

A GUIDE FOR BIOPTIC DRIVING

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INTRODUCTION

The increase in the geriatric population and the increase in maintaining independence are apparent today more than ever. With the expanding geriatric population the older driver is expected to increase considerably. Driving plays a large part in maintaining one's independence and giving a person self worth. That is why it is important that the visually impaired driver maintain the right to drive as long as the driver's and public's safety is not jeopardized. The eyecare professional can help address the needs of the visually impaired patient by referring the patient for a low vision examination. The eyecare professional can also attempt to help insure the safety and independence of the driver by referring the patient to a driving program.

The following guide will provide information on the steps the visually impaired patient must take in obtaining or maintaining driving privileges. The guide will discuss the protocol the visually impaired patient must take from having the low vision examination to being issued a driver's license. Topics addressed will be the bioptic telescope, the driving program, obtaining a driver's license, and the legal issues involved.

PRELIMINARY ELEMENTS

The eyecare professional, who does not specialize in low vision, should refer the visually impaired patient to a low vision clinic. A low vision clinic will help address the patient's needs for daily living. This entails using environmental adaptations, non-optical techniques, and low vision devices.² If the patient has the desire to drive a motor vehicle then

the patient is educated on the visual requirements involved, the use of a bioptic mounted spectacle telescope, and the prognosis of the patient actually driving including realistic expectations regarding limited driving. The visual requirements for driving will be discussed later in the driver requirement section. If the patient meets the driving requirements and is a good candidate for bioptic driving then a plan is implemented to achieve this goal.

The first step is to have the best conventional correction for the patient. Unfortunately, with a lack of communication in some multi-disciplinary alliances this basic provision can be overlooked. An ocular disease or disorder may have been the main concern, in turn overshadowing a patient's uncorrective refractive error.

Next is enhancing distant vision which involves the use of handheld or spectacle mounted telescopes. Often the handheld or full field positioned spectacle mounted telescopes are loaned to the patient before being fitted for a bioptic spectacle mounted telescope. Another alternative some low vision clinics provide is to loan a bioptic telescope to the patient for a period of two or more weeks. These three options are more practical for the patient than to initially fit for a bioptic telescope to insure that the patient can be accustomed to using a bioptic before encountering the cost of purchasing one. To become more proficient in using the handheld, full field positioned, and bioptic telescopic loaner the patient is given some skill development tasks. These tasks can consist of scanning and locating objects, developing judgment skills, and being accustomed to the optics of the telescope for example increased magnification, decreased field of view, and tunnel vision affect.

The patient needs to develop the following skills in using a telescope to become proficient in its use: 1) peripheral awareness, 2) scanning, 3) tracking, 4) spotting, 5) visual imagery, 6) visual memory, and 7) reaction time³ (See Appendix 1).

After these goals have been obtained and the patient has adjusted to the use of a handheld telescope, full field spectacle mounted telescope, or bioptic telescopic loaner the patient can be fitted with a customized bioptic telescope.

BIOPTIC TELESCOPE

The bioptic mounted spectacle telescope is the telescopic system required for a visually impaired patient to wear in operating a motor vehicle. It is the only type of telescopic lens that can be worn and still have peripheral vision allowing the patient to be mobile. Mobility is maintained because the majority of the time the carrier lens, which allows a full visual field, is utilized. The bioptic telescope incorporates a low vision patient's distant prescription and a compact telescope mounted at the top of the lens 9mm below the top of the carrier lens. The telescopes available for the bioptic system are the 1.7x, 2.2x, 3.0x, or 4.0x Model I, a 2.2x Model II which is smaller and therefore can be more cosmetically pleasing, and the wide angle bioptic telescope in the 2.2x or 3.0x which provides a larger visual field² (See Appendix 2).

FITTING THE BIOPTIC TELESCOPE

In some instances the patient may prefer a different telescopic prescription to the distant carrier lens therefore, to insure the patient has the best visual acuity through the telescope the low vision specialist wants to do a telescopic trial frame evaluation. A telescope is placed in the front cell of the trial frame and loose lenses are placed in the back cells to see which prescription will provide the best vision for the bioptic telescope. The telescope should be placed 9mm below the top of the carrier lens and decentered to the patient's monocular pupillary distance. An accurate monocular pupillary distance is essential. The bioptic spectacle

mounted telescope can be fitted monocularly or binocularly depending on the patient. If the patient has unequal visual acuity the eye care specialist should do a monocular fit and place the telescope over the eye with the better acuity unless the patient's visual fields dictate differently. A patient who has an equal amount of blurred vision in both eyes and has had binocular vision before the vision loss may prefer a binocular telescopic fit. When fitting the bioptic telescope the weight of the bioptic telescope must also be considered therefore monocular fits are usually the best choice.³

The telescope is usually oriented at the lab at a ten-degree superior angle. By decreasing this angle the patient increases the optical jump between the carrier lens and the telescope. This allows minimal head movement and maximal eye movement when the patient looks into the telescope. This strategy is more advantageous because the "eyes can move ten times faster than the head" therefore, the patient can spot quicker through the telescope.³

The bioptic telescope is a Galilean telescope. Galilean telescopes provide maximum visual field when a person's eye is as close to the telescopic ocular lens as possible. Therefore, it is important that the bioptic telescope is adjusted properly by having minimal vertex distance to increase the patient's visual field.²

BIOPTIC TRAINING

It is important to educate the low vision patient in the mechanics of the bioptic telescope. The patient views the surrounding environment through the carrier lens with the patient's distant prescription and tilts his head slightly down into the telescope to assess detail when necessary. The telescope is used to see detail and is accessed less than 10% of the time. To help the patient become more proficient with the bioptic telescope static-kinetic training

techniques are applied. These techniques require the patient to learn how to locate stationary objects while stationary, moving objects while stationary, stationary objects while moving, and moving objects while moving (See Appendix 3). It is recommended that the patient train with the bioptic telescope for 20 hours before enrolling in a driving program.¹

DRIVING REQUIREMENTS

Each state has its own visual requirements for driving a motor vehicle. Depending upon the state requirements the bioptic driver's visual acuity can range from 20/40 to 20/100 through the telescopic device, a visual field of 100 to 140 degrees laterally without any large scotomas, and an acuity of 20/40 to 20/200 through the carrier lens with the patient's distant prescription² (See Appendix 4). The eye care practitioner must also consider the patient's physical abnormalities, sensory motor problems, and mental status that may hinder the patient from driving competently and safely.

DRIVING PROGRAM

A typical driving program consists of a 1) pre-screening evaluation, 2) telescopic evaluation, 3) co-piloting training, and 4) road evaluation. To enroll in a driving program the participant is referred by a physician or a low vision specialist. The participant must have a valid driver's license or a driver's permit.¹ Many experienced drivers have a valid driver's license but in view of their physical or visual problems have opted not to drive. The participant must also provide a completed visual statement and physicians statement before they proceed with the driving pre-screening and subsequent road evaluation. The visual statement needs to be completed by an optometrist or an ophthalmologist¹ (See Appendix 5). Monocular and

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binocular uncorrected and corrected acuities and visual fields will be assessed to see if the patient meets the state's visual requirements for driving. An anterior chamber, posterior chamber, and fundus evaluation by an eye care specialist will provide insight to any progressive diseases of the eye. Saccades, range of motion, color vision, glare recovery, depth perception, and any occurrence of diplopia can also be evaluated. The physician will provide pertinent medical history and assurance that the patient meets the state requirement of being seizure free for the past six months (See Appendix 6).

PRE-SCREENING

The driving program provides a pre-screening of the patient to review the patient's history and assess the patient's cognitive ability, visual perception/processing time, and reaction time (See Appendix 7 & 8). The pre-screening is administered by an occupational therapist (OTR). Evaluation of these aspects is crucial to the safety of the driver and the public before the road evaluation. Some tests that are utilized for evaluation are the Motor Free Visual Perception Test (MVPT), H cancellation test, Line bisection test, Porto-Clinic/Glare Test, Grommet Manipulation test, and Titmus Vision Test ¹ (See Appendix 9 for test process). If the patient demonstrates poor performance during these tests then continuation of bioptic training for driving purposes may not be recommended.

BIOPTIC EVALUATION

The patient's ability to manipulate the bioptic telescope for visual use is evaluated (See Appendix 10). It is pertinent that the patient is properly educated on how to use the biotic telescope while driving. The carrier lens is used to evaluate the surrounding environment

while driving and the telescopic lens is used less than 10% of the time to appreciate detail when necessary to spot lettering on signs or unfamiliar objects in the surrounding environment. Once proficient in the telescopic static-kinetic techniques mentioned previously in the bioptic telescopic training section the patient is ready for co-pilot training.

CO-PILOT TRAINING

Co-pilot training provides the patient the opportunity to utilize the telescope to assess the environment while under the simulation of driving conditions i.e. speed and vibration of the vehicle. The patient rides in the passenger seat while someone else is driving. An OTR rides in the rear seat evaluating the patient using the telescope. The OTR will assess the patient's ability to locate and identify objects in an appropriate amount of time.¹ (See Appendix 11).

ROAD EVALUATION

The road evaluation consists of having the patient drive the vehicle under a multitude of different stimuli. The patient must be able to be selective to the different stimuli and be able to process and react to the information promptly.³ It is crucial that the patient incorporate an unconscious level of priority to the different stimuli to be able to react to them appropriately. For the safety of the public, driver and passengers of the vehicle the vehicle is equipped with dual brakes and hand controls to allow the person in the passenger seat to control the vehicle in any type of hazardous conditions. The OTR assesses the patient's competency to drive with the telescope by seeing how proficient the patient is with application, judgment and reaction skills (See Appendix 12). The training course can encompass different types of environments such as residential areas, busy downtown districts, or highways. It is recommended that the

inexperienced drivers receive 20-30 hours of training and the experienced drivers receive 10-15 hours of training in one-hour sessions.¹

The OTR will complete a discharge summary on the services given to the patient and the results of their clinical testing. The summary also includes recommendations following driver training. These recommendations may be 1) full independent driving privileges, 2) independent driving privileges with license restrictions to area, time, or conditions such as no freeway driving or night driving, 3) retest, or 4) not recommended for driving a motor vehicle. This summary information is forwarded to the physician or low vision specialist, who referred the patient to the driving program, so he is aware of the prognosis of the patient's ability or inability to drive. The summary also informs the physician or low vision specialist of the patient's test performance (See Appendix 13). If the physician or low vision specialist determines that the patient can not safely drive a vehicle after reviewing the summary information then a Request for Reexamination form must be filed with the Department of State Bureau of Driver Improvement (See Appendix 14). The OTR will also send the patient's results of the in-clinic evaluation, road evaluation and a driver assessment report to the patient to inform the patient to contact and review the results with his physician or low vision specialist (See Appendix 15).

