

# Measuring HVLS - potential pitfalls

Elly Castellano

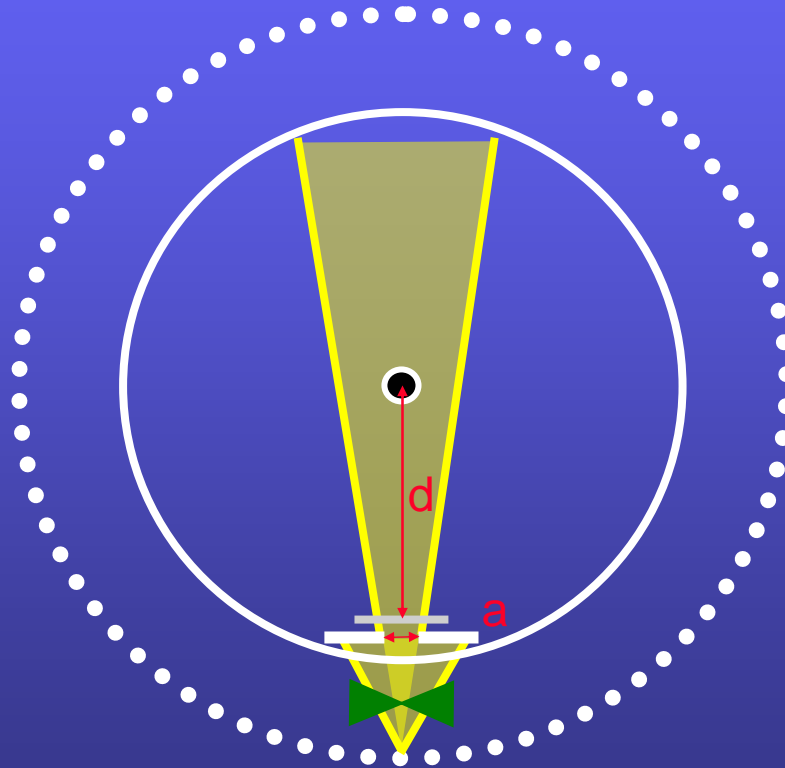


Physics Department  
Royal Marsden Hospital

# Why the concern?

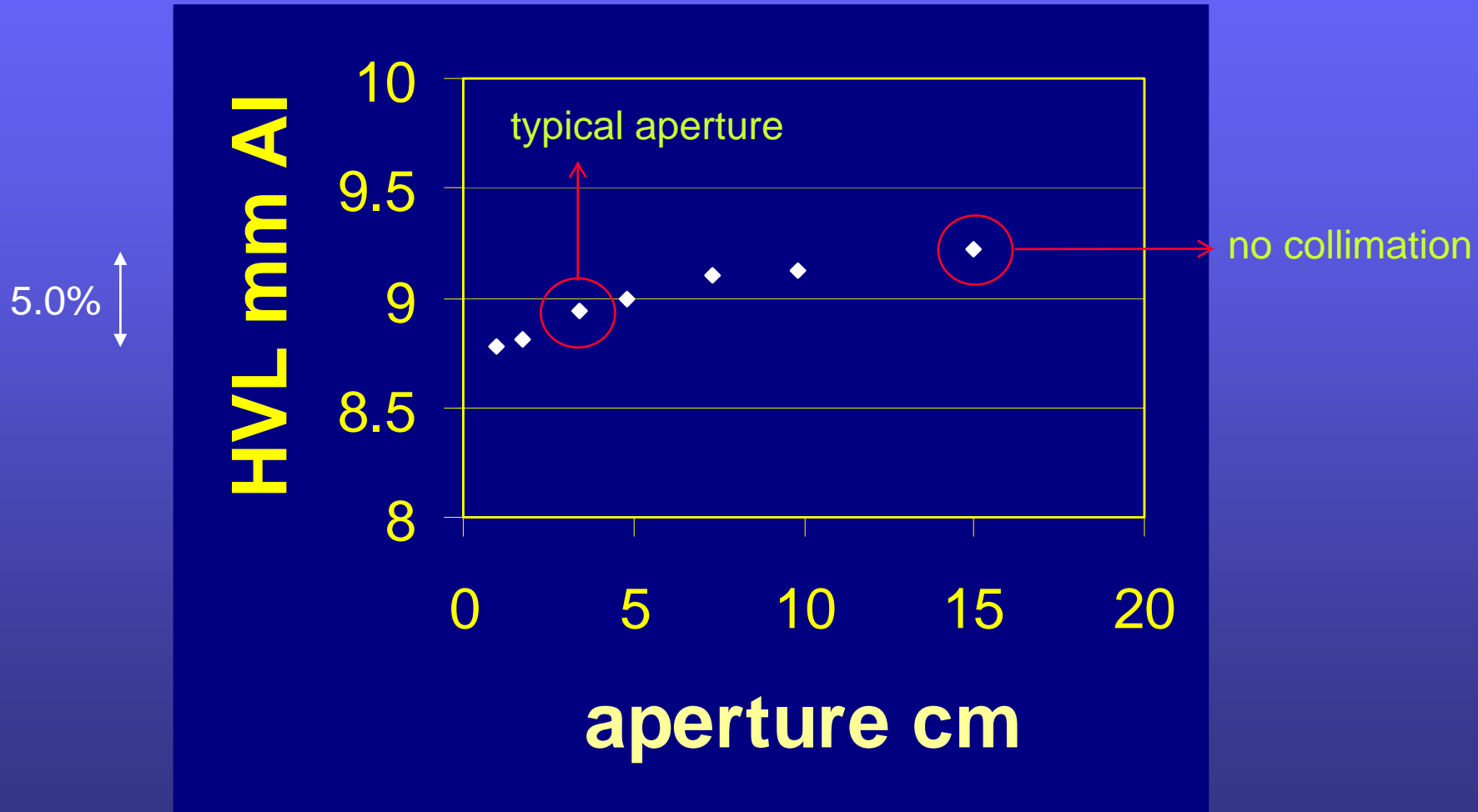
- Monte Carlo simulations as good as accuracy of input data
- HV/Ls used to generate x-ray spectra

