OCUTECH® Sight Enhancement Technology

Enhancing Distance Vision of the Visually Impaired Using Bioptic Telescopes

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Introduction:

This paper presents a practical approach to evaluating visually impaired individuals for the prescription of bioptic telescopes. It teaches a clinical protocol for the assessment of an individual's visual needs, clinical methods for determining appropriate patients, and for establishing a prognosis for likely success. Methods for fitting and training patients and practice management tips are also included.

Challenges of Low Vision Care

The major optical goal in low vision care for central vision loss is to magnify the image sufficiently to make it discernable by the patient. Patients know that moving closer or using larger print can be helpful—that magnification helps. However, magnification can minimize the field of view, distort the image, shorten the working distance, and constrain the depth of field—all of which work to make magnified vision more challenging to use.

The activity distance determines the type of management

Optical magnification requires that the material to be viewed be held at the focal length of the optical system. For hi-add readers and magnifiers this is usually much closer than the habitual working distance of the patient, but with training and practice the patient can usually thrive. Conversely, some activities must be performed at distances defined by the activity such as reading computer screens, cooking, reading music, seeing faces, theater, TV, bus, building and street signs, blackboards, and traffic signals for example. In activities such as these the optical device must provide a working distance supportive of the activity— and magnify the image enough for the user to be able to resolve it. This is usually accomplished using telescopic aids-- either focusable versions or fixed focus versions with reading caps attached to the front selected for specific working distances. Of course, there are instances where simply moving close enough is an option, but when that is impossible, impractical or inappropriate, telescopic aids provide the only option.

Distance vision is a social activity

Distance vision is often a public activity, and it supports social interaction and quality of life. The loss of the ability to see body language and make eye contact can be isolating and can contribute to depression amongst the visually impaired. Loss of distance vision usually impacts independence and self-worth much more so than loss of reading and it cannot be readily replaced through other modalities.

Refraction--our first option to improve distance vision.

Of course, refraction is our first option to enhance distance vision. If we can make a sufficient improvement in acuity by refraction, (usually a two-line improvement is required for the patient to experience a functional gain), than obviously that should be our first and most convenient option. A brief retinoscopy through the current eyeglasses (if any) can be valuable to see how close to neutral the reflex is as well as its quality. (Only perform retinoscopy briefly. If you spend too much time you'll bleach the retina which will often delay and undermine the exam.) If the reflex is dull due to media issues, likely corneal or lens opacities, consider therapeutic options that might improve it. No amount of lens power or magnification will impact acuity if there are significant media opacities. If the patient has had cataract surgery with IOLs, it is unlikely that they will have a significant refractive error. If they do, there is often an astigmatic component.

Generally, by the time a patient visits a low vision practitioner, if a new refraction would have been of value, it would have already been prescribed. Remember, small changes don't make big improvements! If a patient sees 20/400 (6/120) a half diopter or 10 degree axis change will be of little value. Changes in refraction will have more potential impact when acuity is 20/80 (6/25) or better as a modest change might yield 20/50 (6/15) and that can be helpful. Improving acuity from 20/400 to 20/300 (6/120 to 6/90) is unlikely to impact the patient's functional life. So, as a result I will spend more time refining a refraction when acuity is 20/80 (6/25) or better. I find keratometry can be a very valuable tool. The character of the mires as well as cylinder can often be missed and this data can sometimes make a difference in better seeing individuals.

I always use a trial frame as I find it more reliable and it allows for a better rapport with the patient. Trial frames are especially important with high cylinders, because it lets the patient maintain their normal head posture rather than an unnatural one induced by the phoropter, which can avoid a host of refraction hassles.

Remember to make a sufficient enough power change for the patient to notice. There's no use in making changes smaller than what the patient can reliably respond to-- everyone will just get frustrated and you'll not make any progress. Remember also that the high-contrast acuity chart is a poor determiner of functional value. It is much more helpful for the patient to look at a low contrast target such someone's face at the furthest distance that they can normally see it. If the patient can notice a difference, then it's likely to be of functional value. If they don't notice a difference than I don't usually pursue it further. Keep in mind that acuity can fluctuate as fixation varies. Don't let a fleeting acuity improvement fool you into thinking it's the refraction change that's helping. The prescription change has to be enough to make a "real" difference! Remember that if the patient can "almost see something" they still can't see it! So, don't change eyeglass prescriptions unless it is "enough to matter."

