Appendix 1. Subject demographics.

Patient	Age (yr)	Age at TBI (yr)	Etiology of TBI	Symptoms/Complaints
JM01	25	23	Head hit against metal rod	Slow reading, skipping lines
TB02	27	22	Hit with baseball bat	Intermittent diplopia, poor concentration, intermittent blur at near
BR03	30	27	Assault	Eye strain, difficulty reading, poor focusing ability
CR04	31	25	MVA	Eye strain, headache
EK05	25	22	MVA	Difficulty with computer work, eye strain
KO06	24	22	Fall	Difficulty performing ophthalmoscopy, eyestrain
DB07	29	27	MVA	Intermittent blur, intermittent diplopia, difficulty reading, skipping lines, visual motion sensitivity
AN08	28	27	Fall	Headache, near vision blur, intermittent diplopia
DJ09	33	31	MVA	Blurry vision, intermittent diplopia, difficulty reading, peripheral visual motion sensitivity
SR10	29	25	MVA	Headache, intermittent diplopia at near, trouble focusing at near, dry eye, hyperacusis, photosensitivity, eye strain
AK11	33	31	Assault	Difficulty shifting focus, blur at near, loss of place while reading, visual fatigue, headache, nausea, loss of balance
NM12	31	25	Fall	Intermittent diplopia, imbalance, difficulty reading

MVA = motor vehicle accident, TBI = traumatic brain injury.

APPENDIX 2

SUBGROUP ANALYSES

Odd Group

There were 7 subjects in this group who received the OMT (Treatment A) during Phase 1 and P training (Treatment B) during Phase 2. Of the 7 subjects, 2 (BR03 and AK11) completed Phase 1, but later withdrew from the study during Phase 2 training due to their lack of availability. Another subject (DB07) completed both phases of training, but during post-training measures period (week 15) suffered a second head injury; hence, evaluative procedures (repeat baseline measures) could only be performed partially in this subject. However, data from all 7 subjects were analyzed for baseline (pre-OMT) versus OMT (post-OMT) alone for comparison. For comparisons involving baseline, OMT (post-OMT), and P (post-P) training, data from 4 subjects that completed both phases of training including post-training measures, along with available data from DB07, were analyzed.

Even Group

There were 5 subjects in this group who received P training (Treatment B) during Phase 1 and OMT during Phase 2. All completed both phases of training and post-training measures. Data from all 5 subjects were analyzed for comparing baseline OMT (post-OMT) alone, as well as in the comparisons involving baseline, P (post-P), and OMT (post-OMT).

SUBGROUP RESULTS

Laboratory-Based Objective Measures

Odd group (N=4) – Order of treatment: A----B (A = OMT and B = P)

Dynamic parameters measured at baseline, then following the OMT (post-OMT), and later following the P training (post-P) were compared using one-way, repeated-measures ANOVA; post-hoc analyses were performed using Tukey's multiple comparison tests. None of the parameters were significantly different ($p>0.05$) between baseline, post-OMT, and post-P for either convergence or divergence. This could be due to mixed results from individual subjects and/or the relatively small sample size of the subgroup as compared with the combined group sample size (n=12).

Even group (N=5) – Order of treatment: B----A (B = P and A = OMT)

Dynamic parameters measured at baseline, then following the P training (post-P), and later following the OMT (post-OMT) were compared using one-way, repeated-measures ANOVA; post-hoc analyses were performed using Tukey's multiple comparison tests. Peak velocity for both convergence ($F[2,14]=9.71$, $p=0.007$) and divergence ($F[2,14]=17.43$, $p=0.001$) were found to be increased significantly. Similarly, the response time constant decreased significantly for both convergence ($F[2,14]=7.61$, $p=0.01$) and divergence ($F[2,14]=10.29$, $p=0.006$). For both parameters, post-hoc analyses revealed significant differences between baseline and post-OMT, and also between post-P and post-OMT, thus showing a real effect of the OMT ($p<0.05$). However, no significant difference was observed between baseline and post-P, thus suggesting a lack of effect of the P training ($p>0.05$). None of the other dynamic parameters were significantly different ($p>0.05$) between baseline, post-P, and post-OMT for both convergence and divergence. This is due to the response amplitudes already being normal at baseline.

Clinically Based Subjective Measures

Odd group (N=4) – Order of treatment: A----B (A = OMT and B = P)

All clinic parameters measured at baseline, then following OMT (post-OMT), and later following P training (post-P) were compared using one-way, repeated-measures ANOVA; post-hoc analyses were performed using Tukey's multiple comparison tests. A significant increase in the NPC recovery value ($F[2,11]=6.36$, $p=0.03$) was observed. The post-hoc analysis revealed a significant difference between baseline and post-P values ($p<0.05$), but not between baseline and post-OMT and between post-OMT and post-P ($p>0.05$). This could be due to possible delayed effect (i.e., "consolidation period") from the initial OMT. None of the other parameters were significantly different ($p>0.05$) between baseline, post-OMT, and post-P. This could be due to mixed results from individual subjects, as well as the small sample size of the subgroup as compared with the combined group sample size ($n=12$).

Even group (N=5) – Order of treatment: B----A (B = P and A = OMT)

Clinic parameters measured at baseline, then following P training (post-P), and later following OMT (post-OMT) were compared using one-way, repeated-measures ANOVA; post-hoc analyses were performed using Tukey's multiple comparison tests. A significant decrease in the NPC break ($F[2,14]=7.34$, $p=0.01$) and NPC recovery ($F[2,14]=7.42$, $p=0.04$), PFV recovery ($F[2,14]=4.90$, $p=0.04$), and prism flipper vergence facility ($F[2,14]=6.95$, $p=0.01$), were found after training. While the post-hoc analyses for NPC break and vergence facility revealed a significant difference between baseline and post-OMT, and also between post-P and post-OMT ($p<0.05$), the NPC recovery and PFV recovery showed significant differences between baseline and post-OMT alone ($p<0.05$), thus showing a real effect of the OMT. None of the other parameters were significant ($p>0.05$) between baseline, post-P, and post-OMT. This could be due to mixed results from individual subjects, as well as small sample size of the subgroup as compared with the combined group sample size ($n=12$).