# HVL measurement



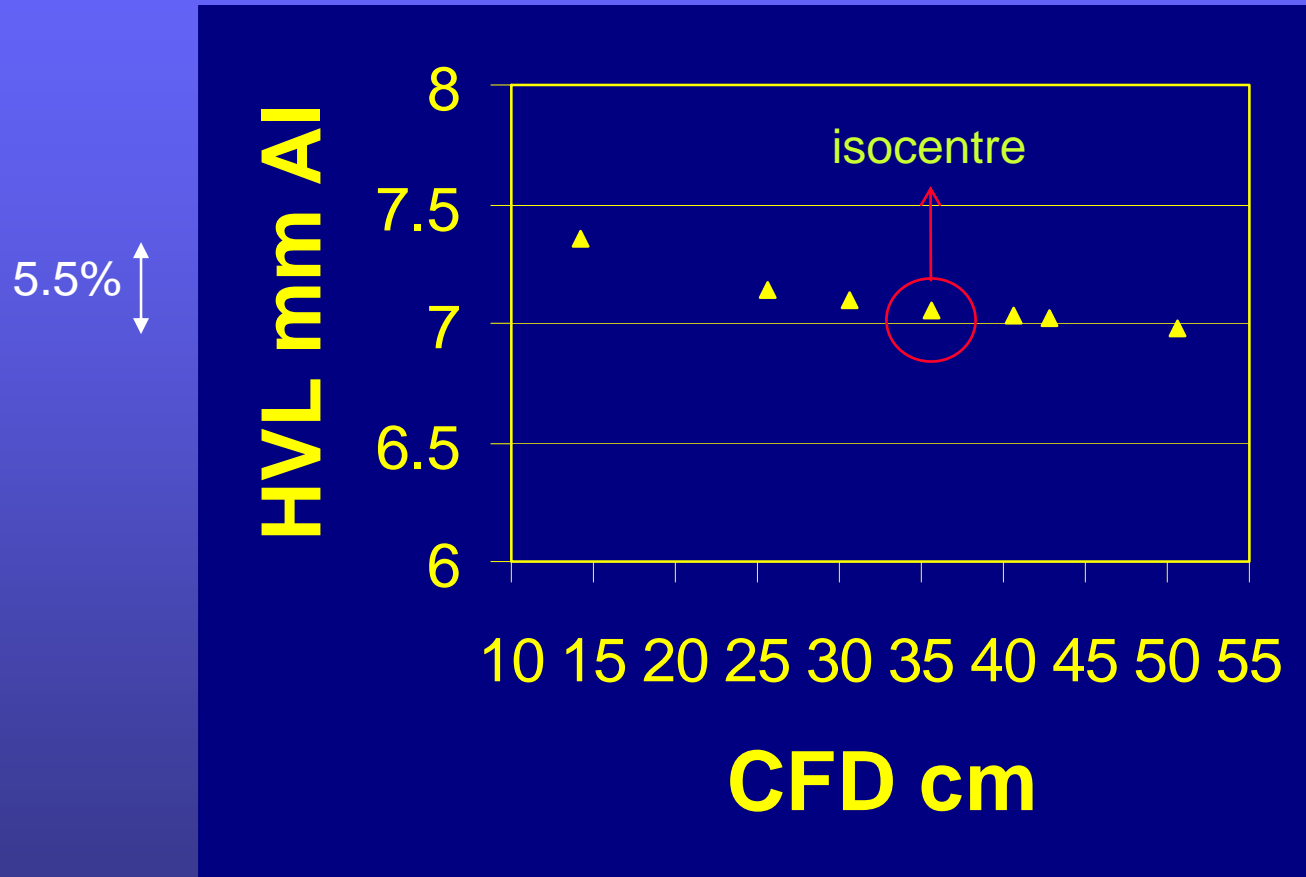
0.2% precision

# Changing aperture



VZ, 120kV, body filter

# Changing filter to chamber distance



CT/i, 120kV, large bowtie

# Changing filter size

	HVL mm Al	
filter	1.7cm aperture	no collimation
2cm	8.99	9.65
10cm	8.81	9.22

VZ, 120kV, body filter

# Conclusions

- Observe traditional HVL methodology
  - <2cm aperture, chamber at isocentre
- In absence of collimation large filters reduce error
- Potential error in inferring filtration
  - low filtration scanners