PSYCHOSOCIAL ASPECTS

When the low vision specialist or OTR feels the patient is not competent to drive following the training of the driving program due to visual, physical, or mental incapacities the patient has to be educated in the matter. Ultimately, the low vision specialist is responsible

in informing the patient that driving is not recommended. This information has to be documented in the patient's records for legal reasons if addressed.

Some low vision facilities have a multidisciplinary approach where a social worker is integrated into the system to provide the information and emotional support the patient may need when confronted with the situation of not being able to drive. If a social worker is not employed at a low vision or driving program facility the low vision specialist should recommend a facility or organization that can provide emotional support to the patient.

LEGALITIES

The legal issues involving a patient who is incapable of driving competently are still presently unclear. There is great moral responsibility to the eye care specialist who recommends licensure and the Secretary of State that issues the license. However, the Secretary of State has sole authority in providing or restricting one's driver permit or license. The best solution is to educate the patient in their incapacity to drive due to 1) not meeting the state's visual requirements, 2) being physically inept, or 3) being mentally stressed or unstable and to consistently document these discussions. The referring physician or low vision specialist, who recommended the driving program, is responsible in informing the patient of the capacity to drive with/without restrictions or not being able to driving at all and the circumstances that prohibit them from driving, be it visually, physically, or mentally.

The referring physician, optometrist, or OTR may even consider having the patient sign an affidavit stating that information and education regarding the circumstance of not being able to physically drive due to sensory motor problems or poor reaction time, legally drive due to unmet vision standards, or mentally capable due to decreased alertness caused by medications

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or just increased anxiety seen in inexperienced drivers has been discussed. Other options to consider when unsure of patient compliance would be to 1) inform and educate a family member on the patient's restriction to legally and/or competently drive or 2) report the patient to the Secretary of State or Department of State Bureau of Driver Improvement so they in turn may revoke the patient's driver license upon testing and failure of visual standards. However, these two options may be considered a breach of confidentiality between patient and doctor if the patient does not want their personal information divulged.

OBTAINING A DRIVER'S LICENSE

The telescopic driver must schedule and complete a road test at the Department of Motor Vehicles after successfully completing a driving program. If the telescopic driver competently passes the road test, a road test certificate is issued and is to be presented to a Secretary of State branch office to apply for a license. The Secretary of State branch personnel conducts an examination of the applicant's visual acuity and peripheral vision with the bioptic telescope using the Titmus Vision Tester. If the telescopic driver passes the visual acuity and peripheral vision test then a driver's license is authorized. A driver's license photo is taken with the telescopic driver wearing the bioptic telescope. The telescopic driver is issued a temporary driver's license noting telescopic lens wear and any driving restrictions that might apply until the permanent driver's license is issued. The permanent driver's license will be sent to the telescopic driver by mail. On the back of the permanent driver's license a sticker will note the use of a telescopic lens and any applicable driving restrictions that may apply. However, the telescopic driver may be required to submit a vision statement every six or twelve months per doctor's recommendation (See Appendix 15).

DISCUSSION

The ultimate program for a low vision patient / bioptic telescopic driver would be a multidisciplinary facility that integrates the low vision specialist, OTR, social worker, and the driving program. However, very few of these facilities actually exist in turn exposing many problems that might not be addressed. Potential problems that may arise are 1) inadequate use of the bioptic telescope, 2) patients having anxiety and frustrations, and 3) lack of communication and responsibility between different facilities if not affiliated with each other.

Unfortunately, some bioptic telescopic drivers misinterpret the information on how to use a bioptic or they are not educated properly on the use of the it. This creates a problem when the OTR at the driving program must educate the patient on how to use the bioptic to scan, track, and spot objects because the patient must show proficiency in these categories before advancing to the co-pilot training. This situation also causes an increased expense to the patient because the patient solely finances the driving program. The optometric clinic that provided the bioptic telescope to the patient is responsible in informing the patient on how to use the bioptic and should provide some exercises to help the patient become more proficient in scanning, tracking, and spotting. Some of the optometric expenses could be covered under the patient's insurance in turn, making it more cost effective for the patient and more time proficient for the driving program.

Many low vision patients feel anxiety and frustration due to their decreased vision and inadequacies in performing certain tasks such as driving. In a multidisciplinary facility a social worker can help address and cope with the frustrations that the patient might be experiencing. Addressing these issues may help the patient from losing focus of his goals and expectations.

A patient's concerns and frustrations can be an oversight at certain facilities due to gray areas in responsibility in providing mental and emotional support to the patient. Providing mental and emotional support to the patients is very time consuming and if we can not provide sufficient support to the patients then we must incorporate outside resources like Commission for the Blind and Vision Enrichment Services to help the patients deal with their emotions.

Miscommunication and lack of responsibility to the patient can also pose a problem in nonaffiliated facilities. Guidelines should be implemented between these non-affiliating facilities to help provide total support to the patient instead of assuming that responsibility lies elsewhere.

An integrated multidisciplinary facility is a rare set-up, however, by working interprofessionally a multidisciplinary relationship among eyecare professionals, OTRs, Commission for the Blind, Vision Enrichment Services, and the driving programs can be established. It would be beneficial to our profession as eye care providers to help the optometric field in implementing a standard to an interprofessional multidisciplinary institution.

Integrating these guidelines into our profession and implementing interprofessional multidisciplinary institutions can help define future regulations, policies, and liability issues concerning bioptic telescopes in the years to come.

CONCLUSION

The topics addressed are to help the eye care professional inform visually impaired patients of elements entailed in obtaining or maintaining a driver's license. As eyecare

professionals it is our responsibility to provide the public services that will meet visual needs or to refer to other agencies that will address these needs.

The major concern is whether the visually impaired patient is able to drive competently and safely. No one can predict which driver is a risk to themselves and others but we can recommend driving programs to those patient's who are visually impaired and still want to maintain driving privileges. No one wants to deprive a person from driving, in turn affecting their independence and self worth, but as eyecare professionals we have an obligation to inform a patient when their driving can be a potential hazard to themselves and others. The driving program is very beneficial to those who can maintain their driving privileges and independence and low vision patients should be given this opportunity.

APPENDICES

APPENDIX 1

TELESCOPIC DEVELOPMENT TASKS

- 1) **PERIPHERAL AWARENESS** clues you to pick up vital information quickly. It tells you when to shift your attention from sensing to seeing, and then planning an action.
PRACTICE: Place yourself in the center of the room. Look at one specific object straight ahead. Do not shift your eyes. Using only your side vision, “sense” as much as you can, name as many objects, colors, and notice movement.
- 2) **SCANNING AND TRACKING** are the locating and planning steps. These skills will map out the visual boundaries of the environment.
PRACTICE: Go to a shopping mall. Locate a seat where you have a view of various store entryways and shoppers. Practice scanning the walkways on the mall...follow one shopper as he walks down the mall.
- 3) **SPOTTING** is the identification step. When you identify the target, you are ready to plan your next move.
PRACTICE: Go to a grocery store. Scan the signs above the lanes. Shift your view to look through the telescope to spot and read a particular sign.
- 4) **VISUAL IMAGERY AND MEMORY** are skills on how well you remember something you saw....Creating “mental pictures” of what you see, storing these pictures in your mind, and developing efficient, retrieval techniques are skills you will need.
PRACTICE: Look at a page in a magazine for one minute. Close your eyes. Picture in your mind that same page. Name as many objects, colors, and location of specific items on the page as you can.

NOTE: Taken directly from Living with Vision Loss

APPENDIX 2

BIOPTIC TELESCOPES

MODEL I TYPE	FIELD OF VIEW (DEGREES)
--------------	-------------------------

- | | |
|--------------------------------|----|
| 1. 1.7x BIOPTIC TELESCOPE..... | 18 |
| 2. 2.2x BIOPTIC TELESCOPE..... | 16 |
| 3. 3.0x BIOPTIC TELESCOPE..... | 8 |
| 4. 4.0x BIOPTIC TELESCOPE..... | 6 |

MODEL II

- | | |
|--------------------------------|----|
| 1. 2.2x BIOPTIC TELESCOPE..... | 11 |
|--------------------------------|----|

WIDE ANGLE TYPE

- | | |
|--------------------------------|----|
| 1. 2.2x BIOPTIC TELESCOPE..... | 16 |
| 2. 3.0x BIOPTIC TELESCOPE..... | 11 |

APPENDIX 3

TELESCOPIC TRAINING TECHNIQUES

Beaumont Eye Institute Low Vision Center

TELESCOPIC TRAINING TECHNIQUES

Training Instructions:

- Step 0** Learn to locate stationary objects while you are stationary.
- Using your own home or familiar surroundings.
 - Using large high contrasted targets FIRST.
 - Then decrease contrast and target size.
 - Then increase background distractions and distances.
 - Scan your doors, work to the walls, hallways and to locating signs and objects.
- Step 1** Learn to locate moving objects while you are stationary.
- Watching television, viewing in your yard (birds flying), as a passenger in a car (locate and track objects such as trees, signs, and traffic lights and buildings).
 - Have a friend or family member move around at various distances.
 - Pedestrians walking.
 - Follow a moving ball.
- Step 2** Learn to locate stationary objects while you are moving.
- Reading signs while you are walking.
 - Viewing buildings and entrances while you are walking.
- Step 3** Learn to locate moving objects while you are moving.
- Walking in a familiar neighborhood.
 - Go to a shopping mall.
 - A walk in the park.
 - Ride a bicycle (when indicated).
 - Use a go-cart facility (when indicated).
 - Simulate driving (as a navigator).

Reminder Be patient with yourself, if you get frustrated stop for awhile. Remember it takes time to adapt, you will not master the telescope overnight.

- Skill Area**
- You need to develop visual discrimination skills.
 - You need to develop visual memory skills.
 - You need to develop application skills.
 - You need to develop judgment skills.
 - You need to develop tracking and locating skills.

Reason The type of telescope system that you have will indicate how you use the system.
 In a non-stationary situation you want to be able to anticipate:

- Your situation ahead of time.
- Your reaction time to a given situation.
- Your field of view, with its limitations.
- Light gathering decrease, and how it affects you.
- The "tunnel affect" and how it affects you.
- A fixation loss, and how you will respond, etc.

