

## Appendix: Results from the First 120 People Treated

Below is data for patients treated in our office with microcurrent stimulation, recommended supplements, and other appropriate support to maximize the adult stem cell system function to promote regeneration and repair. Patients presented with various diagnoses. Most patients with macular degeneration show variation in the time of onset and the progression of the disease between their two eyes. Many of the patients who have the wet or exudative form of the disease have only had problems with leaking or bleeding in one eye and not the other while some have shown evidence for leaking or bleeding in both eyes. Two patients were blind in one eye for reasons entirely unrelated to their macular degeneration. For these and other reasons, we present the data in terms of the number of *eyes* treated. This gives a better sense of the differential response between those eyes with the exudative form of macular degeneration and the response of those eyes with the non-exudative form of macular degeneration.

Visual acuity testing, if carefully done, is a reasonable and repeatable measurement of one aspect of a person's vision. In any given person however there can be variations in visual acuity on a day to day basis due to such things as the overall state of their health, presence or absence of upper respiratory infections, quality and extent of the previous night's sleep, level of stress, etc. These variations however are seldom more than one line of change on a visual acuity chart. Because of these variations, and in part to allow this data to correspond to data reported by other practitioners who are using microcurrent stimulation for the treatment of retinal disease, we have chosen to consider two lines of improvement or change on a visual acuity chart to be necessary to call a result clinically significant. If the person's vision is improved by two lines or more as measured in visual acuity testing, this is probably significant, and not due to random fluctuation.

### Results

Of all 120 patients treated, 83% (101/120) showed improvement of greater than or equal to two lines of visual acuity in one or both eyes. If we include those who had at least one line of improvement in visual acuity, then 93%

showed improvement.

There were 11 patients (11 of 120) with Stargardt's Disease who were treated and of these all 11 or 100% showed an improvement of greater than or equal to two lines of visual improvement in one or both eyes. There was one patient (1 of 120) who had the diagnosis of X-linked Retinoschisis and they also showed two lines of improvement on visual acuity testing in both eyes.

If we take the 109 patients with aged-related macular degeneration (ARMD) and break them down by diagnosis type into exudative (wet) and non-exudative (dry) we find that of the patients with wet ARMD 88% (43/49) showed an improvement of two lines or greater on visual acuity testing and of those with dry ARMD, 77% (46/60) showed improvement of two lines or more on visual acuity testing.

## Results by Eyes

By doing some simple arithmetic on the data, we find that of the eyes treated, the total for all eyes with non-exudative disease was 36% with an improvement of three lines or greater on a visual acuity test and for those with exudative disease, 53% showed improvement of three lines or greater on visual acuity testing following treatment. The patients who had greater than or equal to four lines of improvement on visual acuity testing was also quite gratifying with 22% improving with the dry form of the disease and 32% improving with the wet form of the disease.

In the limited data reported in conferences by others doing this work (Halloran 1997, Jarding 1997) there had been evidence for significant slowing and stopping of the progression of disease in those treated and followed over many years. If there was improvement as the result of treatment, this improvement was maintained, and even where there was no significant improvement, the vision stabilized and the stabilization persisted as long as treatment was continued. I have not been treating people long enough to comment on this from my own data, but as the data reported above is similar and in some cases better than the results reported by others, I would expect that as I continue to follow these patients, these results will remain stable.

Of all the patients and all the eyes treated, there were 7 eyes that showed a worsening of one line as tested by visual acuity testing, or 3% of the eyes. There were 3 eyes (in 3 patients) that showed a worsening of two lines of visual acuity which is possibly significant but representing only 1% of the eyes treated. No one had worsening of greater than two lines as determined by visual acuity testing. In all of these patients who have shown worsening, the data that I have comes from the first weeks of treatment. Some of these patients have since reported some improvement, but these patients live distant from the office and we have not been able to do formal follow up testing. There was no evidence of retinal hemorrhage in any of these patients who showed worsening. We would have preferred to find when we analyzed the data that there were no patients who showed any worsening but we are still satisfied that the procedure is safe. Data from some of the research on the effects of supplements on ARMD give us an idea of the natural history of the progression of this disease in populations of people, and this data suggests that the percentage of people showing worsening of their vision in a population such as the one we studied would be far higher than 3%. The data also tells us that the percentage of people we are seeing with improvements is a result of their treatments with microcurrent stimulation therapy. As we continue with treatments, continued efforts are being made to try and understand why some people respond better than others and we will continue to strive to improve the protocols and techniques.