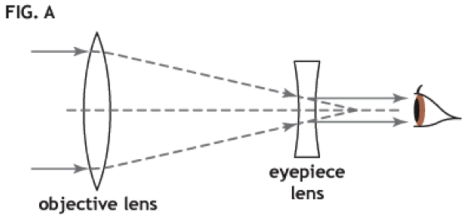
When refraction is the best you can achieve and acuity remains inadequate for the patient's goals, than there's only two options left to further enhance distance vision— move up close enough to see it, or, make it closer optically with telescopes.

Low Vision Telescope Optics "101"

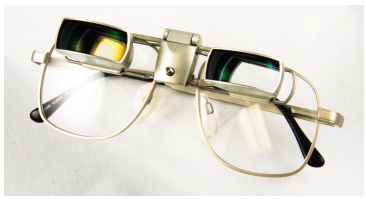
As is well known, bioptic telescopes are available in two designs—Galilean and Keplerian. Each has its distinct characteristics and attributes.

Galilean telescopes (Fig A) are small and lightweight due to their simple optical design. They produce a bright image but provide rather narrow fields of view (about 5 degrees at 4x) and tend not to be sharp edge-to-edge. They are available as both fixed-focus and focusable versions and are usually prescribed in 1.7x, 2.2x and 3x

powers, but are available as high as 6x. Because of their small size and low weight they are convenient for binocular prescriptions.

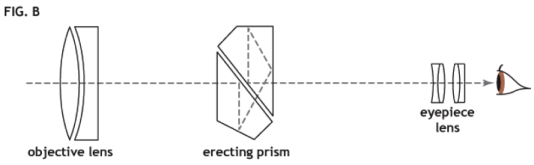


Simulated 5 degree field of view



Left: 2.2x Traditional through the lens bioptic mounting
Right: 2.2x Adjustable bridge mounting

Keplerian telescopes (Fig B) are longer and heavier as they incorporate prisms to reorient what would otherwise be an inverted image. They offer fields of view at least twice as large (about 12 degrees at 4x) as Galilean telescopes, but due to the greater number of optical components they are slightly dimmer and have less contrast. They usually incorporate larger objective lenses to produce brighter images. All commercially available Keplerian telescopes are focusable, and are most frequently prescribed in 3x, 4x, 5x and 6x powers, though other powers are available.



Simulated 12 degree field of view

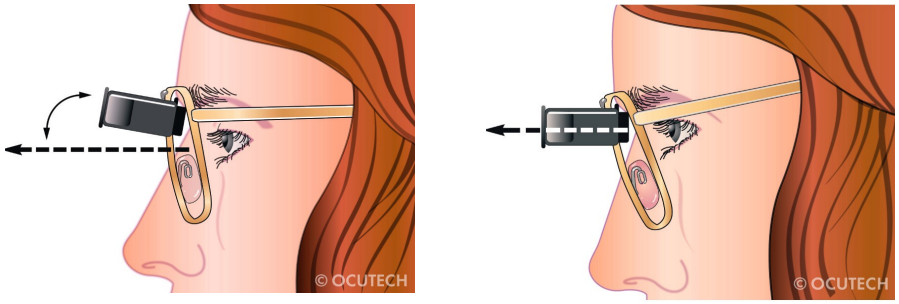
Left: 4x Keplerian Bioptic- traditional through the lens mounting
Right: 4x Keplerian Bioptic- adjustable bridge mounting

The prescriptive goal— What are we trying to achieve when we prescribe a telescopic device?
As discussed above, patients complain that they cannot see far enough away to perform whatever activity they have in mind. They must move closer in order to see it adequately. Patients with 20/40 (6/12) vision, however, rarely complain of difficulty seeing. In the U.S. individuals are licensed to drive without restrictions with 20/40 (6/12) acuity, and children are unencumbered in the classroom with that level of vision.