Summary Judgment is very important! Not everyone with low vision who is given a telescope will be a good driver. When prescribing a telescope system for driving one makes the basic assumption that a person is able to drive safely with the visual acuity that is equal to or greater than the minimum requirement of the state of Michigan. One cannot guarantee competence and confidence!

Through commitment, appropriate training and follow up evaluations, the Low Vision staff will do everything possible to ensure your success. During your telescope loan, and following dispensing, should you have any questions, please call the Beaumont Eye Institute - Low Vision Center at (810) 551-2020.

lenses.

- If potential to deteriorate, yearly review by medical advisory board.

- $< 140^\circ$ but $> 110^\circ$ with potential for correction = may be granted a restricted license.

Visual Acuity - Restricted:

- 20/40 in best eye but with history of glaucoma, diabetic retinopathy, or other ocular pathology = need yearly review by medical advisory board.
- 20/50 in best eye = daylight driving only.
- 20/60 in best eye or 20/70 OU = daylight driving only and operation within 25 mile radius of residence.

MARYLAND

Visual Acuity - Full Driving Privileges:

- 20/40 OU with/without corrective lenses.

Visual Field:

- 140° horizontal.

Visual Acuity - Restricted:

- "Night Blindness" vision less than 20/40 OU but at least 20/70 in one eye, and 20/40 in the other eye = daylight driving only.
- 20/40 one eye and blind other eye = bilateral outside rearview mirrors.
- Totally blind one eye, vision less than 20/40 but better than 20/70 other eye = daylight driving only.
- Must have had acceptable level of vision for 90 days prior to licensing.
- Biotopic lenses are acceptable if applicant has 20/40 in one or both eyes without field expanders.

MASSACHUSETTS

Visual Acuity - Full Driving Privileges:

- 20/40 OU or in the better eye, with/without corrective lenses.

Visual Field:

- 120° horizontal.

Visual Acuity - Restricted:

- Vision worse than 20/40-20/70 in either eye and horizontal visual field of at least 120° = daylight driving only.
- At least 20/40 through a bioptic telescope, 20/100 through carner lens for the bioptic telescope, 20/100 through other lens (lens without the bioptic telescope), and at least 120° horizontal visual field = daylight driving only.
- A road test can be taken at night to lift daylight only restriction, if individual feels restriction is unjustified.

MICHIGAN

Visual Acuity - Full Driving Privileges:

- 20/40 OU or each eye separately with/without corrective lenses.
- Also, vision worse than 20/40 but including 20/50 with 140° - 110° peripheral visual field with statement from eye care specialist.

Visual Field:

- Binocular 140° peripheral.
- Monocular 120° peripheral.
- $< 110^\circ$ but $> 90^\circ$ = outside rearview mirror and must pass driving test.

Visual Acuity - Restricted:

- Vision worse than 20/50 but better than 20/60 with recognizable progressive abnormalities affecting vision = daylight driving only.
- Vision worse than 20/50 but better than 20/70 with no recognizable progressive abnormalities affecting vision = daylight driving only. Also, a road test is recommended.
- Must have at least 20/100 in one eye and better than 20/50 in the other eye to be licensed.
- Telescopic lenses permitted with statement of eye care specialist if a road test is passed.

Other Restrictions:

- Progressive abnormalities such as cataracts, glaucoma, retinitis pigmentosa, senile macular degeneration, or a malignancy warrant close attention and require annual review.

MINNESOTA

Visual Acuity - Full Driving Privileges:

- 20/40 OU or in the better eye, with/without corrective lenses.

Visual Field:

- Horizontal visual field are not checked but if found to be deficient by the eye care specialist, license will be denied.

Visual Acuity - Restricted:

- 20/50 = restricted to speeds no greater than 55 miles per hour
- 20/60 = restricted to speeds no greater than 50 miles per hour
- 20/70 = restricted to speeds no greater than 45 miles per hour
- 20/80 to 20/100 = chief evaluator can issue license with the restrictions which are necessary to ensure that the applicant does not pose an unreasonable risk to himself or others.

MISSISSIPPI

Visual Acuity - Full Driving Privileges:

- 20/40 OU with/without corrective lenses.

Visual Field:

- Not required.

Visual Acuity - Restricted:

- If 20/40 in one eye and blind in the other = outside rearview mirror.
- Vision worse than 20/50 in one eye, 20/60 to permanently blind other eye, with/without corrective lenses = daylight

- Color vision deficiency, standard red, green, and amber = advise applicant.
- Depth perception deficiency = speeds not exceeding 45 mph.
- Vision worse than 20/70 OU with/without corrective lenses = license denied.

MISSOURI

Visual Acuity - Full Driving Privileges:

- 20/40 OU or in the better eye, with/without corrective lenses.

Visual Field:

- 55° OU or at least 85° in one eye if the other eye is $< 55^\circ$ = unrestricted license.
- 85° in OD, unknown in the left = left outside rearview mirror.
- 85° in OS and unknown in right = right outside rearview mirror.
- 50° OU = daylight driving only, speeds not exceeding 45 mph, and right and left outside rearview mirrors are required.
- 50° OS, 70° OD = daylight driving only, 45 mph, and outside left rearview mirror.
- 80° OS, 50° OD = daylight driving only, 45 mph, and outside right rearview mirror.
- Combined horizontal visual field must be at least 70° , otherwise, license is denied.

Visual Acuity - Restricted:

- Vision worse than 20/40 but better than 20/60 = daylight driving only.
- 20/60-20/74 = daylight driving and restricted to speeds of no more than 45 mph.
- Vision worse than 20/74 but better than 20/161 = needs a road test with examiner to obtain a restricted driver's license. Restrictions would be daylight driving and not to exceed speeds of 45 mph, plus any other restrictions examiners deem appropriate.

MONTANA

Visual Acuity - Full Driving Privileges:

- 20/40 OU or in the better eye, with/without corrective lenses.

Visual Field:

- 60 - 90° horizontal.

Visual Acuity - Restricted:

- If one eye is worse than 20/40 = left outside rearview mirror.
- Vision worse than 20/40 = road test before restrictions of daylight driving, speed limit, and inclement weather are given.
- 20/40-20/50 OU or either eye = left outside rearview mirror.
- 20/70-20/100 = may request special investigation on need/hardship basis. May test drive in area only to meet persons needs, i.e., to the grocery store, church, medical needs. License good only to meet special needs.

NEBRASKA

Visual Acuity - Full Driving Privileges:

- 20/40 OU or at least 20/40 OD and 20/40-20/60 OS) with/without corrective lenses.
- For monocular licensing, the vision must be at least 20/50 with/without corrective lenses.

Visual Field:

- 140° horizontal = no restrictions.
- 120° - 139° = right and left outside rearview mirrors.
- 100° - 119° = right and left outside rearview mirrors, must operate vehicle within a specified geographic area or designated roadway, daylight driving only and specified speed limitations.
- $< 100^\circ$ = license denied.

Visual Acuity - Restricted:

- 20/70 OU or 20/70 in one eye and not blind in the other eye = right and left outside rearview mirrors, daylight driving only and under specified speed limitations.

Other Restrictions:

- Graduated licenses are offered which contain one or more of the following limitations:
 - a) Must wear spectacle lenses (glasses), contact lenses, or biopic or telescopic lenses.
 - b) Must have right and left outside mirrors on any vehicle driven.
 - c) Must have automatic turn indicators on any vehicle within a specified geographic area or designated roadway only.
 - d) Must operate a vehicle only during daylight hours; that is, between sunrise and sunset.
 - e) Must not operate a motor vehicle on any public streets marked for one-way traffic or marked for more than one lane of traffic in each direction.
 - f) Must drive vehicles equipped with specified controls for operating the steering, brakes and/or speed functions of the vehicle only.
 - g) Must operate a vehicle only with specified speed limitations.
 - h) Must not operate a vehicle on any divided arterial highway designed primarily for through traffic with full control of access.
 - i) Special: as specified by the Department.

NEVADA

Visual Acuity - Full Driving Privileges:

Visual Acuity - Restricted:

- 20/40-20/70 = daylight driving only
- In the case of progressive abnormalities or diseases of the eye:
 - a) 20/40 = unrestricted license
 - b) 20/40-20/60 = daylight driving only.
 - c) vision less than 20/60 = no license issued.
 - d) one eye worse than 20/100, and the other eye is at least 20/50 = daylight driving only.

NEW HAMPSHIRE

Visual Acuity - Full Driving Privileges:

- 20/40 OU with/without corrective lenses.
- 20/30 monocular with/without corrective lenses.

Visual Field:

- Not required.

Visual Acuity - Restricted:

- Restriction of daylight driving only may be recommended by eye care specialist and placed by DOT on license issued.

NEW JERSEY

Visual Acuity - Full Driving Privileges:

- 20/50 OU or in the better eye, with/without corrective lenses.
- Must pass a color vision test (able to distinguish between red, amber and green as used on Official Traffic Control Devices).
- Must satisfactorily complete a practical driving test.

Visual Field:

- None required.

Visual Acuity - Restricted:

- No restricted licenses issued.

NEW MEXICO

Visual Acuity - Full Driving Privileges:

- 20/40 OU or in the better eye, with/without corrective lenses.

Visual Field:

- Not required.

Visual Acuity - Restricted:

- Vision at least 20/80 = medical advisory board will determine limitations such as daylight driving only, speed restrictions, area, and no highway driving with yearly renewal review.
- All drivers 75 years or older are issued one year licenses.
- Plan to draft written standards later in 1995.

NEW YORK

Visual Acuity - Full Driving Privileges:

- 20/40 OU or in the better eye, with/without corrective lenses.
- 20/40-20/70 OU with/without corrective lenses with statement from eye care specialist stating:
 - a) whether or not visual condition is deteriorating.
 - b) recommendations for driving restrictions.
 - c) vision exam recommendations every 6-12 months.
- 20/40 with telescopic lenses and 20/100 OU through the carner lenses with statement from eye care specialist including the above statements and the following:
 - a) Driver has been fitted for and worn telescopic lenses for at least 60 days.
 - b) Person has received training on how to use the telescopic lenses, including a road test with the telescopic lenses

Visual Field:

- 140° horizontal (without the use of expanders in the case of telescopic lenses with carriers).

Visual Acuity - Restricted:

- Eye care specialists will make individual recommendations for qualifications and limitations determined on a case by case basis.

NORTH CAROLINA

Visual Acuity - Full Driving Privileges:

- 20/40 OU and in each eye separately without corrective lenses.
- 20/50 OU with corrective lenses.
- 20/29 or better monocular without corrective lenses.
- At least 20/40 monocular with corrective lenses.

