SHAMA: Strabismus Horner Anisocoria Miosis Application

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The purpose of this project was to produce a mobile application which is accessible to the whole population. The application will detect certain measurements in the eye: pupil center and size, the position of the light reflex, nasal and temporal limbal spots, inner and outer canthus, and lower and upper eyelids. These can indicate whether visiting an ophthalmologist for early treatment is warranted for four conditions, strabismus, Anisocoria, Horner Syndrome, and Abnormal Miosis. Patients will receive reports, which can be printed, to show the measurements (in mm) which will indicate if the condition(s) is/ are present. Strabismus is a visual problem which is marked by the eyes not being aligned properly and pointing to different directions. When strabismus is not diagnosed early or not diagnosed at all it develops into a loss of depth perception and amblyopia. Anisocoria is a condition which is marked by an abnormal difference in pupil size and affects 20 percent of the population. Anisocoria is a dangerous congenital condition which, if not detected early, develops symptoms which include involuntary eye movement, eye pain, and headache. Horner Syndrome is a combination of signs and symptoms caused by the disruption in the nerve pathway from the brain to the face and eye on one side of the body, which looks like Anisocoria with ptosis. Abnormal Miosis is a condition which is marked by the pupil size being less than 2mm which is an indication that the eyes are not working normally. Causes are diverse, some dangerous and some benign but early detection can help identify the cause. Diagnosis of conditions or lack thereof proved accurate with the aid of the Ocular Screen Box which makes the SHAMA application a viable tool for early detection of the conditions mentioned.

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