Macular Degeneration Treatment with Nutrients and Micro Current Electricity

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Introduction

This is the second report of a study of age related macular degeneration (AMD). The first report covered from July 1985 to July 1992 and was published in the Fall of 1993.[1] The positive results to date in this and in the earlier report are the slowing or the reversing of the progress of AMD for most subjects.

This is exciting because the dry type of AMD is considered to be untreatable and can progress to the wet type which rapidly destroys vision. ABC's television, show, "20/20," (Dec. 6, '96) explained that 13 million Americans now have AMD. By the time the baby boomers reach age 65, 25% of Americans, or 30 million people, will have AMD. Happily, we are becoming aware of nutritional and electrical factors that can retard or reverse macular degeneration.[2-10]

Leland D. Michael, O.D. of Rapid City, South Dakota, began studying electricity on the eyes in 1985 following his successful experience with using electricity to treat his own retinal detachment. Merrill Allen became the research designer and coordinator. Ralph Zehner began studying his twelve subjects in July 1991. When "Doc Mike" became terminally ill, he arranged for John Jarding to continue the study. Jarding had thirty-four new subjects from August 1992 to May 1998. The total number of subjects in this report is forty-six.

Procedure

Each subject was independently confirmed as having dry macular degeneration. The nutritional supplements used by Zehner's subjects were similar to those used in the earlier study.[1] Jarding's more recent nutrients are shown in **Figure 1** (p. 212). The additional nutrients he used are bilberry, rutin and taurine.

In addition to nutrients taken daily, all subjects received micro ampere electricity applied to each eye's closed lids. Zehner's subjects were treated once per week for six weeks, then once per month. Jarding's subjects were treated several times per week.

Results

Figure 2 (p. 212) shows Zehner's twelve subjects. **Figure 3** (p. 213) shows Jarding's 34 subjects. For Figures 2 and 3, start date is the date the subject received the first treatment; DOB means date of birth; Acuity means the denominator of the Snellen fraction; R means Right Eye, L means Left Eye, Change means the number of letters lost (-), or gained (+) from the initial acuity to the final acuity. There were five letters in each line of acuity. To go from 20/30-2 to 20/20 is a gain of 12 letters. (20/30-2 to 20/30 = +2 letters. 20/30 to 20/25 = +5 letters. 20/25 to 20/20 = +5 letters.) Comments provide unusual events.

Discussion

The data are presented according to the starting date. Jarding's subjects showed improvement while Zehner's showed a small loss. The changes in nutrition and the increase in the number of electrical treatments explains the improved success of Jarding's procedure compared to the earlier procedure used by Zehner.

At each office visit the patient's acuity was checked. Because many subjects reported better vision as they left the office, Jarding began checking acuity both at the start and at the end of the office visit. Visual acuity usually improved following the electrical stimulation of the eyes. This suggests that still more frequent treatments would

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Figure 1. Nutrients used in treatment for Macular Degeneration

Nutritional Supplement	Two Per Day
Beta Carotene	40,000 IU
Natural Vitamin E	400 IU
Vitamin C	1,500 mg
Citrus Bioflavonoid Complex	250 mg
Quercetin	100 mg
Bilberry Extract	10 mg
Rutin	100 mg
Zinc	25 mg
Selenium	100 mcg
Taurine	200 mg
N-Acetyl-Cysteine	200 mg
L-Glutathione	10 mg
Vitamin B-2	50 mg

Figure 2. Changes in Zehner's 12 subjects using nutrients and micro-current electricity

Zehner Name:	Sex	D.O.B.	Start Date	Start Acuity R20/	Start Acuity L20/	End Date	End Acuity R20/	End Acuity L20/	Change R	Change L	Comments
M.D.	F	5/30/31	7/1/91	30-1	30	4/28/98	20	20	+11	+10	Cataract Surg 10/94
M.H.	F	10/3/10	7/5/91	40-2	60-1	2/2/ 94	70-2	200-1	-14	-16	Deceased
J.E.	F	5/13/20	7/23/91	60	80-1	11/18/93	50+1	60-2	+6	+9	Subject left Indiana
C.S.	F	9/5/02	7/26/91	70+1	60+2	9/13/96	60	30-2	+3	+10	Cataract Surg 7/96
M.R.	F	5/12/23	8/30/91	30-1	40-1	5/1/98	20-1	50	+10	-4	Cataract Surg 2/92
D.G.	F	1/20/18	10/17/91	30-2	400	9/26/95	80-1	400	-24	0	
D.T.	M	2/6/35	12/20/95	30	20-1	4/23/98	30+2	20-2	+2	-1	
L.P.	F	12/7/11	10/17/96	70-1	80+1	4/30/98	100-1	100+1	-10	-5	Poor Health
P.B.	F	10/21/18	11/22/96	60-1	60-1	5/20/98	80	50-1	-7	+5	
I.C.	F	9/7/07	12/2/96	400	50-2	1/5/98	400	400	0	-35	
C.H.	F	7/18/23	12/12/96	40+1	40+2	4/27/98	50+2	50+1	-4	-4	
H.K.	F	8/11/15	4/21/97	80-1	20-2	12/15/97	60	20-3	+11	-1	Poor Health

be beneficial.