Visual Field:

- 30° on each side of a central fixation point peripheral horizontal field both eyes open without glasses = unrestricted license.
- $< 70^\circ$ peripheral field = refer for medical evaluation.

Visual Acuity - Restricted:

- 20/67 OU with corrective lenses = no speeds greater than 45 mph.
- 20/100 OU with corrective lenses = no speeds greater than 45 mph, daylight driving only, and other restrictions examiner feels necessary.
- 20/50 monocular with corrective lenses = no speeds greater than 45 mph.
- 20/67 monocular with corrective lenses = no speeds greater than 45 mph, daylight driving only, and other restrictions examiner feels necessary.

NORTH DAKOTA

Visual Acuity - Full Driving Privileges:

- 20/40 OU with/without corrective lenses.

Visual Field:

- 140° binocular horizontal visual field = no restrictions.

- 20/30 monocular with/without corrective lenses = outside rearview mirror
- 20/50 each eye with/without corrective lenses = daylight driving only and recommendations from eye care specialist
- 20/50 better eye, 20/60 or less other eye with/without corrective lenses = daylight driving only, recommendations from eye care specialist and vision recheck within two years.
- 20/60 better eye, 20/60 or less other eye with/without corrective lenses = daylight driving only, recommendations from eye care specialist, vision recheck within two years.
- 20/60 better eye, 20/70 or less other eye with/without corrective lenses = daylight driving only, recommendations from eye care specialist, vision recheck within one year.
- Vision worse than 20/60 OU but better than 20/70 OU with/without corrective lenses = daylight driving only, recommendations from eye care specialist, vision recheck within one year, must perform road test with examiner, report any eye disease or injury.
- 20/70 or 20/80 better eye, 20/80 - 20/100 other eye with/without corrective lenses = daylight driving only, recommendations from eye care specialist, vision recheck within one year, perform road test with examiner, report any eye disease or injury, glare resistance and glare recovery ability (for daylight driving only).

OHIO

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or 20/30 monocular, with/without corrective lenses.
- Visual Field:**
- At least 70° temporal in each eye = unrestricted license.
 - <70° temporal in both eyes, but at least 70° temporal and 45° nasal in the best eye (monocular vision) = right or left outside and inside rearview mirror and referred to eye care specialist for horizontal field test results.
- Visual Acuity - Restricted:**
- 20/50-20/70 OU with/without corrective lenses = daylight driving only.
 - 20/40-20/60 monocular with/without corrective lenses = daylight driving only.
 - Vision worse than 20/70 OU with/without corrective lenses = license denied.
 - Vision worse than 20/60 monocular, with/without corrective lenses = license denied.
 - Will allow biopic lenses under medical restriction that applicant is under the supervision of an eye care specialist who meets the minimum state requirements for licensing.

OKLAHOMA

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye (OS must be at least 20/30), with/without corrective lenses.
 - Must have 20/30 in one eye if other eye is 20/200 or worse.
 - 20/60 OU or 20/50 in one eye with/without corrective lenses after seeing a vision specialist.
- Visual Field:**
- Not required.
- Visual Acuity - Restricted:**
- 20/40 OD and corrective lenses will correct vision to 20/70 OS = must have left outside rearview mirror if glasses are not worn or can just wear corrective lenses and no restriction is placed.
 - 20/40 OD and 20/100 OS = must have left outside rearview mirror.
 - 20/30 OD and corrective lenses will correct vision to 20/70 OS = must have left outside rearview mirror if glasses are not worn or can just wear corrective lenses and no restriction is placed.
 - 20/30 OD and 20/200 OS = must have left outside rearview mirror.
 - 20/50 OD and 20/100 or worse OS = must have left outside rearview mirror.
 - Telescopic lenses are not allowed unless the individual meets the minimum visual standard with the carmer lens.

OREGON

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without corrective lenses.
- Visual Field:**
- >110° horizontal.
- Visual Acuity - Restricted:**
- Vision worse than 20/40 but better than 20/70 in the better eye with/without corrective lenses = daylight driving only.

PENNSYLVANIA

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without corrective lenses.
- Visual Field:**
- 140° horizontal.
- Visual Acuity - Restricted:**
- 20/40 monocular = must have outside rearview mirrors.
 - 20/70 with best correction = daylight driving only.
 - 20/100 with best correction = daylight driving only.
 - Must pass a complete visual exam including visual field test annually and driver's exam. Driver will be limited to roads other than freeways, driving vehicles weighing no more than 10,000 pounds, no motorcycles, driving within a predetermined area by the DOT, with annual review of vision.

- Visual Field:**
- Not required.
- Visual Acuity - Restricted:**
- No restricted licenses issued.

SOUTH CAROLINA

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without glasses.
 - At least 20/70 OU with glasses and statement from vision specialist. Also, if good eye is at least 20/70, the worse eye must be 20/200 or better. If the worse eye is less than 20/200, the better eye must be at least 20/40 for an unrestricted license.
 - Telescopic/biopic lenses are acceptable as long as visual standards are met through the carmer lens.
- Visual Field:**
- Not required.
- Visual Acuity - Restricted:**
- Qualified drivers but blind in OS = left outside mirror.
 - Depending on recommendations from an eye care specialist, the medical advisory board will determine limitations as to speed, area, daylight only and interstate driving for drivers without standard visual acuity. There is no state code, just a department policy that is followed.

SOUTH DAKOTA

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU but no worse than 20/50 in either eye with/without corrective lenses.
- Visual Field:**
- Not required.
- Visual Acuity - Restricted:**
- 20/40 OS and 20/70 OD with/without correction = left outside rearview mirror.
 - 20/60 OU with/without corrective lenses = restrictions from eye care specialist may include: daylight driving only, no driving outside the city limits, left outside rearview mirror, and not to exceed a 50 mile radius of residence.

TENNESSEE

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without corrective lenses.
 - With a completed form from an eye care specialist, 20/60 OU or each eye separately with/without corrective lenses.
- Visual Field:**
- Not required.
- Visual Acuity - Restricted:**
- 20/40 in one eye and 20/60 to blind in the other eye with/without corrective lenses = both outside rearview mirrors.
 - Telescopic lenses are acceptable when procedures for qualifications of low vision guidelines are followed. Low vision restrictions as deemed necessary by board may include:
 - a) daylight driving only,
 - b) maximum speeds of 50 mph,
 - c) outside rearview mirrors (right and left),
 - d) certain area and time restrictions, and
 - e) no interstate driving.

TEXAS

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU without corrective lenses.
 - 20/50 OU or with best eye (any score other eye) with corrective lenses.
 - 20/25 monocular without corrective lenses.
 - Color blindness is checked on all original applications.
- Visual Field:**
- Not required.
- Visual Acuity - Restricted:**
- 20/60-20/70 with corrective lenses = daylight driving only, 45 mph speed limit, and any other advisable restriction.
 - Vision less than 20/25 monocular without corrective lenses = refer to eye care specialist.

UTAH

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without corrective lenses.
- Visual Field:**
- At least 120° horizontal and 20° vertical, above and below fixation, in each eye.
 - >90° total OU = no license issued.
- Visual Acuity - Restricted:**
- 20/50-20/70 in the better eye and visual field of at least 120° for both eyes, stable pathology = speed limitations with license renewal as recommended by eye care specialist.
 - 20/50-20/70 in the better eye and visual field of at least 120° for both eyes, unstable pathology = speed and area limitations with annual review for license renewal.
 - 20/80-20/100 in the better eye and visual field of at least 90° for both eyes, stable pathology = speed, area and time of day restrictions as recommended by eye care specialist and approval by the medical advisory board with annual review for license renewal.
 - 20/80-20/100 in the better eye and visual field of at least 90° for both eyes, unstable pathology = speed, area and time of day restrictions as recommended by eye care specialist and approval by the medical advisory board with review for license renewal every six months.
 - Telescopic lenses are not permitted.

VERMONT

- No restricted licenses issued.

VIRGINIA

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without corrective lenses.
- Visual Field:**
- >110° horizontal visual field in one or both eyes.
 - <110° but >70° horizontal vision = daylight driving only.
 - Monocular >40° temporal and 30° peripheral horizontal vision = daylight driving only.
- Visual Acuity - Restricted:**
- 20/70 OU or in the better eye = daylight driving only.
 - Biopic telescopic lenses acceptable with special visual requirements. Recommendations from an eye care specialist will be evaluated by the medical review department to determine if license is issued.

WASHINGTON

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without corrective lenses.
- Visual Field:**
- <110° total horizontal = applicant must have a reexamination. Re-examination includes screening vision, driving knowledge, and a road test. If able to compensate for visual field loss and pass all three tests, license will be issued with restriction of bilateral outside rearview mirrors.
- Visual Acuity - Restricted:**
- Vision worse than 20/90 = needs special examination to determine limitations and restrictions. Special examination = applicant meets with highly qualified personnel to determine driving need. State will allow restricted licenses, such as: daylight driving, limit of area and/or speed, and equipment (mirrors) depending on applicants' driving performance. A medical section uses department guidelines, but evaluates every individual on a case by case basis. Everyone is given a chance to prove their abilities.

WEST VIRGINIA

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU or in the better eye, with/without corrective lenses.
- Visual Field:**
- Not required.
- Visual Acuity - Restricted:**
- 20/50 OU or in one eye with/without corrective lenses = daylight driving only.

WISCONSIN

- Visual Acuity - Full Driving Privileges:**
- 20/40 in each eye with/without corrective lenses.
- Visual Field:**
- >70° = unrestricted license.
 - <70° from center in one eye temporal and >70° from center in the other eye = restricted to outside rearview mirror. Right outside rearview mirror restriction may be waived based on a successful driving demonstration.
 - <70° OU horizontal temporal = referred to eye care specialist for exam and advisory recommendations. Restrictions will be an outside rearview mirror and possibly driving during daylight hours only or in a limited area. These additional restrictions may be waived based on a driving demonstration or from the recommendation of the eye care specialist. The applicant must complete a driving evaluation.
- Visual Acuity - Restricted:**
- Vision worse than 20/40 OU but at least 20/60 in one eye = referred to eye care specialist for exam and advisory recommendations. Restrictions of daylight driving only or driving in a limited area may be assigned.
 - Vision worse than 20/60 in one eye but better than 20/100 in the other eye = referred to eye care specialist for exam and advisory recommendations. Restrictions of daylight hours or driving in a limited area may be assigned. The applicant must complete a driving evaluation.
 - Special restricted operator's license for visions between 20/100 and 20/200 (but not including 20/200 in the better corrected eye) = daylight driving only. Additional restrictions may also be applied.

