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**Impact of Artificial/Machine Vision in Blind Patients**

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**Purpose:**

While the Argus II artificial/machine vision implant has provided a potential cure of blindness, it is challenging to assess this machine vision using standard measurements (Figure 1). Therefore, in order to assess the impact this vision has made on our patients’ blind lives, we used a visual function questionnaire (VFQ) to analyze patients’ quality of life pre and post Argus II implantation.

**Methods:**

A 25 question National Eye Institute VFQ was administered to 17 patients with mean age of 57 who had received the Argus II implant and completed training in order to measure the impact of machine vision on overall health, including social wellbeing and dependence of activities of daily living. ANOVA analysis with Bonferroni adjusted p-values compared the graded survey results from pre and post Argus II implantation.

**Results:**

All three board categories general health and vision (p<0.001), difficulties with activities (p<0.001), and response to vision problems (p<0.001) were significantly improved after Argus II implantation. This included improved perception of vision (p=0.0005), ability to find objects (p=0.002), function around stairs/curbs (p=0.002), and match clothes (p<0.001). Patients also stated they could accomplish more tasks (p<0.001) and were less dependent on others (p<0.001). Our supplemental questions showed subjective improvement in general vision (p=0.01), outdoor activities (p=0.03) and less limitation in their activities (p=0.01). Eye pain, discomfort, worry about eyesight, frustration and embarrassment questions were not significantly different in either group (Table 1).

**Conclusions:**

The Argus II system is not an exact replacement for natural sight but patients can recognize shapes and perceive the contrast between light and dark objects. It’s almost like having a sixth sense, and then patients have to train how to use it. Patients’ overall quality of blind life is significantly improved after Argus II implantation. These include activities of daily living and social wellbeing, such as the ability to match clothes. All three broad categories of the VFQ-25 were improved as well as several individual factors. Importantly, there were also no negative impacts on quality of life.