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Dr. Abdel-Rahman's research focuses on several aspects of ocular melanoma one of them is identifying patients and families at high risk for ocular melanoma and other cancers. Early diagnosis of any cancer is the best way to fight it and it could dramatically change its outcome. Since knowledge is power, identifying individuals at higher risk for ocular melanoma will allow closer monitoring through frequent eye examination that can pick up tumor very early and allow early. Small ocular melanomas have good outcome for preserving the vision and are less likely to spread outside the eye. If you or your loved one has an ocular melanoma and one of these features (very young age at diagnosis, family history of ocular melanoma, personal history of other cancers, family history of mesothelioma, lung cancer in a non-smoker, skin melanoma or kidney cancer) please alert your physician so he or she could take proper steps including referring you for genetic testing and counseling.

Another aspect of Dr. Abdel-Rahman's research is to identify new non-toxic therapies for suppression of the spread of the tumor cells beyond the eye. With the recent advances in the diagnosis of ocular melanoma we can identify through testing the tumor patients at high risk for having aggressive disease that can spread. Unfortunately, there is no available effective, non-toxic therapy for these patients. Dr. Abdel-Rahman in collaboration with investigators at the College of Pharmacy is currently working on identifying therapies that can suppress the growth of tumor cells that have spread beyond the eye. One of the approaches that they follow is through studying medicinal herbs. His group has identified several herbs that can selectively kill ocular melanoma tumor cells in tissue culture while sparing normal cells. They are currently in the process of carrying out animal studies to test the safety and efficiency of some of the compounds that they identified. The ultimate goal is to obtain a safe, effective, and non-toxic therapy that can prevent the growth of tumor cells with minimal effect on the patient quality of life.

Dr. Abdel-Rahman is also working on identifying biomarkers from peripheral blood that can detect patients with high risk for aggressive disease from a simple blood draw. Currently, biomarkers are only available on tumor tissue and require invasive biopsy procedure of the eye.