WYOMING

- Visual Acuity - Full Driving Privileges:**
- 20/40 OU with/without corrective lenses.
- Visual Field:**
- >120° combined horizontal.
- Visual Acuity - Restricted:**
- 20/40 better eye, but worse than 20/40 other eye with/without correction or monocular = outside rearview mirrors.
 - Vision worse than 20/40 OU with best possible correction = restrictions of daylight driving only, speed and area may be imposed as deemed necessary.
 - Vision worse than 20/100 OU with/without corrective lenses = license denied.
 - Vision worse than 20/100 in the carmer lenses of a person wearing biopic, telescopic or other low vision aid built or attached to regular glasses = license denied.

Compiled from individual state Department of Transportation documents of standards, policies regulations, and personal communications/conversations with medical board members and licensing personnel from all 50 states and the District of

2

APPENDIX 5
VISUAL STATEMENT



Rehabilitation Services at Beaumont

Driver Rehabilitation Program Satisfactory Statement of Exam

Name _____

Address _____

Home Phone () _____ Work Phone () _____

In regards to the request to resume safe independent driving, a signed satisfactory statement of examination from my Ophthalmologist or Low Vision Specialist must be completed specifically addressing the following visual areas related to driving.

We are unable to perform the pre-screen or on-the-road evaluation without first obtaining the signed satisfactory statement of examination. If state requirements are not met, a waiver must be granted by our Ophthalmologist or Low Vision Specialist before proceeding with the driving pre-screen and subsequent on-the-road evaluation.

Diagnosis: _____

corrective lens yes _____ no _____
telescopic lens yes _____ no _____

	Right	Left	Both	Comments
Corrected Visual Acuity				
Visual Fields				
Peripheral Vision				
Saccades				
Range of Motion				

	Intact	Impaired	Comments
Color Vision			
Night Vision/Glare Recovery			
Depth Perception			
	Absent	Present	
Diplopia			

Signature _____

Physician name (print or type) _____

Date of Exam _____

Address _____

Phone number _____



APPENDIX 6
PHYSICIAN'S STATEMENT

EXAMPLE 1



Rehabilitation Services at Beaumont

Driver Rehabilitation Referral

Name _____ Date of Birth _____
Address _____
Home Telephone () _____ - _____ Work Telephone () _____ - _____
Referral Source _____
Driver's License yes ___ no ___ if yes license # _____ Exp. Date _____

Please indicate the physician to whom this form should be sent for completion.
Name (Print or Type) _____ M.D. or D.O.
Address _____ Telephone () _____ - _____
Current Diagnosis _____ Onset Date _____

Medical History

- () Epilepsy
- () Narcolepsy
- () Substance Abuse: has a period of abstinence or control been established? _____
- () Cerebral Vascular Disease
- () Cerebral Insufficiency
- () Traumatic Brain Injury
- () Tumor (Location) _____
- () Psychiatric Disorder:Diagnosis _____
- () Learning Disability
- () Neuromuscular Disease:Diagnosis _____
- () Progressive Neurological Disease:Diagnosis _____
- () Diabetes or other Metabolic Disorder _____
- () Hypertension
- () Peripheral Vascular Disease
- () Other

Has patient had a seizure or "episode" (as defined by MI State law) within last 6 months? No ___ Yes ___
"Episode" condition which causes or contributes to any of the following: a lapse of consciousness, blackout, seizure, fainting spell, syncope, other impairment of the level of consciousness a condition which causes or contributes to an impairment of an individual's driving judgment or reaction time or affects an individual's ability to safely operate a motor vehicle.
Current medication and dosage: _____

Do I recommend any driving restrictions? Please specify: _____

PHYSICIAN SIGNATURE _____ Dated _____



EXAMPLE 2

MICHIGAN DEPARTMENT OF STATE
LANSING, MI 48918-1601
PHONE: (517) 322-1571 / FAX: (517) 322-6076

MARY FREE BED HOSPITAL
AND REHABILITATION CENTER
235 WEALTHY STREET, SE
GRAND RAPIDS MI 49503-5299

PHYSICIAN'S STATEMENT OF EXAMINATION

INSTRUCTIONS FOR DRIVER/APPLICANT:

The Department of State has received information that you may be afflicted with a physical or mental condition that may affect your ability to safely operate a motor vehicle. Please have your physician complete this form. The completed form must be returned to the above address. It cannot be processed at a local licensing bureau.

PLEASE NOTE: The Department of State may withhold licensing pending receipt and evaluation of this form. Unsigned or incomplete forms will be returned for completion. Highlighted areas must be completed for statement to be processed.

RELEASE OF INFORMATION

(please Print or type)
I hereby authorize and request that information regarding my physical and psychological condition be released to the Michigan Department of State.

Signature _____

DATED _____

Street _____

Date of Birth _____

City _____

State _____

Zip _____

Telephone No. _____

INSTRUCTIONS FOR PHYSICIAN:

The Department of State asks your assistance in determining the physical and/or mental condition of your patient. Your professional opinion, the answers to these questions and any other pertinent information will help the Department assess this individual's ability to safely operate a motor vehicle. Information may be mailed directly to the Department at the address shown in the instructions to Driver above.

Please type or print your answers and attach EG or EKG evaluations if applicable. You need only fill out the section(s) indicated or pertinent to this person.

- Neurological or Neuromuscular Diseases - page 2
- Other Medical Disorders - page 3 & 4
- Drugs and Alcohol - page 4
- Psychological Evaluation - page 5
- Comments - page 6

certification by physician's signature is required on page 6.

FOR DEPARTMENT USE ONLY

Favorable set up _____

Restriction _____

Must Pass _____ test.

Unfavorable _____

Questionable _____



NEUROLOGICAL AND NEUROMUSCULAR DISEASE

I. DISEASE CAUSING LOSS OR IMPAIRMENT OF CONSCIOUSNESS OR CONFUSION

- () Epilepsy - Type: _____
- () Narcolepsy
- () Alcoholism - Also complete Alcohol and Drug Section on page 4
- () Cerebral Vascular Disease-Also complete Atherosclerosis/Heart Disease: Section page 3
- () Cerebral Insufficiency-Also complete Atherosclerosis/Heart Disease: Section page 3
- () Vasovagal Syncope _____
- () Other (Open & closed head injuries, craniotomies, etc.) _____

- A. Age at onset of illness: _____
- B. Has patient reported seizure or attack within last 6 months? No ____ Yes ____ 12 months? No ____ Yes ____
 - (i) Date of last episode: _____
 - (ii) Frequency of seizures or attacks: _____
- C. Current medication and dosage: _____
- D. Is there a reasonable medical certainty that the last seizure or attack resulted from a medically supervised change in medication or dosage? No _____ Yes _____
If yes, please explain: _____
- E. Has patient had any adverse or other reaction to treatment or medication? If yes, please explain: _____

II. OTHER LIMITING OR PROGRESSIVE NEUROLOGICAL OR NEUROMUSCULAR DISEASES, (CEREBRAL PALSY, PARAPLEGIA, MUSCULAR DYSTROPHY, PARKINSONISM, MULTIPLE SCLEROSIS, ETC.)

- A. Specific diagnosis: _____
- B. Age at onset of illness: _____
- C. Please describe patient's neurological or neuromuscular condition. Is the condition likely to change in the future?

- D. Current medication and dosage: _____
- E. Is the patient's condition or disease adequately controlled with medication?
No ____ Yes ____

OTHER MEDICAL DISORDERS

I. DIABETES AND OTHER METABOLIC DISORDERS

A. Type #1 _____ Type #2 _____ Age at onset _____
 Insulin Injections: No _____ Yes _____ Strength _____ Frequency _____
 Does Patient follow diet instructions? No _____ Yes _____ Comments _____

Is the patient responsible in the management of the disease? No _____ Yes _____

Comments _____

3. Reaction episodes - those causing loss of or impairment of level of consciousness:

Hypoglycemic No _____ Yes _____ Frequency _____

Hyperglycemic No _____ Yes _____ Frequency _____

Renal Disease No _____ Yes _____ BUN _____

Creatinine _____

Was the episode unusual in nature for this driver? No _____ Yes _____

Please explain _____

D. Date of last episode _____

Symptoms:

Impairment of level of consciousness No _____ Yes _____

Loss of Motor Skills No _____ Yes _____

Loss of Judgment No _____ Yes _____

Required Assistance from others No _____ Yes _____

Difficulty Recalling the episode No _____ Yes _____

* Please describe any yes responses _____

Was patient's condition stabilized? No _____ Yes _____

E. Is there reasonable medical certainty that the last reaction episode resulted from a medically supervised change in medication or dosage? No _____ Yes _____

Please explain _____

Date of last blood glucose test: _____ Blood Glucose level: _____ Frequency of tests: _____

Vision Problems No _____ Yes _____ Please describe _____

ATHEROSCLEROSIS/HEART DISEASE

Diagnosis: _____

Peripheral vascular disease: No _____ Yes _____ Location of disease, i.e., arms, legs, etc., and extent of disability: _____

Cerebral vascular disease: No _____ Yes _____

Coronary vascular disease: No _____ Yes _____

Angina: No _____ Yes _____ Frequency _____ Date of Onset _____

During Driving No _____ Yes _____

Dyspnea: No _____ Yes _____

Syncope: No _____ Yes _____ Near Syncope or Confusion: No _____ Yes _____

Frequency _____

Arrhythmia: No _____ Yes _____ Frequency _____ Type _____

Infarction: No _____ Yes _____ Dates _____

Congestive Failure: No _____ Yes _____ Ever: No _____ Yes _____

Pacemaker: No _____ Yes _____

Hypertension: No _____ Yes _____ Blood Pressure: _____

Heart Rate: _____

OTHER MEDICAL DISORDERS (con't)

- E. Medication and Dosage _____
Has patient had any adverse or other reaction to medication or treatment for condition?
If yes, please explain: _____
- G. Has patient reached maximum recovery period? _____ If no, expected date: _____
Functional Classification: I II III IV
Therapeutic Classification: A B C D E
- H. Is the above condition medically treatable? _____
- I. Please describe how this condition may affect the patient's ability to drive safely. _____

III GENERAL MEDICAL CONDITONS (conditions not covered in other sections)

- A. Diagnosis _____
- B. Current medication and dosage: _____
- C. Has the patient had any adverse or other reaction to treatment or medication? No _____ Yes _____

DRUGS AND ALCOHOL

1. Does the patient have any clinical evidence or do you have personal knowledge of patient's addiction to habituation to drugs, alcohol or tranquilizers? No _____ Yes _____
Indicate drug and duration of addiction, etc.: _____

