Effect of Component Misalignment on Human Tissue Temperatures Associated With Recharging Neuromodulation Devices

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A synergistic experimental and numerical investigation has provided quantitative information on the response of human tissue temperatures to misalignment of the implant and antenna of neuromodulation devices during recharging. It was found that misalignment increases tissue temperatures for all of the investigated devices. These increases ranged from 0.5 °C to 2.7 °C. Notwithstanding these increases, the lowest temperatures were attained by the Restore Ultra device for all operating conditions. The temperature levels achieved by the Precision Plus and Eon Mini devices were found to be greater than those for the Restore Ultra, but their relative rankings depend on the thermal boundary conditions and the duration of the recharging period.

Early Stage Economic Evaluation with a Small Medical Device Start-Up Company Using a Markov Model

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Medical device start-ups are increasingly being challenged to justify the economic value of their innovation at an early stage, in a manner that is acceptable to the health technology assessment (HTA) community. The experience of introducing a medical device start-up company to health economics methods is described, outlining the construction of a basic Markov model to assess the potential cost-effectiveness of their wound healing innovation for treating diabetic foot ulcer. The model provided the start-up with the means to articulate their innovation in health economic terms. A common understanding of value between innovator and assessors is essential to improving the efficiency of taking innovations though the HTA process and into adoption.