

or bother subscale scores or the proportion of patients participating in sexual intercourse. Postoperatively, we observed statistically similar returns to baseline EPIC sexual function and bother subscale scores and participation in sexual intercourse across all gland weight groups at all time points. EPIC sexual domain scores and the proportions of patients participating in sexual intercourse continued to increase up to 24 months postoperatively, but no group returned to preoperative function at any sampling point.

Conclusions: Prostate size is not associated with postoperative recovery of sexual function in men undergoing minimally invasive radical prostatectomy.

### Editorial Comment

The authors investigated the association of prostate weight with recovery of sexual function after minimally invasive radical prostatectomy. Two surgeons performed 856 consecutive laparoscopic radical prostatectomies for clinically localized prostate cancer. Patients were stratified patients according on prostate size. Sexual and urinary outcomes were assessed prospectively using the Expanded Prostate Cancer Index Composite (EPIC) questionnaire. Patients who underwent nerve sparing (unilateral or bilateral) with complete preoperative EPIC data.

Possibly, higher prostate weight may present more technical challenges and adversely affect short- or long-term validated sexual HRQoL outcomes after laparoscopic prostatectomy. However, the study demonstrated all patients had similar patterns in recovery of sexual HRQoL scores regardless of prostate size after surgery, and an immediate decrease in sexual function and an increase in sexual bother followed by gradual recovery toward individual baseline score. Although, all patients exhibited an immediate decline in participation in sexual intercourse followed by a gradual return toward baseline, there was no statistical association between gland size grouping and recovery of sexual function, bother, or intercourse. Finally, the authors emphasize the importance of more comprehensive validated questionnaires, such as the EPIC versus IIEF-5.

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## IMAGING

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### **Is apparent diffusion coefficient associated with clinical risk scores for prostate cancers that are visible on 3-T MR images?**

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**Purpose:** To investigate whether apparent diffusion coefficients (ADCs) derived from diffusion-weighted (DW) magnetic resonance (MR) imaging at 3 T correlate with the clinical risk of prostate cancer in patients with tumors that are visible on MR images, with MR imaging/transrectal ultrasonography (US) fusion-guided biopsy as a reference.

**Materials and Methods:** Forty-eight consecutive patients (median age, 60 years; median serum prostate-specific antigen value, 6.3 ng/mL) who underwent DW imaging during 3-T MR imaging with an endorectal coil were included in this retrospective institutional review board-approved study, and informed consent was obtained from each patient. Patients underwent targeted MR imaging/transrectal US fusion-guided prostate biopsy. Mean ADCs of cancerous target tumors were correlated with Gleason and D'Amico clinical risk scores. The true risk group rate and predictive value of the mean ADC for classifying a tumor by its D'Amico clinical risk score was determined by using linear discriminant and receiver operating characteristic analyses.

**Results:** A significant negative correlation was found between mean ADCs of tumors in the peripheral zone and their Gleason scores ( $P = 0.003$ ; Spearman  $\rho = -0.60$ ) and D'Amico clinical risk scores ( $P < 0.0001$ ; Spearman  $\rho = -0.69$ ). ADC was found to distinguish tumors in the peripheral zone with intermediate to high clinical risk from those with low clinical risk with a correct classification rate of 0.73.

**Conclusion:** There is a significant negative correlation between ADCs and Gleason and D'Amico clinical risk scores. ADCs may therefore be useful in predicting the aggressiveness of prostate cancer. Supplemental material: <http://radiology.rsna.org/lookup/suppl/doi:10.1148/radiol.10100667/-/DC1>

### Editorial Comment

The authors showed that endorectal 3T diffusion-weighted MR imaging (D-WMRI) and the calculated apparent diffusion coefficient (ADC), can be useful in the assessment of the aggressiveness of the peripheral zone prostate cancer lesions that are visible on conventional T2-weighted images. A significant negative correlation was found between mean apparent diffusion coefficients (ADCs) of prostate cancers in the peripheral zone and their Gleason score and D'Amico clinical risk score. As we know, D-WMRI is dependent on Brownian motion of water in biologic tissues. Since prostate cancerous tissues have higher cellularity and fibrosis than the non-cancerous tissue, restriction on Brownian motion of water tissue occurs and can be quantified by measurements the ADCs values. In this manuscript it was found that the mean ADC of tumors had a significant negative correlation with tumor Gleason scores and that a significant difference was also observed between mean ADCs values of low, intermediate, and high clinical risk tumors. Thus, ADCs values obtained from D-WMRI at endorectal 3 T were significantly lower in prostate cancers with intermediate and high clinical risk scores and higher Gleason scores. According to their results, ADC maps can be used to assess the aggressiveness of a prostate cancer lesion, potentially as an adjunct to information from other clinical sources (Gleason score, PSA, lesion size, lesion stage) to help select candidates for active surveillance and to follow these patients eventually replacing biopsies.

This study has some limitations. First, they evaluated the role of D-WMRI only in patients presenting cancer of the peripheral zone. Patients with cancer in the transition zone were not included. Second, the authors used a home made system to quantify ADCs values of prostate cancer, thus comparison with similar studies that uses commercially available ADCs measurement system is not possible. Third, they compared only findings observed on conventional T2-weighted image and DWI. It has been shown that prostate cancer assessment by MRI is better accomplished with the combination of results of multiparametric studies (conventional T2-weighted images, spectroscopy, diffusion-weighted images and contrast perfusion studies).

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