2. Has patient been subject to residential treatment or hospitalization for this condition? No _____ Yes _____
Dates of treatment or hospitalization: _____
3. Is patient currently under therapy? No _____ Yes _____ Where? _____
Duration and frequency of therapy: _____
4. Is there evidence of physical complications from alcohol or drug abuse: No _____ Yes _____
Please explain: _____

5. Has patient been advised to abstain from addicted substance? No _____ Yes _____
6. Has patient followed your recommendations for treatment and therapy? No _____ Yes _____
7. Has patient been prescribed antabuse? No _____ Yes _____
8. Is patient's antabuse therapy monitored? No _____ Yes _____
By whom and frequency? _____
9. Has a period of abstinence or control been established? Please describe: _____

10. What is your prognosis for this condition? _____

PSYCHOLOGICAL EVALUATION

1. Diagnosis of psychiatric illness: _____

Which of the following symptoms are present? (Please Check)

- | | | |
|--|---|---|
| <input type="checkbox"/> Anxiety | <input type="checkbox"/> Paranoid ideation | <input type="checkbox"/> Hallucinations |
| <input type="checkbox"/> Depression | <input type="checkbox"/> Suicidal Impulses | <input type="checkbox"/> Impairment of judgment |
| <input type="checkbox"/> Euphoria | <input type="checkbox"/> Homicidal impulses | <input type="checkbox"/> Poor Memory |
| <input type="checkbox"/> Poorly controlled anger | <input type="checkbox"/> Insomnia | <input type="checkbox"/> Mental retardation |
| <input type="checkbox"/> Bizarre behavior | <input type="checkbox"/> Delusions | <input type="checkbox"/> Senility or Dementia |
| <input type="checkbox"/> Other _____ | | |

Please amplify on any of the above or other disorders. Include approximate duration of illness, severity of illness, treatment and prognosis: _____

2. Current medication and dosage: _____

3. Any adverse or other reactions to medication, treatment or therapy? Please explain: _____

a. Does medication make patient drowsy? No _____ Yes _____

b. Is patient capable of safely operating a motor vehicle while taking the above prescribed medication(s)?

No _____ Yes _____ Please explain: _____

4. Has patient ever been hospitalized for the disorder? No _____ Yes _____ Please indicate when, where and for how long: _____

5. Frequency of therapy: _____

6. Do you believe this patient is capable of safely operating a motor vehicle? No _____ Yes _____

Please explain: _____

7. Does the patient follow your medical and psychiatric recommendations? No _____ Yes _____

Please explain: _____

COMMENTS

How long has this patient been under your treatment? _____
 Frequency of visits _____
 Date of last visit: _____

2. Was patient referred to you by another doctor? No _____ Yes _____ If yes, please indicate name and address of referring doctor: _____

3. Have you referred the patient to another medical specialist for diagnosis or treatment? No _____ Yes _____ If yes, please indicate name and address of doctor to whom referred and results of consultation: _____

4. Has patient followed your medical recommendation? No _____ Yes _____
 a. Does the patient keep appointments? No _____ Yes _____
 b. Does the patient take medication as prescribed? No _____ Yes _____

5. Has the patient ever had occupational or physical therapy for the condition in question? No _____ Yes _____ If yes, what date(s), where and for how long? _____

6. Do you recommend that the Department request a statement of your patient's:
 Psychological Condition? No _____ Yes _____
 Visual Acuity? No _____ Yes _____

7. Any adverse or other reactions to medication, treatment or therapy? Please explain: _____

a. Does medication make patient drowsy? No _____ Yes _____
 b. Is patient capable of safely operating a motor vehicle while taking the above prescribed medication(s)?
 No _____ Yes _____ Please explain: _____

8. Do you recommend any driving restrictions? No _____ Yes _____ If yes, please specify: _____

9. Do you recommend the Dept. conduct a periodic driving evaluation? No _____ Yes _____ How often: _____

10. Should the Dept. require periodic medical evaluation to monitor changes which may affect driving?
 No _____ Yes _____ How often? _____

11. Please include any additional information you feel will help in assessing your patient's ability to safely operate a motor vehicle: _____

CERTIFICATION

I certify that the statements contained in this statement of examination are true to the best of my knowledge and belief.

DOCTOR'S SIGNATURE _____ DATED _____
 Name (Print or Type) _____ M.D. or D.O.
 Address _____

Professional License No. _____ Telephone No. () _____
 Type of Practice or Medical Specialty _____

APPENDIX 7
HISTORY FORM

EXAMPLE 1

MARY FREE BED HOSPITAL AND REHABILITATION CENTER
DRIVER REHABILITATION SERVICES

I N T A K E F O R M

NAME _____ BIRTHDATE _____

FIRST MIDDLE LAST

HOW DID YOU LEARN ABOUT OUR PROGRAM? _____

DO YOU HAVE A CURRENT VALID DRIVER'S LICENSE? YES ___ NO ___

LICENSE # _____

CHECK ALL THAT APPLY:

___ EXPIRED

___ LOST

___ PERMIT

MEDICAL INFORMATION:

DIAGNOSIS: _____ ONSET: _____

RESULTING FROM: _____

CURRENT EFFECTS OF MEDICAL CONDITION: _____

HISTORY OF DRUG/ALCOHOL ABUSE? YES ___ NO ___

HAVE YOU EVER HAD SEIZURES OR PERIODS OF BLACKOUTS? YES ___ NO ___

IF YES, DATE OF LAST INCIDENT _____

ARE YOU CURRENTLY TAKING ANY MEDICATIONS? YES ___ NO ___

IF YES, PLEASE LIST: _____

LIST ANY SIDE EFFECTS: _____

VISION:

DO YOU WEAR GLASSES OR CONTACTS? _____ BIFOCALS/TRIFOCALS? _____

WHEN WAS YOUR LAST VISION EXAM WITH AN EYE DOCTOR? _____

HAVE YOU NOTICED ANY CHANGES IN YOUR VISION SINCE THEN? _____

DO YOU HAVE ANY VISION COMPLAINTS WITH YOUR CURRENT EYEGGLASS
PRESCRIPTION? _____

HAVE YOU HAD ANY PROBLEMS WITH:

___ BLURRING ___ DOUBLE VISION ___ EYE STRAIN/HEADACHES

___ MISSING OBJECTS ON ONE SIDE

___ DIFFICULTY CONCENTRATING ON TASKS

DO YOU HAVE ANY PROGRESSIVE EYE DISEASE?

___ CATARACTS

___ MACULAR DEGENERATION

GLAUCOMA OTHER _____
HAVE YOU HAD ANY EYE SURGERIES? YES ___ NO ___

IF YES, LIST DATE AND TYPE _____

SUSPENDED RESTRICTED OUT OF STATE

DRIVING EXPERIENCE:

HOW MANY YEARS HAVE YOU BEEN DRIVING? _____

WHEN WAS THE LAST TIME YOU DROVE? _____

DO YOU HAVE ANY CONCERNS ABOUT YOUR DRIVING? _____

IF SO, WHAT? _____

DOES ANYONE ELSE HAVE CONCERNS REGARDING YOUR DRIVING? _____

IF SO, WHAT? _____

WHAT TYPE OF DRIVING DO YOU HOPE TO RETURN TO? (ie. day/night,
limited area/long distance) _____

HAVE YOU BEEN INVOLVED IN ANY MOTOR VEHICLE ACCIDENTS? YES ___ NO ___

IF YES, PLEASE DESCRIBE IN THE SPACE BELOW

HAVE YOU HAD ANY TRAFFIC VIOLATIONS? YES ___ NO ___

IF YES, PLEASE DESCRIBE IN THE SPACE BELOW

VEHICLE INFORMATION:

WHAT TYPE OF VEHICLE DO YOU OWN? _____

CHECK ALL THAT APPLY:

2 DOOR AUTOMATIC TRANSMISSION POWER STEERING

4 DOOR STANDARD TRANSMISSION POWER BRAKES

POWER BRAKES

WILL YOU CONTINUE TO USE THIS VEHICLE FOR DRIVING? YES ___ NO ___

MOBILITY:

ARE YOU ABLE TO WALK WITHOUT ASSISTANCE? YES ___ NO ___

IF NO, CHECK ALL THAT APPLY:

WHEELCHAIR-MAN./ELEC. BRACES

CANE CRUTCHES WALKER OTHER _____

GENERAL INFORMATION:

EDUCATION: GRADE SCHOOL HIGH SCHOOL COLLEGE

WERE YOU EMPLOYED AT THE ONSET OF YOUR RECENT MEDICAL PROBLEM? _____

ARE YOU CURRENTLY EMPLOYED? _____ IF YES, WHERE AT? _____

WHAT IS YOUR CURRENT LIVING SITUATION?

___ LIVES ALONE ___ LIVES WITH FAMILY/ROOMMATE

___ OTHER

WHEN YOU ARE DRIVING, WILL YOU BE TRANSPORTING SMALL CHILDREN?

___ YES ___ NO IF YES, LIST AGES OF CHILDREN _____

IF YOU ARE NOT CURRENTLY DRIVING, WHAT ARE YOUR OPTIONS FOR TRANSPORTATION?

___ FAMILY/FRIENDS ___ PUBLIC TRANSPORTATION ___ TAXI

___ OTHER ___ WOULD LIKE MORE INFORMATION

ARE YOU CURRENTLY RECEIVING ANY TYPE OF THERAPY? YES ___ NO ___

IF YES, PLEASE INDICATE WHERE AND WHAT TYPE OF THERAPY:

(ie. OT, PT, ST, how often) _____

EXAMPLE 2

DRIVE TO INDEPENDENCE
Driver History & License Information

Client's Name _____
Michigan Drivers License #/Permit # _____ Expiration Date: _____
Current Restrictions: _____
 N/A Parent Permit # _____

VEHICLE TO BE DRIVEN: Make _____ Year _____ 2 Door / 4 Door

Transmission: _____ Automatic _____ Standard
Brakes: _____ Power _____ Standard
Steering: _____ Power _____ Standard
Seats: _____ Bucket _____ Bench (Split)
Other Options: _____

Are you a dual foot driver? Y/N _____
Is vehicle adapted already? Y/N By whom? _____
Is insurance current? _____

DRIVER HISTORY

When did you last drive? _____
Have you taken Drivers Education? Y/N _____
How many years experience have you had driving? _____
Which blocks of time do you drive the most? _____

Do you drive at night? Y/N Do you use the freeways? Y/N _____
What types of roadways do you intend to drive on? _____

Have you ever been previously licensed to drive in any other state? Y/N _____
Have you ever had your driver's license revoked? Y/N If so, why? _____

Number of traffic collisions involved in as a driver: _____ Describe: _____

Total traffic violations within the past 3 years: _____
Note type of violation(s): _____

Driver Needs:

- To get to school or vocation
- To get to a job. Occupation: _____
- Job requires driving vehicle. Occupation: _____
- To be independent in the community
- Drive children
- _____

Do you have any concerns about your ability to drive? _____

Driver goals: _____



APPENDIX 9

PRE-SCREENING TESTS

MOTOR FREE VISUAL PERCEPTION TEST (MVMP): This test is given to evaluate visual perception and processing time. The MVMT test is a 36 item, timed test of visual perception that includes assessment of spatial relations, figure ground, form consistency visual discrimination, and visual memory....It is not influenced by a lack of motor ability, and is standardized for the adult population. NOTE: TAKEN DIRECTLY FROM A DRIVING PROGRAM FOR THE VISUALLY IMPAIRED.

