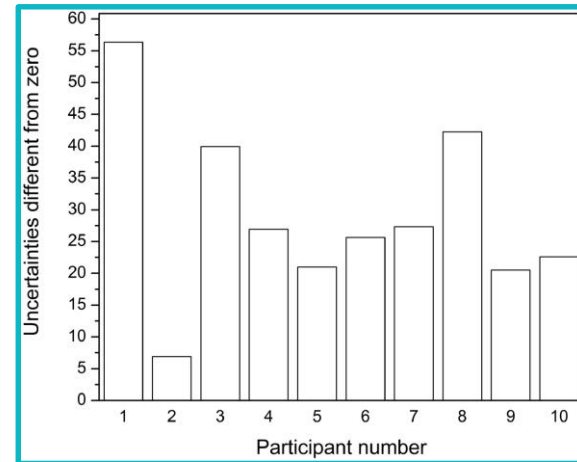
Conflicts of Interest

No conflicts of interest reported.

Measurement of Gd in kidney, liver and human muscle using in vivo neutron activation analysis



10 in vivo measurements:
subjects measured before, immediately after, and 2-7 days post injection/ MRI (Gadovist).

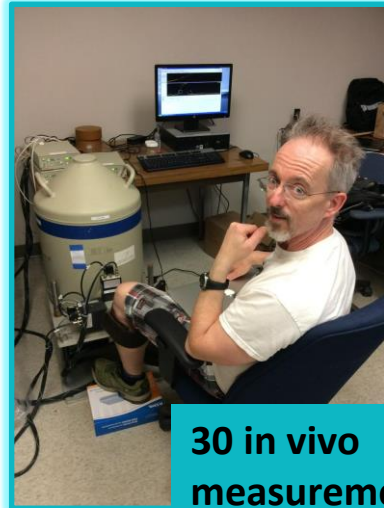
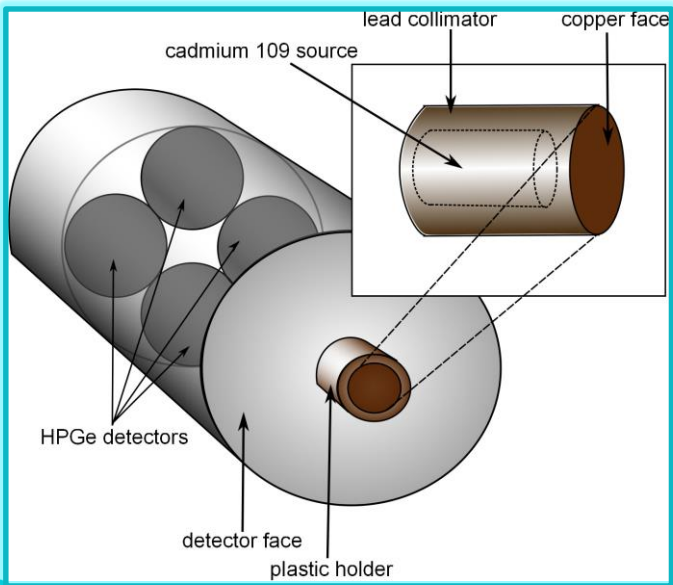


Phantom detection limits :

7.2 ± 0.3 ppm kidney, 3.0 ± 0.1 ppm liver, and 2.33 ± 0.08 ppm lower leg muscle

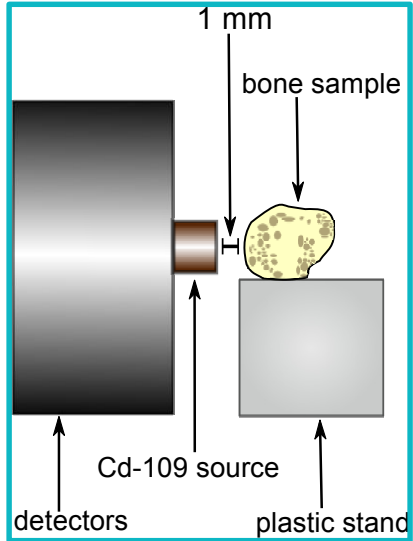
Measurement of Gd in bone using in vivo x-ray fluorescence

K X-ray fluorescence (K-XRF) system:
5 GBq ^{109}Cd excitation source 88 keV
Detect Gd K α x-rays 42-49 keV

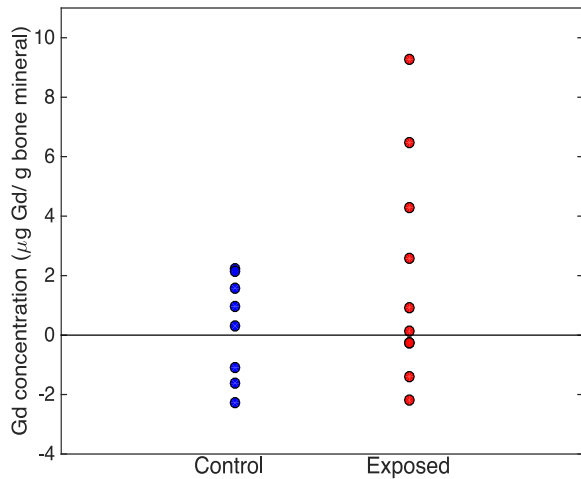


30 in vivo measurements performed to date
15 Gd exposed, 15 control (11 in each group reported)

Validated against ICP-MS using autopsy samples

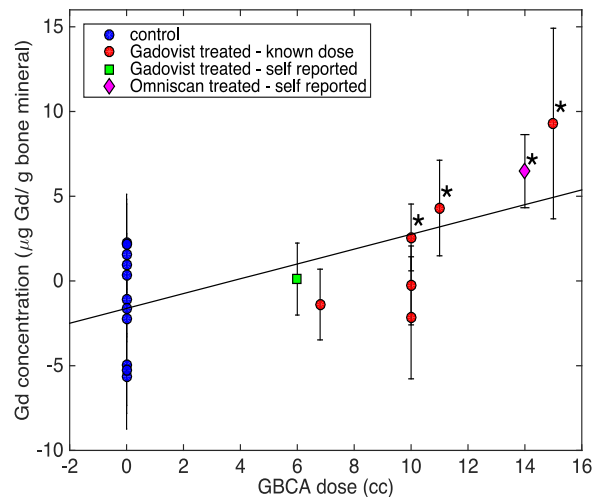


XRF of Gd in bone: In Vivo Data



**Exposed >
control**
**2 µg Gd/g bone
mineral**
p=0.05 normal
p=0.01 IVWM

A significant positive slope of 0.39 ± 0.14 µg Gd/g bone mineral per cc of injected GBCA (Gadovist®). (p=0.014)



*** Gd concentrations that are each significantly higher than the control group mean (p<0.05).**