Prescribing, Recording, and Reporting
Electron Beam Therapy
ICRU Report 71

Abstract of a Report which has been Published in June 2004 as
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The Report extends the concepts and recommendations for photons contained in ICRU Reports 50 and 62 to electron beam therapy. Reflecting the similarities between electron and photon treatments, the section on volumes in the present Report is very similar to the section on volumes in Reports 50 and 62, but evolutionary clarifications applicable to both modalities are presented. The concepts of Gross Tumor Volume (GTV), Clinical Target Volume (CTV), Planning Target Volume (PTV), Organs at Risk (OARs) and Planning Organ at Risk Volume (PRV) are recalled, or refined, and new examples are given to illustrate these concepts.

Background physical and dosimetric data necessary for understanding and correct interpretation of the recommendations are provided.

In general, in electron therapy, the beam energy and the beam delivery system are adjusted so that the maximum of the depth-dose curve on the beam axis (“peak dose”) is reached at the center (or in the central part) of the PTV. This point is selected as the ICRU Reference Point for reporting.
If the peak dose is not obtained in the central part of the PTV, the ICRU Reference Point for reporting should be selected at the center of the PTV but, in addition, the peak dose should also be reported. The peak dose is always available and directly related to the number of monitor units for reference conditions, i.e., a beam incident perpendicularly to a homogeneous medium.

Specific recommendations for reporting are provided for non-reference conditions: small and irregularly shaped beams, oblique beam incidence, and presence of heterogeneities.

One section deals with special techniques: total skin irradiation (TSI) and intra-operative radiation therapy (IORT). Recommendations are given for reporting.

As an appendix to the Report, clinical examples from several radiation oncology centers are presented and fully discussed to illustrate how to interpret the concepts and apply the recommendations for reporting electron beam therapy.