It is reasonable to assume then, that if we can provide 20/40 (6/12) acuity through the telescope, most patients should be reasonably satisfied with the functional benefit it provides. So, if the goal is 20/40 (6/12), a 2x device should be adequate for an individual with 20/80 (6/24) acuity, 4x for 20/160 (6/48), and 6x for 20/320 (6/95). If we prescribe higher magnification to achieve better acuity it will be at the expense of a narrower field of view, which is the major complaint of telescope users. Clinically we find that users have increasing difficulty finding what they are looking for when fields of view become narrower than 10 degrees. So we always need to balance adequate visual acuity with the field of view of the device that will be used.

The patient's perspective on telescopes.
When we place a telescope in front of the patient their immediate reaction will be that everything appears closer-- and of course, that's true, because the image is enlarged by a factor of the power of the device. The value to the patient, however, is not that the image is larger, but that they can see it further away. A 4x device will allow a target normally only visible as far as 10 feet (3m) away now be seen as far as 40 feet (12m) away. Consider, however, that not all patients receive a geometric acuity gain from telescopes. This is especially true in individuals with neovascular AMD, diabetic retinopathy, and media issues.

Telescopic options for low vision
Low vision telescopes are available as handheld, spectacle clip-on, head born self-contained and bioptic designs. Virtually all styles are available in both Galilean and Keplerian optical designs. When individuals need magnification greater than 6x or 7x, handheld monoculars (or even binoculars) become a compelling option. If the telescope would be used only rarely and for episodic activities often a handheld version will be acceptable. If the activity requires that the hands are available, or if the user does not have the dexterity to manipulate the device, or if the telescope would be used for extended viewing purposes, then a head born device is appropriate. Head born designs are available with the telescope centered in the patient's field of view (Full diameter) or positioned above the line of sight so that the user can alternate their view between the carrier lens and the telescope (Bioptic) with a simple tilt of the head.



Left: Looking straight ahead under the Bioptic Telescope
Right: Dipping the head down to look through the Bioptic

Determining a Prognosis: Ocutech Telescope Prescribing Protocol
The Ocutech Telescope Prescribing Protocol was developed to help low vision practitioners evaluate their patients, identify the appropriate prescription and determine a prognosis. It is divided into two parts—*Hard*

Signs, those that can be measured or otherwise determined (objective tests), and *Soft Signs*, those that are judgments and are developed through patient interaction (subjective tests). Ocutech has also created the **Ocutech Bioptic Prescribing Worksheet** which can help the practitioner go step-by-step through the clinical evaluation process.

A. Hard Signs:

1. **Visual Acuity**: Best corrected visual acuity through conventional lenses is in the 20/50 to 20/300 range (6/15 to 6/90).
   When acuity is less than 20/300 (6/90) the visual response to telescope magnification is no longer as robust. While 20/40 (6/12) is the suggested acuity goal while looking through a bioptic acuity should be at least 20/50 (6/15) to be of functional gain to the user. Since bioptic telescopes are most well accepted in powers up to 6x, an acuity of 20/300 (20/50 x 6) [6/90 (6/15 x 6)] is usually the upper limit of an effective telescope prescription. While higher power bioptics are available their utility and benefit to the patient are generally less well received.

   Goal: The patient should be able to read fluently to at least the 20/50 (6/15) line while looking through the telescope.

2. **Contrast sensitivity**: Able to see facial features while looking through the telescope at a distance of 12 feet (4m) under normal room illumination.
   All telescopes reduce retinal illumination and contrast. Testing visual acuity through a telescope using a conventional high-contrast eye chart is not an appropriate assessment of how the telescope is likely to be used in day-to-day applications. Since most visual activities require low contrast visibility, and that seeing faces is a common goal of telescope devices, using a face as a low contrast test target is an effective and convenient way to determine the patient's functional response to telescope magnification.

   Goal: The patient must report that they can see the face much better through the telescope. If they report that the face is larger but NOT easier to see than the prognosis for telescope success is reduced. Consider Galilean devices rather than Keplerian, or handheld Keplerian monoculars with large objective lenses if seeing faces through the telescope is reduced. These may increase image brightness and contrast, or perhaps the telescope may only be of value out of doors or in brightly lit areas.

3. **Ocular Dominance**: The better seeing eye is the dominant (or preferred-sighting) eye, OR, that while looking through the telescope the dominant eye sees better than the fellow eye. We cannot assume that the better-seeing eye will always be the dominant eye.

