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## AHA: Skin Test Identifies Likelihood of Subclinical Carotid Stenosis

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By Peggy Peck, Executive Editor, MedPage Today

Reviewed by [Zalman S. Agus, MD; Emeritus Professor at the University of Pennsylvania School of Medicine.](#)  
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ORLANDO, Nov. 8 -- An investigational test that measures cholesterol in the skin can accurately predict subclinical atherosclerosis, researchers said here.

A 10-unit increase in skin cholesterol measured using the blotter-like skin test was associated with a 12% increase in the odds of having increased carotid intima-media thickness ( $P=0.006$ ) and a 15% increase in presence of carotid plaque ( $P=0.002$ ), reported James H. Stein, M.D., of the University of Wisconsin, at the American Heart Association meeting.

Dr. Stein and colleagues at six academic centers enrolled 565 healthy adult volunteers in the PASA (Predictor of Advanced Subclinical Atherosclerosis) trial. They all underwent B-mode ultrasonography of the carotid to measure intima-media thickness.

### Action Points

- Explain to interested patients that the cholesterol skin test is not yet approved for use in the United States.
- Note that this study was published as an abstract and presented at a conference. The data and conclusions should be considered to be preliminary until published in a peer-reviewed publication.

The mean Framingham 10-year cardiovascular risk was  $8.4 \pm 7.2\%$  for participants (7% is considered to be low-risk).

A skin cholesterol score of more than 110 units doubled the risk for increased carotid intima-media thickness (HR: 2.19, 95% CI: 1.25 to 3.85,  $P=0.006$ ) and was associated with a 2.89 HR for the presence of carotid plaque (95% CI: 1.61 to 5.19,  $P=0.001$ ), he said.

In an interview, Dr. Stein said the skin test has an edge over other tests for subclinical atherosclerosis such as ankle-brachial index or dual Doppler ultrasound measurement of carotid intima-media thickness. "Guidelines recommend ankle-brachial index measurement of at-risk patients, but few physicians actually have the time to do ankle-brachials, and ultrasound requires a skilled sonographer," he said.

Testing the skin, he said, is much simpler because it requires only the placement of a foam template on the skin under the person's thumb. "We then apply a detector that binds to cholesterol in the outer layer of the skin and then an indicator is applied to the template, which creates a chemical reaction -- a change in hue that we measure with a spectrometer," he said. The change in

hue correlates with the amount of cholesterol.

"So by this technique we can very accurately and very quickly measure the amount of cholesterol in the skin, an amount that correlates with carotid intima-media thickness and plaque burden in the carotids," he said.

He said the association was found in participants across all ranges of cardiovascular risk, particularly in those at low and intermediate risk on the basis of traditional cardiovascular risk factors.

The study was funded by PreMD, Inc., which has developed the skin test and is seeking FDA approval for it. Dr. Stein said he received research funding from PreMD, Inc., and has served as a consultant to the company.

**Primary source:** American Heart Association 2007 Scientific Sessions

**Source reference:**

Stein J, et al "Increased Skin Cholesterol Identifies Individuals at Increased Cardiovascular Risk: The Predictor of Advanced Subclinical Atherosclerosis (PASA) Study" AHA Meeting 2007; Abstract 3557.

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