H CANCELLATION TEST: See page 35

LINE BISECTION TEST: See page 36

PORTO-CLINIC/GLARE TEST: This test is used to measure color recognition, depth perception, glare recovery, night vision and reaction time. Simple and complex subjective reaction time are measured utilizing an accelerator and brake simulator while the patient reacts to visual and auditory stimuli. NOTE: TAKEN DIRECTLY FROM A DRIVING PROGRAM FOR THE VISUALLY IMPAIRED.

GROMMET MANIPULATION TEST: This test uses a device that the patient grips and tries to move a small object through a maze. It entails eye-hand coordination.

TITMUS VISION TEST: This test can be used to measure a patient's acuities and depth perception.

PRE-SCREENING TESTS (CONT.)

H CANCELLATION TEST

H D F C H C F D I H G C B I H B A D H C F B H E D G H A I C H F B H A F H E B F B H D F C H C F D I H G X
G H G F D E D H F H C B H F A D H C E H I F D G H E B I H G B I H G B I H C E H B G H G F D E D H F H C B
H A B E F H C H A B D F G B C H D F C H D F C H A I N D C H B E H D G H A D F B B H A B E D H C H A B E F

H G A I C H F B H A F H E B F H C A D F H G E H B H D F C H F D I H G C B I H B D H G A I C H F B H A F H
E B H G B I H C E H A F C E H A F C H G F D F H E B G H G F H E D H F H C H F A H E B H G B I H C E H A F
C H B E H D G H A D F H B I H G E B G H D E H G B H A B E F H B C A D F G H B C D C H B E H D G H A D F H

This test is used to
assess visual
scanning skills and
detect unilateral
neglects, hemianopsias
and midline
orientation deficits.
NOTE: TAKEN DIRECTLY FROM A DRIVING
PROGRAM FOR THE VISUALLY IMPAIRED.

PRE-SCREENING TESTS (CONT.)

LINE BISECTION TEST

Beaumont

This test is used to assess visual scanning skills and detect unilateral neglects, hemianopsias and midline orientation deficits.
NOTE: TAKEN DIRECTLY FROM A DRIVING PROGRAM FOR THE VISUALLY IMPAIRED.



EXAMPLE 2
PRE-SCREENING FORM

DRIVE TO INDEPENDENCE
PROGRAM EVALUATION

Physical/Visual/Cognitive/Perceptual Assessment
Department of Occupational Therapy

Client's Name: _____ Date: _____
Diagnosis: _____ Physician: _____
Precautions: _____ Driver's Lic. # _____

SUBJECTIVE: Refer to Medical History and Activity of Daily Living Status form and Driver History and License Information form.

OBJECTIVE:

- | | |
|---|--|
| <input type="checkbox"/> Review contracts & consent forms | <input type="checkbox"/> Cognitive/Perceptual Assessment |
| <input type="checkbox"/> Obtain medical/driving history | <input type="checkbox"/> Road sign identification |
| <input type="checkbox"/> Physical Abilities assessment | <input type="checkbox"/> Range evaluation |
| <input type="checkbox"/> Visual assessment | <input type="checkbox"/> Road evaluation |

ASSESSMENT:

Physical Abilities;

Hearing: Intact Impaired

comments: _____

Speech: Intact Impaired

comments: _____

Orthotic Devices/Type: _____ **Location:** _____

Tone/Contractures/Deformities: _____

Mobility Status/Device: _____

Description of wheelchair/cart: _____

Endurance (subjective): _____

Brake Reaction Time (avg. 10 trials): _____ seconds
 Pass Fail Norm = .23 - .54 seconds

FUNCTIONAL MOVEMENT SKILLS	Within functional limits	Impaired	Unable
1. Turn Head Right			
2. Turn Head Left			
3. Rotate Trunk Right			
4. Rotate Trunk Left			
5. Sitting Balance (Dynamic)			

	Within functional limits		Impaired		Unable	
	R leg	L leg	R leg	L leg	R leg	L leg
Gross Coordination						
Sensation (deep pressure)						
Proprioception						

STRENGTH KEY	Body Segment	Right	Left
G = Complete range of motion gravity with minimal or more resistance applied	Shoulder		
	Elbow		
	Forearm		
F = Impaired ability to move against gravity and/or limited ROM present	Wrist		
	Grip		
P = Significant impairment in strength or unable to perform ROM	Hip		
	Knee		
	Ankle		

COMMENTS: _____

VISUAL ASSESSMENT

TEST AND METHOD	INTACT (record score)	IMPAIRED (record score)	NORMS
1. Binocular Pursuits			smooth & accurate
2. Static Saccades			rapidly locate target; rhythmic timing
3. Dynamic Saccades			rapidly locate target; rhythmic timing
4. Peripheral Fields (circle): • Optec 2000 • Confrontation • Humphrey • Eye Care Professional Exam			90 degrees or better meets Michigan State Guidelines
5. Fixation/Convergence (circle): • Optec 2000 • Confrontation			Dark Brown/Black Dot Maintain gaze for 20 sec. < 7 inches breakpoint
6. Binocular Acuity/Far Point (circle): • OPTEC 2000 • Snellen • Eye Care Professional Exam			20/50 or better meets Michigan State Guidelines
7. Color Discrimination (circle): • OPTEC 2000 • Ishihora			8/8 plates 8/8 digits
8. Vertical Phoria/Far : • Optec 2000			2 1/2 - 5 1/2 diaptors
9. Lateral Phoria/Far: • Optec 2000			3 1/2 - 13 1/2 diaptors
10. Binocular Acuity/Near • Optec 2000			
11. Lateral Phoria/Near • Optec 2000			3 1/2 - 13 1/2 diaptors
12. Road Sign Identification • Optec 2000			10/12 signs
13. Depth Perception • Optec 2000			3/3
14. Contrast Sensitivity			

comments: _____

*Complete this page for Neurological Diagnosis

COGNITIVE/PERCEPTUAL ASSESSMENT			
TEST AND SKILL	PASS	FAIL	PASSING SCORE
1. Paragraph Recall • Short Term Auditory Memory			7/15
2. Road Sign recall • Long Term Auditory Memory			3/3
3. Right/Left Discrimination			5/5
4. WAIS-R Digit Symbol • rapid visual perception • motor speed • coordination • speed of motor operations • visual short term memory			39 ± 6
5. WAIS-R Picture Completion • visual perception • attention to detail • differentiate essential from non-essential detail			13 ± 3
6. Design Copying • Constructional ability			3/3
7. Unilateral Inattention			3/3
8. Mesulum - SCANNING / ATTEND; SCAN PATTERN; DISTRACTABILITY			58/60
10. Trail Making Test A • simple and complex sequencing, visual scanning, and visual motor coordination			10 - 58 seconds No errors
11. Trail Making Test B • simple and complex sequencing, visual scanning, and visual motor coordination			25 - 159 seconds No errors

COMMENTS: _____

PLAN: _____

SIGNATURE: _____, OTR

COGNITIVE/PERCEPTUAL ASSESSMENT

PARAGRAPH RECALL SHORT TERM AUDITORY MEMORY

Paragraph Memory Test

Charles Houseman / a 50 year old / computer programmer / from Queens / New York / was driving to Manhattan / in his brand new / Mercedes. / He was hit from the rear. / He sustained no injuries / nor any damages / to his car. / A harmless incident. / He continued his trip / to the health club./

Items recalled _____

Right/Left Discrimination

1. Show me your left hand.
2. Show me your right eye.
3. Show me your left foot.
4. Show me your left shoulder.
5. Show me your right elbow.

COGNITIVE/PERCEPTUAL ASSESSMENT

WAIS-R DIGIT SYMBOL TEST

RAPID VISUAL PERCEPTION

MOTOR SPEED

COORDINATION

SPEED OF MOTOR OPERATIONS

VISUAL SHORT TERM MEMORY

10. DIGIT SYMBOL

1	2	3	4	5	6	7	8	9	SCORE
—	⊥	□	L	U	O	^	X	=	<input type="text"/>

SAMPLES

2	1	3	7	2	4	8	2	1	3	2	1	4	2	3	5	2	3	1	4	5	6	3	1	4

1	5	4	2	7	6	3	5	7	2	8	5	4	6	3	7	2	8	1	9	5	8	4	7	3

6	2	5	1	9	2	8	3	7	4	6	5	9	4	8	3	7	2	6	1	5	4	6	3	7

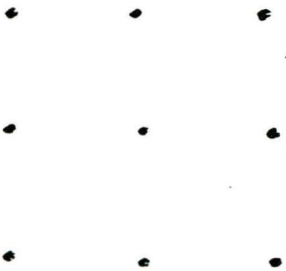
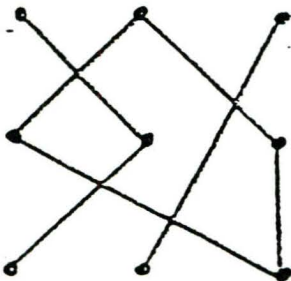
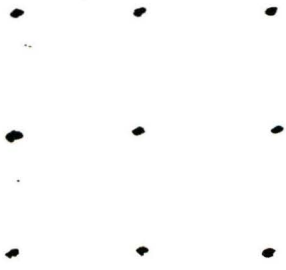
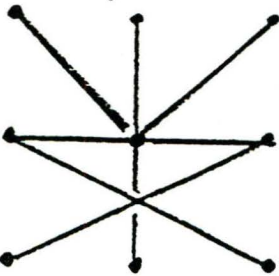
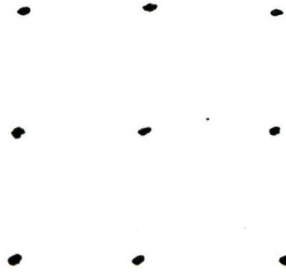
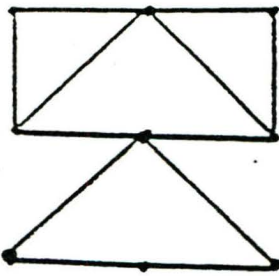
9	2	8	1	7	9	4	6	8	5	9	7	1	8	5	2	9	4	8	6	3	7	9	8	6

looking @ processing.

