Val Lambros, M.D., F.A.C.S. has practiced plastic surgery in Orange County, CA since 1984. A frequent speaker at local regional and national meetings, Dr. Lambros has challenged traditional plastic surgery assumptions about many aspects of facial aging and facial surgery. Though the face is Dr. Lambros' main research interest he has done body contouring since its inception in the U.S. and has designed several widely used liposuction instruments.

Long-standing assumptions about the facial aging process are being examined in a study using three-dimensional medical photography to separate fact from fiction regarding changes in appearance over time.

"In examining aging faces, there are a lot of illusions that happen, lots of things that look like other things," said Val Lambros, MD, a California plastic surgeon and researcher for the aging-face study. To discover what actually occurs during facial aging, the multi-year study is using the capability of VECTRA 3D photography to record and actually measure the gradual facial changes that occur during extended time periods.

"Everybody gets old and their faces change, and there ought to be some notion of what actually happens," said Dr. Lambros, a noted medical author and speaker on facial procedures and related issues. "That's really what this whole project is about. People make certain assumptions about how the face ages based on what they see at a particular point in time, and based on certain maneuvers that are made.

"People look in the mirror, pull their cheeks back, and say, 'I used to look like this.' Then they try to chase that surgically," Dr. Lambros said. "But it's really hard to get an operation to do what your fingers do, and people can look very strange as a result. All you have to do is look around to see a lot of that."

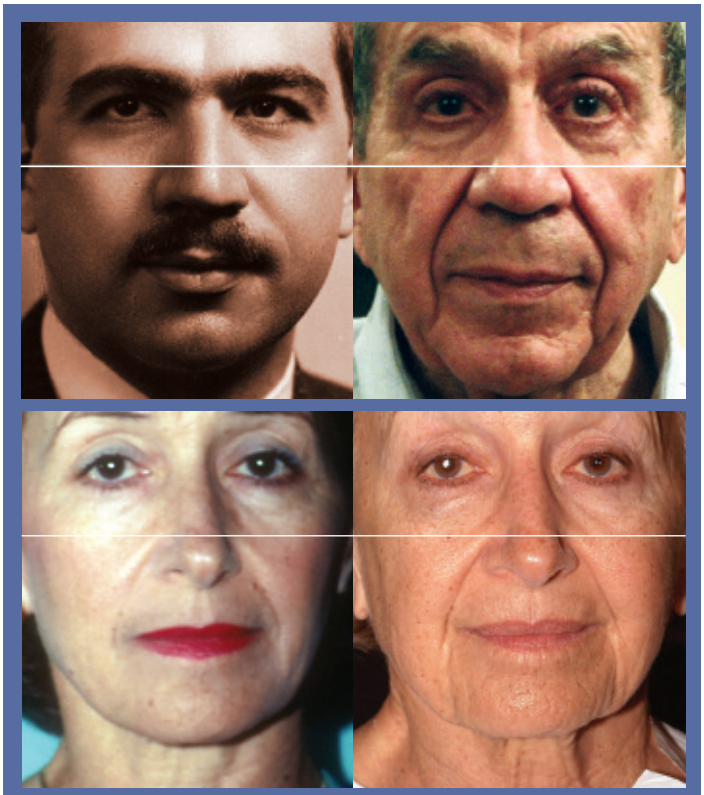
With 3D photography and analysis, "…we'll be able to understand facial aging better. Knowledge is power," Dr. Lambros said. "What a 3D camera does is capture all the points on the surface of the face, and the x, y, and z axes, so you can see depth as well as side-by-side and up and down.

"What that lets you do, once you have all those pixels of the surface, is to rotate the surface around, do measurements on it, and all of a sudden you're talking about something that's more accurate and reproducible than with conventional photography," Dr. Lambros said.

For about twenty years Dr. Lambros has had patients in his medical practice bring in old photographs as references for use in their treatment planning. "About six or seven years ago I began matching those old photographs with images that I take in practice, which is exceedingly difficult to do to get the positioning exactly right. You have to take about fifteen or twenty pictures to get one to exactly match on a simple forward view. Off-axis views are much more difficult to match."

Those photographic comparisons led to a widely publicized study presented by Dr. Lambros at the American Society of Plastic Surgeons (ASPS) conference in 2004. The results of matching the traditional 2D photographs indicated that facial aging was primarily due to fat loss and skin changes rather than the effects of gravity over time, as had been widely assumed.

However, in addition to the difficulty of matching views over time, traditional photography had other limitations that led Dr. Lambros to initiate his long-term research on facial aging with the more precise 3D photography and analysis.



Comparison photos show changes in facial features that occur over time. Measurements to a reference line indicate that while skin quality changes, the features themselves do not move.

"When I do traditional 2D photographs, though it's not entirely subjective, still it's very hard to do measurements because you don't unequivocally know what you're measuring—you're just measuring pixels on images you know are the same size,"
Dr. Lambros said.

"But with the VECTRA 3D, basically you just put somebody in front of the camera and go click. Then you can actually derive true distance or volume. You can measure depth, forward and back, you can measure the surface, you can measure a straight-line distance between two points. You can match position of two images over time, and do it very precisely. And then you can overlay one on top of another and actually see what's moving forward and what's moving backwards, even at very subtle levels. In addition you can use the 3-D functionality of the camera to match to 2-D photographs without having to take huge numbers of images and slog through them trying to find a match. It's very wonderful."

Dr. Lambros plans to add continuously to the database of subjects participating in the study. "We're going to follow them for five, ten, fifteen, twenty years—as long as I'm around or there's a successor. There will probably be four or five Ph.D. theses'-worth of material compiled during the study. We'll have real information, not just assumptions."

VECTRA 3D is manufactured by Canfield Imaging Systems of Fairfield, New Jersey. Dr. Lambros has no financial interest in the company.

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