   Most individuals find that sighting through a monocular telescope is much easier when using the dominant eye. In fact, many individuals are unable to aim or sight through a telescope with the non-dominant eye. As a result, the ability for the patient to localize through a bioptic telescope will be much more natural if they are using their dominant eye.

   An easy way to determine the dominant eye is to ask the patient to look through a handheld telescope without suggesting which eye to use. They will usually bring it to their dominant (preferred fixating eye) reflexively. If they ask which eye they should use, suggest they bring it to whichever eye seems more natural. On occasion, patients will show no ocular preference and can sight equally well with either eye, however this is the exception.

   Goal: The better seeing eye is the dominant (preferred sighting) eye. If the better-seeing eye is not dominant (there may be a "dominancy conflict") where the patient sees more clearly with the dominant eye closed. In the instance where the better-seeing eye is not dominant treatment options include prescribing a binocular system (when 3x and power powers are needed), or prescribe a higher power device to the dominant eye. Another approach, though less successful, is to occlude the dominant eye using a sector occluder while the patient is sighting through the bioptic.

B. Soft Signs:

1. **Appropriate activity goals for use of the device.**

   Telescopes are used for distance and midrange (arm's length) visual activities such as seeing faces, TV, the blackboard in school, computer screens, packages on shelves, signs while traveling, playing cards and board games, etc. If the patient's functional goals do not relate to these types of activities, a bioptic telescope may not be an appropriate prescription. While bioptic telescopes can be used for reading, it usually should not be a primary functional goal of the prescription.

   Goal: The patient has mid-range and beyond visual activity goals.

2. **Cognitive status and dexterity with the device.**

   Patients who show a natural skill and an intuitive familiarity with using the device will be more successful in their adaptation. Evaluation of such skills should be done out of the examining room and in an environment more akin to a normal setting. The patient should be allowed to walk wearing the demonstration device, look at assorted targets, and look in a mirror to appreciate their appearance with the device in place. It will usually be quite apparent whether the patient will adapt well to using the device. While therapy to learn to use the device can be helpful with adaptation, an individual who shows poor skills will be a less promising candidate.

   Goal: The patient responds to the device favorably, can find targets while looking through the device, and improves with practice during the evaluation.

3. **Motivation and enthusiasm:**

   No matter how natural it is for the patient to use the device, and no matter how well it enhances their vision, patients must be personally motivated to want to improve their vision. They must be prepared to confront the challenges integrating such a device into their daily routine. Expectations must be tailored to each patient's needs and habits. While some individuals might wear a bioptic for many hours every day, others may only need it for specific activities that occur much less frequently. Some individuals do not care to wear a device in public that is unusual in appearance, while others have no such concerns. The review of these psycho-social issues is an integral part of determining an adaptation prognosis.

   Goal: The patient is excited about how they are seeing with the bioptic and embrace the opportunity to improve their vision.

C. Summary:

In the final determination of an appropriate bioptic prescription, a combination of the hard and soft signs will create an overall prescribing prognosis that is appropriate for the individual patient. I will offer the patient a prognosis on a scale of one–to-ten based upon these 6 factors:

- 8 or 9 if they are doing well right from the start,
- 6 or 7 if they will need some training,
- 4 or 5 if I am not optimistic they will do well.
- I do not offer a prognosis above 9 or below 4.

This systematic approach can be helpful to the clinician in advising the patient of the likelihood of their successful adaptation to bioptic telescope systems.

How I actually do it in the clinic:

After the best corrected visual acuity has been determined for each eye, and I know which is the better-seeing eye, I will hand the patient a handheld monocular telescope (a 2.2x power for individuals with acuity of 20/100 (6/30) or better, or a 4x12 power (that I've pre-focused for the distance eyechart) for individuals with visual acuity

of 20/120 (6/36) or worse. I ask them to look through it, and most all patients will reflexively bring it to their dominant (preferred fixating eye). Of course, I am hoping that their dominant eye is also their better-seeing eye. They may ask which eye to use, and I suggest to use whichever eye feels more natural. This is the eye that we would prefer to prescribe to, because localizing targets with the non-dominant eye is usually more difficult for patients to do. Occasionally patients can site equally well using either eye. This is the exception, but makes prescribing easier.