COGNITIVE/PERCEPTUAL ASSESSMENT

DESIGN COPYING
CONSTRUCTIONAL ABILITY

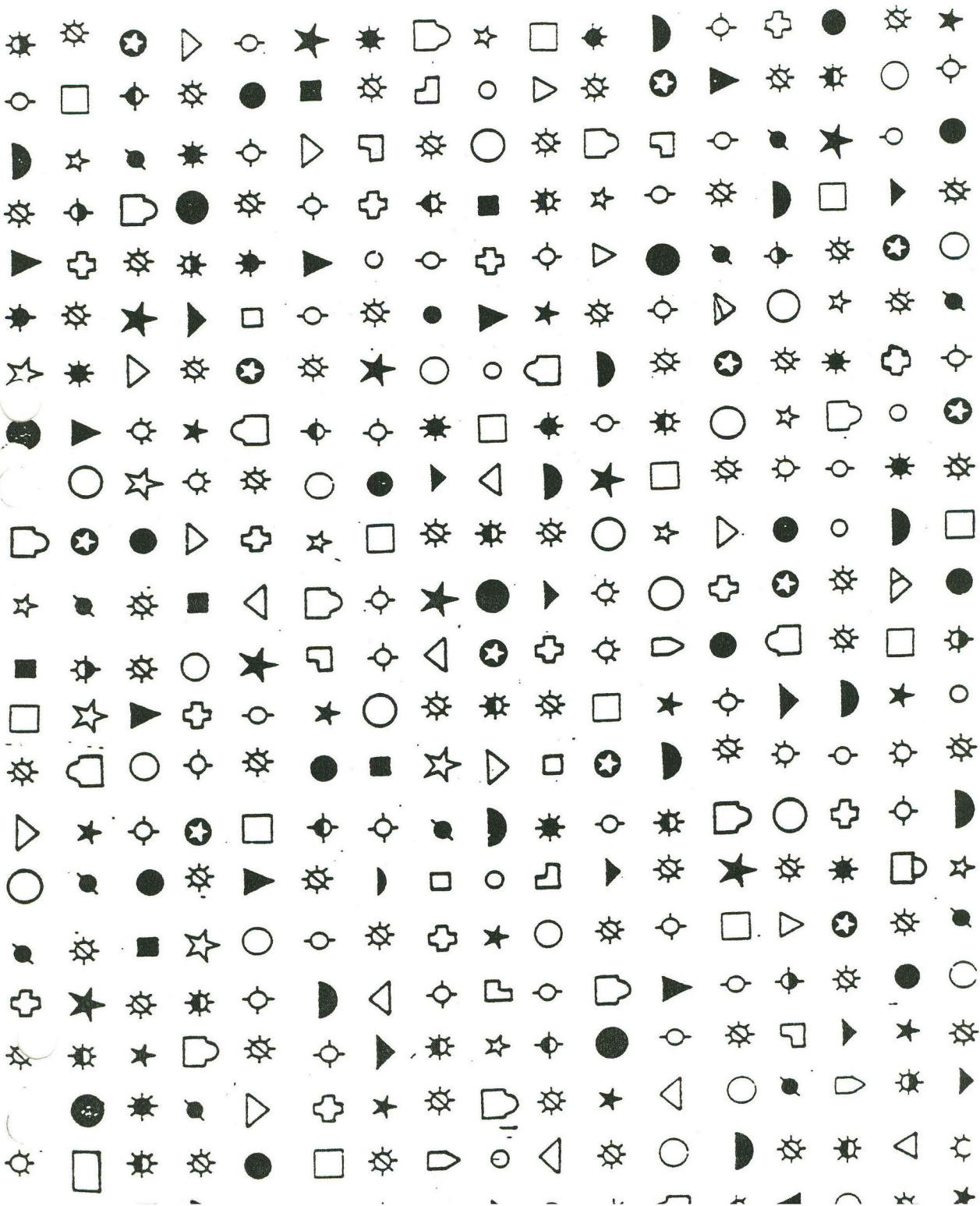
SPATIAL RELATIONSHIPS



COGNITIVE/PERCEPTUAL ASSESSMENT

MESULUM

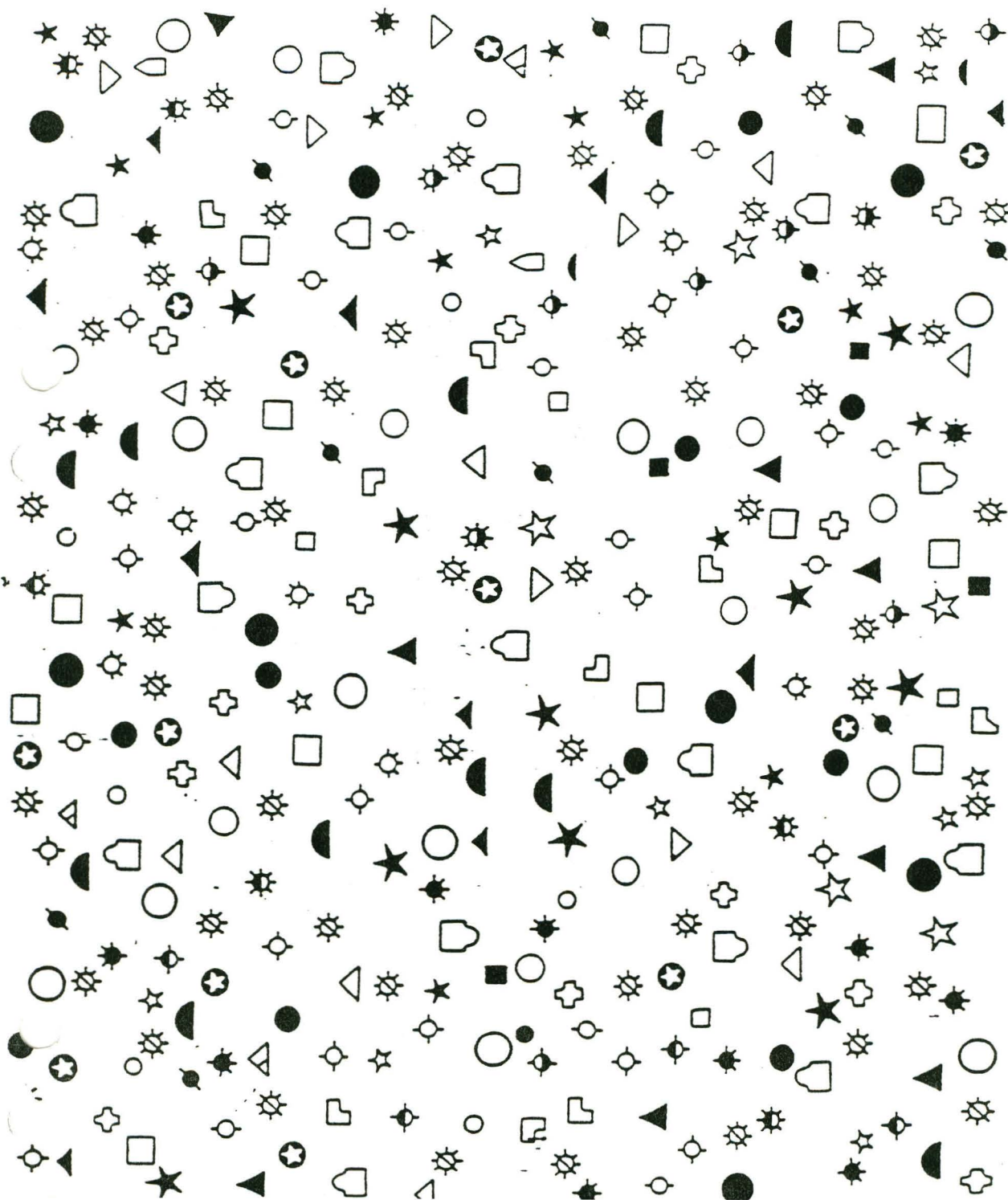
SCANNING/ATTEND
SCANS FOR PATTERN



COGNITIVE/PERCEPTUAL ASSESSMENT

MESULUM

SCANNING/ATTEND
SCANS FOR PATTERN



COGNITIVE/PERCEPTUAL ASSESSMENT

TRIAL MAKING TEST A

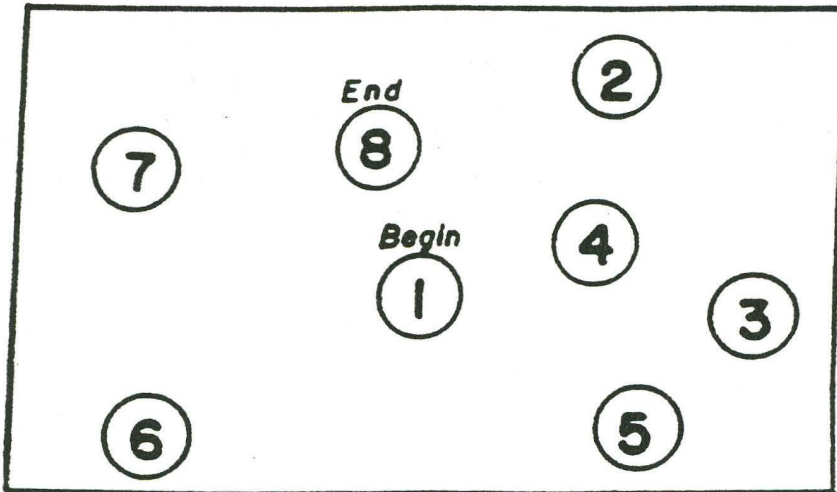
SIMPLE AND COMPLEX SEQUENCING
VISUAL SCANNING
VISUAL MOTOR COORDINATION

TRAIL MAKING

ADULT FORM

Part A

SAMPLE



COGNITIVE/PERCEPTUAL ASSESSMENT

TRIAL MAKING TEST B

SIMPLE AND COMPLEX SEQUENCING
VISUAL SCANNING
VISUAL MOTOR COORDINATION

TRAIL MAKING

Part B

SAMPLE