***The Data is presented in tables on the pages that follow:***

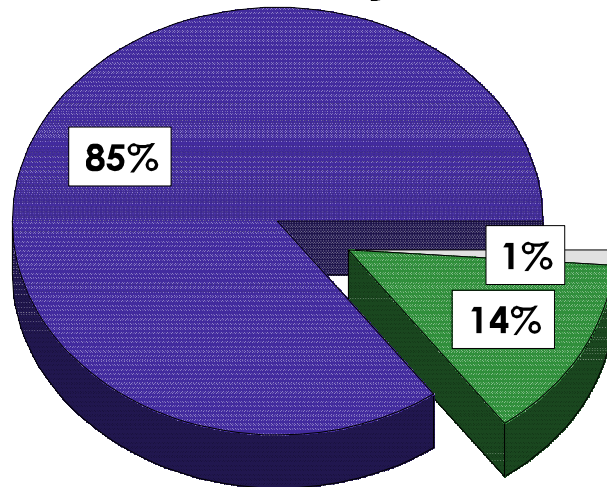
# Data for All Eyes Treated

## **Data for All Eyes Treated**

### **Improvement on Visual Acuity Testing**

	Raw Data	Percent
One Line Better	47/238	20%
Two Lines Better	55/238	23%
Three Lines Better	39/238	16%
Four or More Lines Better	60/238	25%
No Change	34/238	14%
Two Lines Worsening	3/238	1%

## **Data for All Eyes Treated**



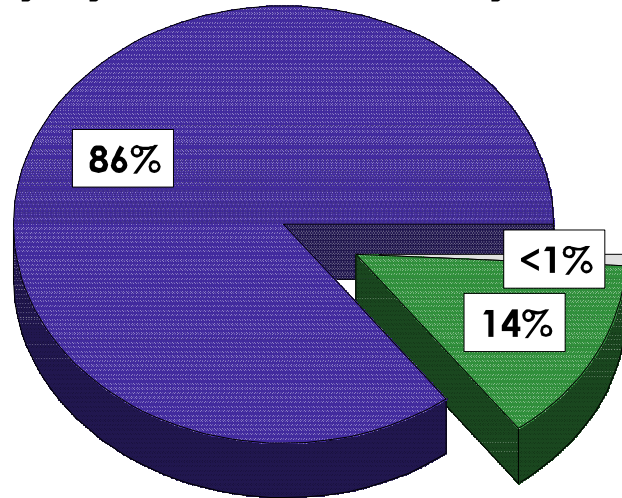
# Data for Total Dry Eyes Treated

## **Dry Eyes - Data for All Eyes Treated**

### **Improvement on Visual Acuity Testing**

	Raw Data	Percent
One Line Better	43/167	26%
Two Lines Better	39/167	23%
Three Lines Better	24/167	14%
Four or More Lines Better	37/167	22%
No Change	23/167	14%
Two Lines Worsening	1/167	<1%

## **Dry Eyes - Data for All Eyes Treated**

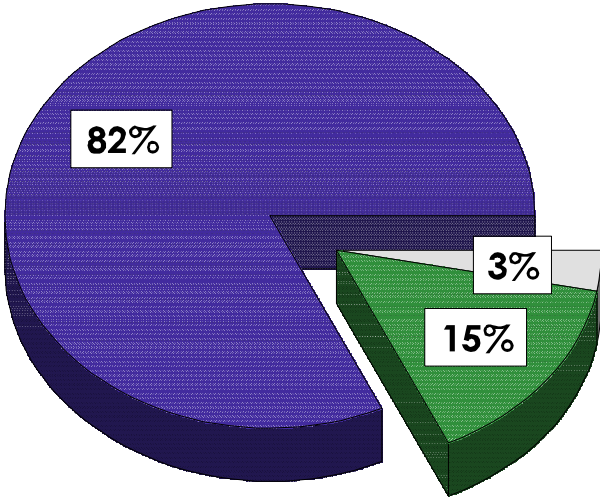


# Data for Total Wet Eyes Treated

## Wet Eyes - Data for All Eyes Treated Improvement on Visual Acuity Testing

	Raw Data	Percent
One Line Better	4/71	6%
Two Lines Better	16/71	23%
Three Lines Better	15/71	21%
Four or More Lines Better	23/71	32%
No Change	11/71	15%
Two Lines Worsening	2/71	3%

