Interactive decision support system ups breast CA detection

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Image courtesy of Blausen Medical

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(HealthDay)—Compared with currently used computer-aided detection (CAD) prompts, use of an interactive CAD system, in which CAD marks and their associated suspiciousness scores remain hidden unless queried by a reader, improves the detection of malignant masses using digital mammography, according to research published in the January issue of *Radiology*.

Rianne Hupse, of the Radboud University Nijmegen Medical Centre in the Netherlands, and colleagues conducted a retrospective observer study involving nine certified screening radiologists and three residents trained in breast imaging who read 100 normal studies and 100 studies showing

either detected masses, false-positives, or false-negatives. To compare the effectiveness of traditional CAD prompts and an interactive CAD system for detection of malignant masses on full-field digital mammograms, the studies were read twice, once with prompts (findings recorded before and after activation) and once with interactive CAD.

The researchers found that, with unaided reading, the average partial area under the location receiver operating characteristic (ROC) curve was 0.57. The ROC curve was unaffected by CAD prompts, but with the interactive CAD system, the average partial area under the ROC curve increased to 0.62. There was a significant improvement in reader performance with interactive CAD versus unaided reading.

"In conclusion, the interactive use of the results from CAD as decision support for detection of malignant masses on mammograms may be more effective than the current use of CAD, which is aimed at prevention of perceptual oversights," the authors write.

Several authors disclosed financial ties to the medical technology industry.

 More information: Abstract
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