Dermatologists may be too aggressive in diagnosing early melanoma, according to Mayo Clinic investigators who recommend new guidelines to lessen removal of healthy skin tissue.

"Many times a pathologist would see an increased number of cells and not be sure if it was a very early melanoma or just sun-damaged skin," said Dr. Ali Hendi, a dermatologic surgeon and lead investigator of the study, done at Mayo's Jacksonville, Fla., clinic. "The uncertainty was: Where did the normal skin end and the melanoma or cancer begin? This study was designed to find the missing link."

Skin cancer accounts for more than 50 percent of all cancers. Melanoma is the deadliest, accounting for just 4 percent of cases but the majority of skin cancer deaths, according to the American Cancer Society. An estimated 62,190 new melanoma diagnoses and 7,910 deaths will occur in the United States this year. Melanoma is almost always curable in its early stages, but is also likely to spread. It originates in melanocytes, the cells that produce melanin, which colors skin, hair and eyes.

In the study published in this month's Journal of the Archives of Dermatology, tissue samples were obtained from 132 randomly selected white patients undergoing Mohs surgery, which involves incremental removal of diseased tissue, taking the least amount of healthy tissue possible. Hendi said the tissue was studied under a high-powered microscope, allowing surgeons to distinguish between diseased and healthy skin.

Investigators found that noncancerous, sun-exposed skin contains more melanocytes than does undamaged skin. The researchers say their findings are significant because many surgeons remove possibly healthy tissue until they reach undamaged cells with "normal" melanocyte distribution. The research suggests a more precise way to measure melanocytes. "In many cases, surgeons can stop removing tissue much sooner, which will result in less trauma to the skin," Hendi said.

Dr. Vincent Vinciguerra, chief of the Don Monti Division of Hematology/Oncology at North Shore University Hospital/Manhasset, welcomed the finding, noting that anything "we can do to properly diagnose and treat this disease type ... and give us an accurate diagnosis is important. You want to know you are not missing the diagnosis and you want to be sure you are not over-treating."

But Dr. Colette Pameijer, assistant professor of surgery at Stony Brook University Hospital, questioned the methodology. "You have a lot of selection bias here," she said. "They describe those with recent intense sun exposure, but we know that the damaging effects of sun is cumulative over each individual's lifetime." The weight of scientific evidence favors current standards of margins of wide excisions around melanomas, which already have been decreasing over the past 40 years, she said.

"The thing that we would not want to do is miss a melanoma," said Dr. Howard L. Kaufman, chief of the Surgical Oncology Division at the Columbia University Medical Center. "In the earliest stages, it is nearly 100 percent curable with complete surgical removal. However, once it has spread, the chance for a cure is significantly reduced. So, before we say we should not be as aggressive with some of these lesions, we need to be sure they are not true melanoma."

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