

AbstractID: 4447 Title: TG-43 Update

Since publication of the 2004 update to the American Association of Physicists in Medicine (AAPM) Task Group No. 43 Report (AAPM TG-43U1), several new low-energy photon-emitting brachytherapy sources have become available. Many of these sources have satisfied the AAPM prerequisites for routine clinical use as of January 10th, 2005, and are posted on the Joint AAPM/RPC Brachytherapy Seed Registry. Consequently, the AAPM has prepared this supplement to the 2004 AAPM TG-43 update. This paper presents the AAPM-approved consensus datasets for these sources, and includes the following ¹²⁵I sources: Amersham model 6733, Draximage model LS-1, Implant Sciences model 3500, IBt model 1251L, IsoAid model IAI-125A, Mentor model SL-125/SH-125, and SourceTech Medical model STM1251. The Best Medical model 2335 ¹⁰³Pd source is also included. While the methodology used to determine these datasets is identical to that published in the AAPM TG-43U1 report, additional information and discussion are presented here on some questions that arose since the publication of the TG-43U1 report. Specifically details of interpolation and extrapolation methods are described further. Despite these small changes, additions, and clarifications, the overall methodology, the procedures for developing consensus datasets and the dose calculation formalism remain the same as in the TG-43U1 report. Thus, the AAPM recommends that the consensus datasets and resultant source-specific dose-rate distributions included in this supplement be adopted by all end users for clinical treatment planning of low-energy photon-emitting brachytherapy sources. Adoption of these recommendations may result in changes to patient dose calculations, and these changes should be carefully evaluated and reviewed with the radiation oncologist prior to implementation of the current protocol.