Is it time to abandon the digital rectal examination? Lessons from the PLCO Cancer Screening Trial and peer-reviewed literature.

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**Abstract**

**OBJECTIVE:** In 2012 the US Preventive Services Task Force released recommendations against prostate specific antigen (PSA) based screening for prostate cancer, but did not fully address screening via digital rectal exam (DRE). As such, many practitioners continue to perform DRE in attempts to identify men with clinically significant prostate cancer (CSPC). This study seeks to determine the value of DRE in detecting CSPC in the era of PSA-based screening.

**METHODS:** Data from the Prostate, Lung, Colorectal, and Ovarian (PLCO) Screening Trial, a nationwide population-based study evaluating cancer screening programs and their impact on cancer mortality, was analyzed for PSA, DRE, and cancer status. In the screening arm of the PLCO, 38,340 men received annual PSA and DRE examinations for the first three years. Those with an abnormal test result were referred to their individual care provider for biopsy. The ability of DRE to detect CSPC, defined as intermediate risk or higher based on National Comprehensive Cancer Network guidelines and age ≤ 75, was evaluated in the context of both normal and abnormal PSA.

**RESULTS:** 5,064 men had abnormal DRE in the setting of normal PSA, of which 99 (2%) were diagnosed with CSPC. When both PSA and DRE were abnormal, 218 (20%) participants were diagnosed with CSPC (RR = 2.06 [1.78-2.39] versus abnormal PSA alone).

**CONCLUSIONS:** DRE screening in the setting of normal PSA captured an additional 2% of men with CSPC. This incremental gain suggests that routine DRE screening subjects a large number of men to invasive, potentially uncomfortable examinations for relatively minimal gain

**Key Limitations:** Our conclusions are based on data derived from the PLCO study which has been criticized on the basis of inconsistent biopsies following positive screening tests, lack of end of study biopsies to determine population disease burden, and low numbers of black men.

**KEYWORDS:** Colorectal; Digital rectal examination; Lung; Prostate; and Ovarian (PLCO) Screening Trial; prostate cancer; prostate cancer screening

PMID: 27264113 [PubMed - as supplied by publisher]