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## Dosimetry of small electron fields shaped by lead.

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### Author information

### Abstract

**Electron** radiotherapy **fields** are commonly used to treat superficial cancers. Field shaping can be achieved by placing **lead** on the patient surface to minimise the dose to surrounding areas. However, significant **dosimetry** changes under high density material edges for **electron fields** have been reported in the literature. This project evaluated the **dosimetry** of **small** dimension **electron fields shaped** with **lead** placed on the surface. Comparisons were made between circular **lead** cutouts placed on the skin and low melting point alloy cutouts placed in an applicator. Depth doses, profiles and output factors were measured using a diode detector in a water phantom. Film was also used to determine surface dose delivered when the **lead** cutouts were placed on the surface. Minimal differences were observed between the different setups for the depth dose curves, although significant differences were seen in the penumbra and the surface doses. The penumbra is smaller for the **lead** cutouts placed on the surface, however, significant dose increases at the edge of the field were observed for larger **fields** and energies; this may result in undesirable clinical effects.

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