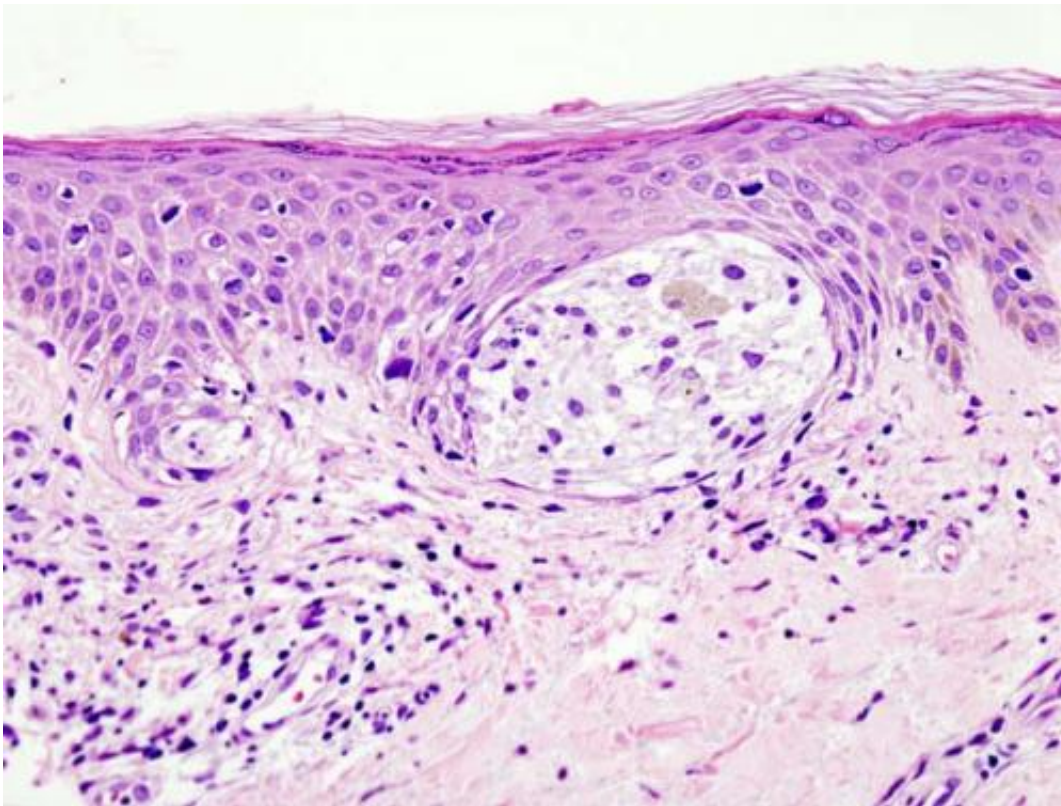


# Computer program using skin images could improve early detection of melanoma

October 1 2015, by Jennifer Yates

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Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

A computer program easily run on a tablet or a smartphone that compares a spot on a patient's skin to images of both benign and malignant lesions may be a useful, noninvasive tool for physicians when deciding when to do a biopsy for skin cancer, according to research from

the University of Pittsburgh that was published online this month in the *Journal of the American Academy of Dermatology*.

About 76,000 people in the U.S. are diagnosed every year with melanoma, the most dangerous form of [skin cancer](#) that, if not detected early, can spread to other parts of the body. Nearly 10,000 people die every year in the U.S. from melanoma.

"We know it's important to detect melanoma early, and we wanted to design a tool that would make it easier for a physician to decide the severity of a lesion based on what we've learned from the many cases we've already seen. This is truly an evidence-based approach to helping physicians," said Laura Korb Ferris, M.D., Ph.D., director of Clinical Trials and associate professor of Dermatology.

The program was developed as a partnership between Pitt, UPMC and Carnegie Mellon University researchers and was designed to classify lesions as malignant or benign based on 54 computed features for lesions.

To evaluate the program, researchers calculated severity scores for 173 dermoscopic images of [skin lesions](#) that had already been diagnosed. Of the total, 39 were melanomas, 14 were non-melanoma skin cancers and 120 were [benign lesions](#). Separately, the images were also evaluated by 30 dermatologists.

The computer program detected melanoma correctly in 97 percent of the cases, and specificity was 44 percent. In comparison to the evaluation by clinicians, the detection of melanoma by this tool was slightly higher. The specificity of this tool, or ability to correctly identify a harmless lesion as benign, was just slightly lower than that of the clinicians.

"Nothing is better than a board-certified dermatologist evaluating your

skin, but this study indicates that a [computer program](#) that can be run on a simple device such as a tablet or smartphone could be a valuable tool for physicians when deciding what to do with a suspicious mark on the [skin](#)," Dr. Ferris said.

Provided by University of Pittsburgh

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