## Wet Eyes - Data for All Eyes Treated



■ Improved      ■ No Change  
■ Attenuated

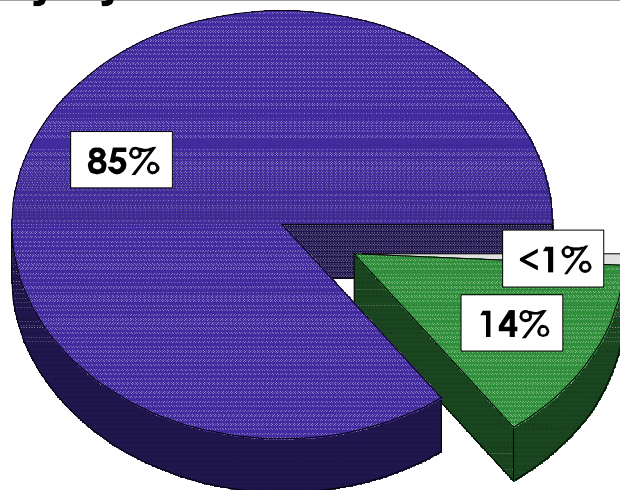
# Data for Dry Eyes with ARMD

## Dry Eyes - Data for ARMD Patients

### Improvement on Visual Acuity Testing

	Raw Data	Percent
One Line Better	40/145	28%
Two Lines Better	30/145	21%
Three Lines Better	21/145	14%
Four or More Lines Better	32/145	22%
No Change	21/145	14%
Two Lines Worsening	1/145	<1%

## Dry Eyes - Data for ARMD Patients



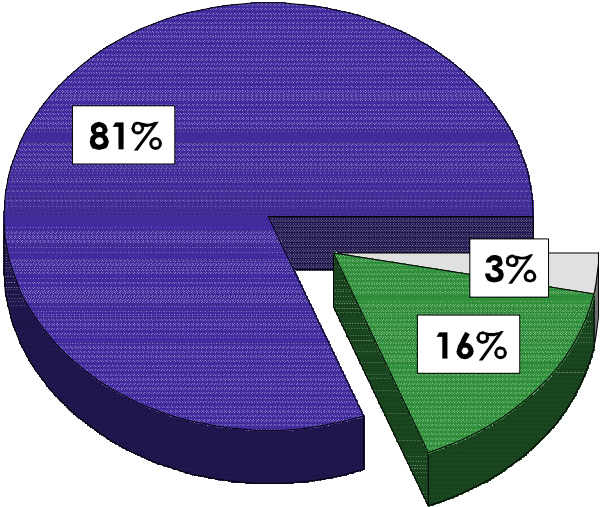
# Data for Wet Eyes with ARMD

## Wet Eyes - Data for ARMD Patients

### Improvement on Visual Acuity Testing

	Raw Data	Percent
One Line Better	3/69	4%
Two Lines Better	16/69	23%
Three Lines Better	15/69	22%
Four or More Lines Better	22/69	32%
No Change	11/69	16%
Two Lines Worsening	2/69	3%

## Wet Eyes - Data for ARMD Patients





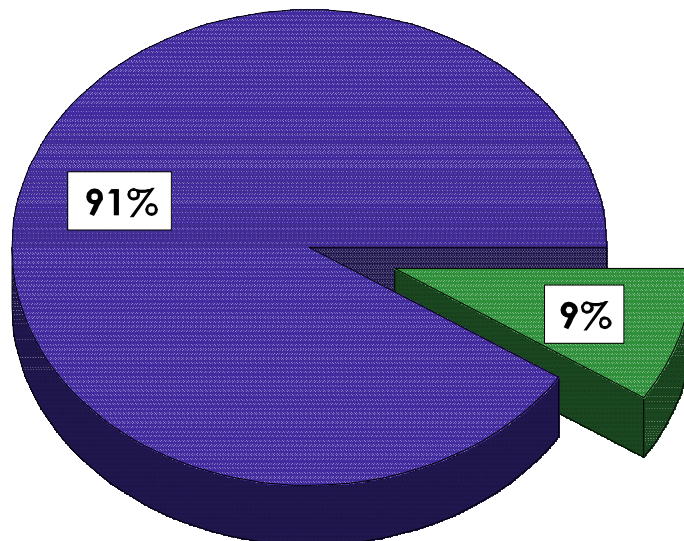
# Data for Stargardt's Patients

## Data for Eyes with Stargardt's Disease

### **Improvement on Visual Acuity Testing**

	Raw Data	Percent
One Line Better	4/22	18%
Two Lines Better	7/22	32%
Three Lines Better	3/22	14%
Four or More Lines Better	6/22	27%
No Change	2/22	9%
Two Lines Worsening	0/22	0%

## Data for Stargardt's Patients



■ Improved      ■ No Change