

**Purpose:** T2-weighting in fast spin echo (FSE) images is unavoidably affected by T1-mixing due to stimulated echoes. The purpose of this research is to evaluate the feasibility of using a multishot echo-planar (EPI) technique to image the prostate at 3 Tesla without an endorectal coil and to compare T2 quantification using EPI with that based off of FSE images.

**Method and Materials:** All experiments were performed on a GE Signa 3 Tesla whole body scanner with an 8-channel torso phased-array coil. T2-weighted images were acquired of a healthy volunteer at echo times (TEs) of 40, 80 and 110 ms with a multishot spin-echo EPI. Other imaging parameters were: 32cm FOV, 16 shots, TR = 2000ms, acquisition matrix = 256x512, receiver bandwidth =  $\pm 250$  kHz. FSE images were obtained of the same volunteer with TEs of 60, 120, and 180ms and these acquisition parameters: 16cm FOV, TR = 3900ms, acquisition matrix = 256x256, ETL = 16, bandwidth =  $\pm 32$ kHz. A total of eleven slices covering the entire prostate were collected using both techniques.

**Results:** The EPI images showed few artifacts and were noted to provide better T2-contrast than the FSE images. For a region-of-interest in the peripheral zone of the prostate, T2 values derived from FSE images ( $134 \pm 15$  ms) are substantially larger than those based on EPI images ( $76 \pm 1$  ms). This observation is consistent with the apparent lengthening of T2 due to T1 mixing in FSE images.

**Conclusion:** Using EPI with high receiver bandwidth, our results indicate that high quality T2-weighted images of the prostate can be obtained at 3T without an endorectal coil. T2-weighted images by EPI provide pure T2-contrast and possibly more accurate T2-determination than conventional FSE images.