When moles go bad: Penn scientists identify commonly lost protein that protects against melanoma

Supermodel Cindy Crawford and her trademark mole. Penn researchers have gained insight into why moles stop growing and why some turn cancerous. (AP Photo/Alexander Zemlianichenko)

BY JESSICA MCDONALD

The vast majority of moles — whether embraced as a beauty mark or disdained as a blemish — are harmless. But on occasion, they can be deadly.

New findings from the University of Pennsylvania that help explain why only some moles make the switch to cancer offer a better way to distinguish the troublesome growths.
Scientists have known for a while why most moles start growing: a bit of sun damage causes a gene called BRAF to mutate.

"That's like a gas pedal that makes the cells divide," said Penn dermatologist Todd Ridky, a senior author of the new study published in the journal Cancer Discover.

What was less clear is why nearly all moles stop growing once they're about the size of a pencil eraser.

Using a new human-based model for melanoma, Ridky's team found, in large measure, that's because a protein called p15 steps in. The real problem begins if p15 is lost and that brake is removed. As a result, the absence of the protein could indicate melanoma.

"Every single benign mole we looked at had p15," said Ridky. "Whereas p15 protein in melanomas was sometimes there, but very often absent."

The test is not yet available in clinics, but could be ready within a few years.