

## NSHRF PROJECT FACT SHEET

### **Melanoma: Under the microscope**

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Dr. Richard Langley's research may change the diagnosis of skin cancer B the most prevalent form of cancer in North America. Melanoma is the most deadly form of skin cancer, and Nova Scotia has one of the highest rates in Canada. Currently, the only definitive way to diagnose melanoma is through surgically removing part of the growth for testing. Dr. Langley's lab has the first and only confocal scanning laser microscope (CSLM) in Canada, thanks in part to financial support from the Nova Scotia Health Research Foundation. The microscope permits instantaneous, high-resolution images of intact human skin at a cellular level without having to resort to surgery. The use of CSLM imaging in dermatology clinics may lead to earlier diagnosis of malignant lesions and avoid the need for surgery.

Melanoma is curable when detected at the earliest stages, but prognosis is poor if found in its later phases. Physician accuracy is less than perfect in the diagnosis of cutaneous melanoma, says Dr. Langley, who used the advanced microscope in a study involving 134 patients with benign and malignant skin lesions. High-resolution images of lesions and control skin were obtained after taking the patient's clinical history and using conventional photography to capture the lesion on film. The CSLM images were diagnosed and later compared to the results of conventional biopsies, where they correlated well. Dr. Langley found that confocal scanning laser microscopy is capable of identifying distinct cellular features of benign and malignant pigmented skin lesions and can be used before surgery to discriminate between them.

CSLM may improve the diagnostic accuracy in skin cancer and lead to earlier diagnosis, thus ultimately improving life expectancies for those with malignant melanoma. It has the potential to reduce the number of unnecessary surgeries and biopsies and save health care systems a considerable amount of money; as well, people can be spared the discomfort and possible complications from needless operations. By reducing unnecessary surgery, CSLM can also reduce the time someone may have to wait for surgery to remove a malignant lesion. In addition, CSLM services could be added to an existing telemedicine network to extend medical care to small communities. Dr. Langley recommends further research to explore the full benefits of CSLM.

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