

One current method for the diagnosis of skin cancer is through the use of a confocal microscope to zoom into the region of suspect to the nanometer scale and take images, from which a physician can then determine whether or not the cells are cancerous. The problem that the physician faces in the procedure is that the field of view of the confocal microscope is about 2 inches while the scale of the zoom ranges into the nanometers; this creates a very large area for the physician to observe through the procedure. This device was designed with the intention of marking the area of interest with a fluorescent dye visible under the microscope so that the physician can zoom directly to the region of interest. To build the device a grid with 4 millimeter range of motion was modified to fit a syringe holding the dye and to only allow the needle to penetrate the epidermis, no deeper as this could affect the lesion. This apparatus was attached to a swivel indicator stand to ensure that the device could be accurately held in place once the physician has positioned the device where he needs it. The device was tested by measuring the accuracy of the dye placement, measured by distance of dye from edge of the lesion, and the size of the stain the dye left, measured in nanometers. It was determined that the dye placement should be no more than 2 mm from edge of the lesion and that the size of the stain should be smaller than the lesion. The accuracy of the dye placement proved easiest to control. Overall the device functions well for its purpose and significantly reduces the time of the procedure.