



Photo credit: Olaf Starorypinski

# Modulated Electron Bolus Module Brochure

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*Deliver dose distribution with superior sparing of healthy tissues and distal organs-at-risk (OARs).*

Adaptiiv's Modulated Electron Bolus (MEB) software module automates the design of patient and plan-specific modulated thickness electron bolus. This solution improves the quality of electron treatment plans that would otherwise be clinically unacceptable, ensuring optimal patient treatment modality.



**“The benefit of using Adaptiiv’s MEB module has already been seen in reduced setup times, improved patient comfort, and reproducibility.** The ability to print the precise bolus required for electrons or photons is a powerful tool in an RT department.”

Ciaran Malone, Medical Physicist  
**SAINT LUKE’S RADIATION ONCOLOGY NETWORK**

# Modulated Electron Bolus (MEB)

Adaptiiv's MEB solution is used in single-beam electron treatments to modulate electron radiation therapy (MERT) dose distributions to conform to an irregular PTV surface.

Modulated thickness bolus has improved target dose conformity and provided superior sparing of healthy tissue compared to uniform thickness bolus (Figure 1 and 2).

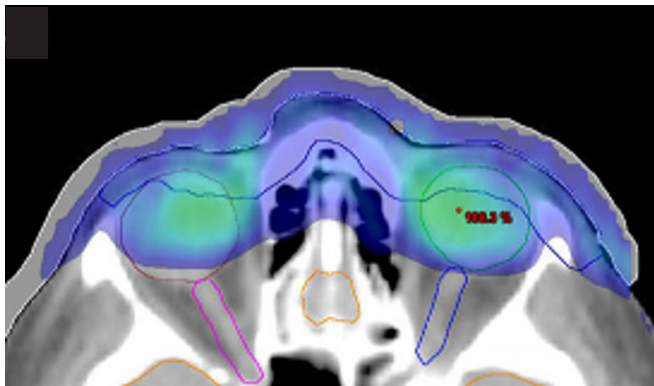


Figure 1. Uniform thickness bolus provides coverage of the PTV; however, a high dose of radiation to underlying healthy tissue and OARs is evident.

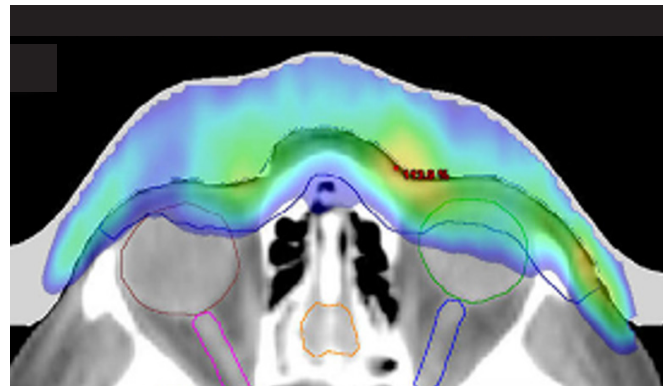


Figure 2. Adaptiiv's MEB is customized, changing the surface shape to allow for tailoring of dose distribution, effectively sparing healthy tissue and distal OARs.

## Clinical Benefits



### Access to Personalized Care

Patient-specific fit reduces air gaps and surface dose uncertainty compared to traditional sheet bolus.



### Clinical Precision

- Our patented hot spot correction algorithm allows users to adjust the balance between dose homogeneity and conformity. No other commercial solution provides this capability.
- 3D printing can produce a bolus with a spatial accuracy of 1 mm.



### Operational Efficiency

RT accessories designed in our software can be verified in the TPS, ensuring that the designed accessory matches the prescribed treatment plan before printing.