Left: 2.2x Galilean Telescope- You only need one!

Try this yourself, and you may well experience how much harder it is site through the non-dominant eye. As a result I prefer to prescribe to the dominant eye, even if it is the poorer-seeing eye so long as I can achieve the acuity goal we seek, even if it means using a higher power telescope.

Once the patient is looking through the telescope, we need to evaluate their response to magnification and low contrast targets. I ask them to read the chart to see how well they can aim the telescope and how well they respond to the magnification. I then ask them to look at an individual's face from across the room in normal room lighting. They must tell me that they can see the face much more easily. If they report that the face is larger, but not easier to see, it tells us they are not benefiting enough from the telescope magnification.

Deciding when to prescribe

1. If the patient is using their dominant eye, can manipulate the telescope effectively, and can respond well to reading the eye chart and seeing faces, it's now just a matter of finalizing the prescription.
2. While prescribing to the dominant eye is my strong preference, I would consider prescribing to the fellow eye if they are able to otherwise use the telescope effectively. Or, I might consider a binocular option if available-- such as when using 1.7x or 2.2x powers.
3. If they cannot manipulate the handheld telescope well, but when the telescope is mounted on a testing or demonstration frame they otherwise do well, I remain comfortable prescribing the bioptic.
4. If the patient has difficulty understanding how to look through the telescope, or aim it to find the chart or face, or does not see a face well from across the room, I would be very cautious about prescribing the bioptic.

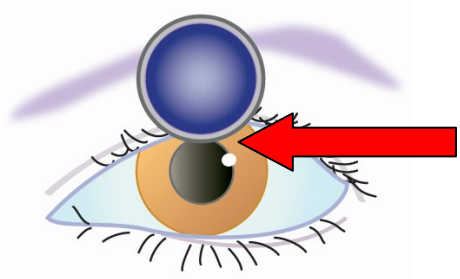
The Practical Aspects of Fitting Bioptic Telescopes

Whether you prescribe a bioptic telescope drilled into the carrier lens (traditional mounting design), or the adjustable bridge-mounted version, there are only 3 basic steps to fitting the device..

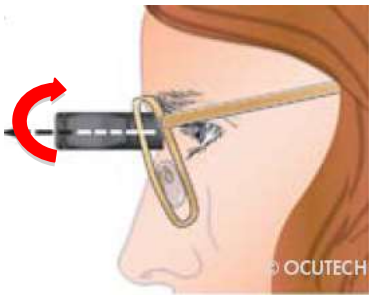
1. **Align the eyepiece with the center of the pupil of the eye(s) that will be using the telescope.**
    a. For drilled mounting bioptics you may either measure the monocular PD, or as an alternative, install a pinhole occluder into a trial frame and move the holder right and left until the patient reports that the pinhole is centered in their field of view. Then either read the PD from the scale on the trial frame, or measure from the center of the bridge to the center of the pinhole us a millimeter scale.

b. For adjustable bridge-mounted bioptics, simply move the telescope right and left until the eyepiece is centered over the pupil and the patient reports that the eyepiece is centered. Then measure from the center of the bridge to the center of the eyepiece to determine the proper PD.

2. **Adjust the telescope eyepiece height**
   a. Adjust the vertical height of the frame on the nose by either widening or narrowing the nosepads, so that the bottom of the eyepiece aligns with the top of the pupil.



3. **Align the telescope viewing angle with the line of sight of the patient**
   a. When the patient drops their head down and raises their eye to look through the telescope eyepiece, the patient's line of sight must be parallel to the viewing angle of the telescope.
   b. For drilled mounting bioptics, the viewing angle is usually specified to be 10 degrees up from the horizontal plane
   c. For adjustable bridge-mounted bioptics, simply tilt the telescope angle until it aligns with the patient's line of sight. Often the patients can do this by themselves. Once positioned properly, tighten the bridge mounting screws to keep the telescope firmly in place (do not over-tighten).



A few extra "Clinical Pearls" you might find helpful.

