

**DETERMINING
RADIATION LEVELS
ASSOCIATED WITH Ra-223 ADMINISTRATION**

SEPTEMBER 2013

**A. M. ZIMMER, PhD.
Professor of Radiology
Northwestern University Medical School
Northwestern Memorial Hospital
Chicago, IL**

A. Michael Zimmer, PhD., Northwestern University Medical School, Northwestern Memorial Hospital, Chicago, IL received two (2) Ra-223 patient doses.

These doses were used to determine the radiation levels with and without a syringe shield.

A: Dose 1: 96.9 μ Ci Dose of Ra-223

Diode Reading: surface
2060 mR/hr

Survey Meter: taken at 3.3cm from syringe
200 mR/hr
(calculated for 1cm 2,178 mR/hr)
(Note: surface reading pegged meter)

Background Diode: minimal reading

B: Dose 2: 138.1 μ Ci Dose of Ra-223

Diode Reading: surface of Biodex Beta Shield
minimal reading

Background Diode: minimal reading

Ludlum Survey Meter: surface of Beta Shield
8 mR/hr

Calculated Syringe
Surface Reading 2936 mR/hr

Conclusion:

The use of a syringe shield when handling Ra-223 is necessary to reduce the dose to a technologist, pharmacist or physician.

Using the Biodex Beta Syringe Shield reduced the calculated surface activity for the 138.1 μ Ci Ra-223 dose from 2936 mR/hr to a background level.