

# **Kazakhstan – Possible Improvements**

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**Workshop on Impact of Dose  
Uncertainties on the Dose Response  
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# Background

- **Population exposed as juveniles to fallout from nuclear test explosions at the Semipalatinsk Test Site in NW Kazakhstan during 1949-1962**
- **Study cohort established in 1960's, monitored by Soviet govt & then by Kazakhstan govt institutes**

# Rationale

- **Use thyroid nodule prevalence as outcome variable, based on ultrasound screening during August 1998**
- **Reconstruct external and internal doses**
- **Evaluate dose response for external and internal radiation, estimate RBE**

# Dose reconstruction crucial

- **Outcome variable: Ultrasound-detected thyroid nodule prevalence**
- **Outcome reasonably secure: We did the determination ourselves**
- **External dose depends mostly on place of exposure**
- **Internal dose depends additionally on pasture-milk pathway**

# **Possible improvements: Better dose estimates, better uncertainty information**

- **New information on residential histories of individual study cohort members**
  - **Eligibility for new govt. compensation program depends upon confirmed residential history**
- **Focus group data on customary nutrition practices among ethnic Europeans and Kazakhs**

# Current Dosimetry Status

- **External doses are reasonably well developed**
  - may be modified by new information on individual residential histories
- **Internal doses remain a work in progress**
  - Dr. Kwon's analysis used a randomized placeholder based on a deterministic dose estimate