Clinical Issues for Prescribing Bioptic Telescopes

a. Carrier lenses: Order the eyeglass prescription the patient normally wears for distance vision. Prescribe a bifocal if that is what the patient usually wears. We normally use flat-top designs and avoid trifocals and progressives.
b. Maintain at least 10mm between the top of the bifocal and the bottom of the eyepiece.
c. Eyepiece Corrections: Depending upon the brand of telescope prescribed you may need eyepiece corrections for all prescriptions. Ocutech systems only require eyepiece corrections for higher prescriptions with sphere power above +/- 12D, or 3D cylinder.
d. Illumination Control: Slip-behind sun filters are available in a selection of colors. Filter caps and internal filters can also be ordered.

Telescope Training Techniques

a. **Give the patient a tour of the device**: Show them the telescope eyepiece which will be positioned above the line of sight of the eye that will use the bioptic. Explain that they will look through the carrier lenses most of the time and dip their head down to sight through the device.

b. **Translation** (switching fixation between the carrier lens and telescope eyepiece): Look first through the regular eyeglass lens (carrier lens) of the bioptic. It should provide your customary distance vision. Look directly at the object you want to magnify. Drop your head slightly and look up into the eyepiece. You should see a full, round magnified image. You may have to focus it to get the image clear. Practice switching between the carrier lens and the telescope until you can do it easily and without losing your target.

c. Focusing

i. At distance- take advantage of depth of field- set the focus in front of what you want to see and focus backwards until it's just clear- this leaves the entire depth of field in front of the target
ii. At near- set the focus and then use in and out head movement to keep it clear

d. **Localization at distance**: Since the field of view through the bioptic is narrow, like a tunnel or a keyhole, it can at first be challenging to find what you want to see. To be successful, one must first look with your "normal" vision through the regular eyeglass lenses, aiming directly at the object you want to see better. While looking directly at the target, slowly dip the head down, and look into the eyepiece of the bioptic. With practice you should be able to switch between your normal vision and the telescope image quickly and accurately. Practice this at home while looking at objects on walls, faces of family, or the TV, until it becomes natural and you can do it easily. With time you can learn to ignore the tunnel field of view.

e. **Localization at near**: Looking at closer objects can be more challenging due both to the narrow field of view and the visual mismatch produced by the bioptic. To learn to find and touch objects within your arm's range, first find the object in the bioptic field of view, and while looking at it, pass your upraised finger across the field of view several inches in front of the target. Once you can see both your finger and the target at the same time, watch your finger as it moves in to touch it. You MUST watch your finger while looking through the telescope to learn to do this. A convenient technique is to practice this while trying to touch the buttons on a telephone keypad.

f. **Care and Handling**: Have the patient put it on, take off, and put the bioptic away themselves. Discuss proper care and cleaning. The eyepiece is apt to get soiled and filmy. It should be cleaned with an approved microfiber cloth. The device should never be placed under a faucet.

The five questions you should ask to identify a promising bioptic candidate.

If your patient can answer YES to the following questions they may be a good candidate for Ocutech bioptic systems.

1. Is your vision loss due to macular degeneration or a similar disorder that causes a loss of central, detail vision?

2. Is vision in the better eye with your best eyeglass prescription (if used) 20/300 (6/90) or better?

3. Can you read headlines on a newspaper?

4. Can you watch TV or recognize people's faces from farther than 2 feet (.6m) away?

5. Do you wish to improve your vision to help you see better at distance and midrange for faces, signs, TV, computer screens, shopping and traveling?

How to introduce the value of bioptic telescopes to your patient.

In central vision loss, such as macular degeneration, the central part of the retina (the macula) is affected.

- The macula is responsible for the "detail vision" that we use to read, recognize faces, and see signs and TV.
- When one has macular degeneration, it's as if there is a "hole" in the center of your vision, and when we look at an object that's smaller than the hole, the image, in effect, falls in and cannot be seen.
- By enlarging the image, it becomes too large to fall into the hole, and it remains visible. This is the basis of low vision care—using low vision aids to make the image large enough to make it visible.
- Moving very close or using a small telescope are the only ways available to help you to see better at a distance or at midrange.

