Wolf et al. from Mannheim prospectively collected data from 11 consecutive patients (10 men, mean age at DBS implantation 52.6 ± 14.0 years) with chronic DBS for dystonia (n = 7), Parkinson disease (n = 3), and essential tremor (n = 1) who underwent Implantable Pulse Generator IPG replacement switching from a CV NRC system (Activa® PC; Medtronic®) to a CC RC system (Vercise® RC; Boston Scientific®). Systematic assessments before and after IPG replacement were performed.

DBS technology switching at the time of IPG replacement due to battery depletion was at a mean of 108.5 ± 46.2 months of chronic DBS. No perioperative complications occurred. Clinical outcome was stable with overall mild improvements or deteriorations, which could be dealt with in short-term follow-up. Patients were satisfied with the new RC IPG.

This study confirms both the safety and feasibility of switching between different DBS technologies (CV to CC, NRC to RC, different manufacturers) in patients with chronic DBS. Furthermore, it shows how the management can be planned using available information from the previous DBS settings. Individual assessment is needed and might partly be related to the DBS target and the underlying disease. MR safety might be a problem with such hybrid systems [1].

1)
Wolf ME, Klockziem M, Majewski O, Schulte DM, Krauss JK, Blahak C. Implementation of New Technology in Patients with Chronic Deep Brain Stimulation: Switching from Non-Rechargeable Constant Voltage to Rechargeable Constant Current Stimulation. Stereotact Funct Neurosurg. 2020 Jan 16:1-7. doi: 10.1159/000505076. [Epub ahead of print] PubMed PMID: 31945765.