

Toenails may tell: Towler develops new test for osteoporosis

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Toenail clippings may soon tell patients their risk of osteoporosis-related fractures. Research done by Mark Towler, now an Inamori Professor of Biomedical Materials Engineering Science at the Inamori School of Engineering, Alfred University, led to the formation of Crescent Diagnostics, a Dublin, Ireland-based company that hopes to launch the new test within a year, as well as expand into the United States market in the next 18 months, as soon as the test gains approval from the U.S. Food and Drug Administration. While at the University of Limerick, Towler led the research team that developed the test that predicts risk fracture due to bone loss associated with osteoporosis. Towler explained "The test uses Raman Spectroscopy to determine fracture risk. A laser beam, similar to the one used to power a CD player, is aimed at a toenail clipping from a subject and the information recorded from this laser evaluates the presence of certain proteins in the nail clipping. The presence and extent of these proteins gives a measure of the quality of the protein phase of the subject's bones." It will be the first test that can determine this risk without subjecting the patient to an x-ray or an ultrasound scan. Towler was the co-founder of Crescent Diagnostics in 2004. Ernest Poku, chief executive officer and joint co-founder of Crescent Diagnostics with Towler, told the Irish Examiner newspaper that there is a "massive, unmet need for more convenient, accurate and affordable testing" to determine a patient's risk of osteoporosis-related fractures. He said current methods of testing are expensive and have "limited predictive ability." The advantage of the testing process developed by Crescent is that it can be used to pre-screen patients who do not have symptoms; osteoporosis is now estimated to affect 200 million people, mostly women, world-wide. Using a low-cost, accurate predictive test that will enable women to prevent osteoporosis, rather than treat it after they have been diagnosed, could achieve huge cost savings in medical care, Poku said in his interview.