This study is divided into two parts: Figure 2 is data from Zehner; Figure 3 is data from Jarding. The Electro-Acuscope 80, which is no longer available, was used earlier by Michael and in this study by Zehner. Jarding used the Micro-Stim 400[6] which has a different output wave form compared to the Electro-Acuscope 80. The Micro-Stim 400 may be superior to the older machine, but we can't be sure because the Micro-Stim 400 was used more frequently. The basic electrical stimulus parameters are: 200 micro-amperes at ±9

Figure 3. Changes in Jarding's 34 subjects using nutrients and micro-current electricity

Jarding Name:	Sex	D.O.B.	Start Date	Start acuity R20/	L20/	End Date	End Acuity R20/	L20/	Change R	L	Comments
E.T.	F	7/31/23	8/20/92	50-3	25	2/4/98	30	25+1	13	1	
J.B.	F	11/1/05	8/24/92	40-2	25-1	2/13/98	400	25-2	-33	1	Hemorrhage12/95
Y.H.	F	3/30/14	12/21/92	60+3	25+3	12/15/95	70	25+3	-8	0	
C.B.	M	9/10/24	2/9/93	400	40-1	2/12/98	200	200	0	2	
R.E.	F	7/9/19	4/1/93	60	40-2	2/18/98	200	40-2	-20	0	
A.P.	M	12/28/18	5/3/93	20-1	400	5/17/95	30-1	80-2	-10	18	Hemorrhage 2/95
M.C.	F	8/10/18	5/25/93	60-2	50-1	2/11/98	40-1	80+1	11	-28	
L.O.	M	8/23/09	8/19/93	25+3	400	12/11/96	40-1	CF3Ft	-14	-5	
B.B.	M	6/10/18	11/9/93	25	20+3	10/23/95	15-2	15	8	2	
G.S.	F	9/13/22	1/21/94	60	100	2/4/98	80-2	60-1	-12	14	
M.J.	F	10/25/31	1/26/94	25	40	12/12/97	20	30+2	5	7	
J. D.	M	7/3/26	9/30/94	70	400	10/27/95	100	400	-5	0	
W.K.	M	12/11/19	4/21/95	300	40+2	4/18/97	200+1	40	11	-2	
H. R.	F	12/25/10	8/7/95	60	400	10/14/97	40+1	200	11	10	
E.C.	F	12/30/16	11/13/96	400	60+2	2/5/98	400	30-2	0	10	
H.H.	F	2/2/28	12/6/96	50-2	60	2 /9/98	15-3	15-2	19	23	
M.G.	F	12/12/34	1/3/97	40	50	2/18/98	15-1	50-2	15	-2	
N.S.	F	5/18/26	2/21/97	200	70	10/8/97	200	25-3	0	22	
B. P.	F	12/15/36	4/22/97	50+2	40	1/27/98	20	25-2	18	8	
V.N.	F	5/9/26	5/19/97	40	40	2/19/98	25+2	30-2	12	3	
LS.	F	9/9/20	6/23/97	30-1	25-2	2/24/98	25+2	25-2	8	0	
M.S.	F	9/14/15	8/15/97	70	200	1/20/98	50 -1	80-1	9	14	
D.T.	M	8/25/24	9/11/97	40-2	50+2	2/20/98	20-1	20	16	18	
R.S.	M	3/4/33	9/23/97	400	LP	9/29/97	400	400	0	1	
V.C.	F	11/6/24	9/26/97	80	60+2	1/20/98	50+2	40-2	17	6	
H.C.	F	4/27/23	10/10/97	50-2	30-1	2/19/98	80-2	25-1	-15	5	Hemorrhage 1/98
R.C.	M	3/14/20	11/24/97	LP	300	1/30/98	LP	100+1	0	20	
E.L.	M	9/7/14	12/5/97	LP	70	2/17/98	LP	50-1	0	9	
L.T.	M	6/21/12	12/22/97	60+1	50-2	1/30/98	60+2	30-2	1	10	
A. D.	M	1/16/18	1/12/98	40	50-1	1/15/98	20-2	20-2	13	19	
R. P.	F	1/18/34	1/19/98	200	30-2	1/22/98	100	20-2	10	10	
D.W.	F	5/8/13	1/27/98	200	200	2/20/98	200	400	0	-10	
V.H.	M	13/12/20	2/2/98	CF8′	CF6′	2/13/98	200	200	?+4	?+6	
L.E.	M	8/10/29	2/16/98	200	100	2/19/98	60+2	100	12	0	

volts, alternating, square wave current.

For Zehner's subjects there was an average loss of 3 letters of visual acuity per eye over a 2 year period. For Jarding's subjects there was an average gain of 8.5 letters of acuity per eye.

Newsome's research[2] tested the value of zinc in treating macular degeneration. He used the same nutrients in the test and control groups. He added zinc only to the test group. The result was a slowing of the loss of vision of the 80 subjects in the test

group receiving zinc when compared to the 71 subjects in the control group who did not receive zinc. On average his control group lost 7.1 letters of acuity and his test group lost 4.1 letters of acuity in two years. His (and our) acuity test chart had 5 letters per line.

Conclusions

The results of this study strongly indicate that nutrition and electrical stimulation are able to delay or reverse the progress of macular degeneration.

The fact that acuity usually improved within minutes of electrical stimulation shows that micro current electricity applied to the eye lids is beneficial.

The fact that a change in nutrients to include taurine, rutin and bilberry extract improved the success of treatment agrees with the recent literature[7-10] on the importance of nutrition to the retina.

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