

Clinical PET: Radiation Safety issues and PET Instrumentation Siting

The growth of clinical PET has raised questions regarding radiation safety and the siting of PET instrumentation. The introduction of positron emitters (especially F-18) with their associated high exposure rates and 511 keV photons into a facility originally designed for handling low and medium energy photon emitters creates additional radiation safety and instrumentation "background" problems. The required solution of these problems varies considerably with the complexity of the clinical PET operation.

The important aspects of radiation safety for different clinical environments are discussed. Radiation safety for personnel directly involved in the preparation, administration, and imaging of PET dosages is described. In addition, issues relating to clinical instrumentation shielding and personnel exposure in associated areas are discussed.

Objectives:

1. Provide information on radiation safety aspects of working directly with clinical PET.
2. Provide information on radiation safety for ancillary personnel.
3. Discuss the shielding issues associated with a clinical PET operation.