Telescopes can help by:

- Making the image larger, allowing the user to see things further away
- For instance, if an individual can normally see a sign no further than 10 feet (3m) away, when looking through a 4x power telescope they will now be able to see the sign from 40 feet (12m) away.
- Ocutech bioptic telescopes can be focused for different distances enabling them to be used for both distance, mid-range, and near magnification purposes.
- When looking at closer distances such as computer screens the image is enlarged without having to move very close to the screen.

Distance vision is a social sense—it helps us to stay connected:

- A large part of socialization and communication is non-verbal
- Seeing faces helps us to read body language
- Reading body language keeps us connected with friends and family
- Seeing at a distance minimizes feelings of isolation and depression
- Improving distance vision helps support independence
- While there are many ways to read without doing it yourself, no one can see your friends, family and loved ones or the beauty of the world around you for you!

Learning to use a bioptic is like learning to ride a bike and drive a car:

- The first few weeks aren’t easy!
- Keeping your balance was a challenge, probably with scuffed knees!
- Learning to use the rearview mirrors was hard because the view was so narrow!
- ***But,*** before long riding your bike and driving your car got easy and natural!

A sample letter to eyecare providers for low vision patient referrals

Dear Doctor:

We are pleased to announce that we have now added the innovative Ocutech Bioptic Telescope systems to the full range of low vision devices that we prescribe in our practice. Ocutech low vision aids feature some important benefits:

- They were developed and tested with NIH grant funding
- They were proven effective in independent clinical trials
- The Ocutech prescribing protocol has demonstrated a 78% long-term acceptance rate
- They are the easiest bioptics to wear and use

As you know, low vision care has become an accepted and important aspect in addressing quality of life issues for individuals with visual impairment. In fact, all ophthalmology residency programs are now required to offer a vision rehabilitation curriculum, and with increasing NEI support, clinical science in low vision care has evolved dramatically over the past decade.

Recent studies are exploring the relevance of improving distance vision:

- Distance vision may have a greater impact upon academic and vocational success in children and adults than solely improving reading ability
- Loss of distance vision contributes to feelings of isolation and an increased risk of depression especially in seniors

Clinical studies now indicate that referrals for low vision care:

- Should be suggested when visual acuity becomes less than 20/70
- That the prognosis for low vision care improves with early referral
- That adaptation success rate is much higher when acuities are 20/200 or better
- Individuals with albinism, nystagmus, Stargardt's Disease, optic nerve disorders and achromatopsia respond especially well to telescopic magnification and may derive the most functional benefit

We offer the following practice management support to you and your staff:

- Respond promptly with consultation notes
- Provide you with low vision information brochures (samples enclosed)
- Provide convenient referral forms (samples enclosed)

We do hope you will allow us to contribute to the care of your visually impaired patients.

Thank you for your time and interest,
Sincerely,

Fax Referral Form for Low Vision Services

Insert your information here:
Low Vision Practice
Clinic Name
Address
Phone
Fax

Date:_____

We are pleased to make this referral to you for vision rehabilitation services.

Patient Name:_____

Phone Number:_____

- Please contact the patient
- The patient will contact you

Diagnosis: _____

BCVA: R:_____L:_____

Visual Fields: R:_____L:_____

Specifically, we seek assistance for this individual in the areas of:
- Reading
- Television
- Writing
- Seeing Signs
- Mobility
- Other(s):_____

Notes:

Referring Practice Name/Address/Phone:

_____
Referring Specialist

OCUTECH® Bioptic Prescribing Worksheet

Practice Name _____ **Account #**_____
Clinician Name _____

Patient Name _____ **Age** _____ **Date**_____
Diagnosis _____
Functional goal(s): (Check all that apply) □Faces □TV □Socialization □Driving □Cultural Events □Classroom □Signs □Shopping □Traveling □Midrange/Table Top Activities □Other_____

GOAL: No STOPS. Minimum of 5 checks in the "good" Column.

Key Prognosis Factors

		Good	Fair
1. Is BCVA 20/300 or better in either eye?	Yes, continue to 2 No, **STOP**	□	
2. Determine initial power for telescope testing. (Confirm TS is properly focused or has the proper eyepiece correction). If BCVA ≥ 20/70: start with: 1.7x SightScope ≥ 20/100: 2.2x SightScope ≥ 20/150: 3.0x VES Mini, VES Explorer or 4x VES K, II, Sport, Explorer ≥ 20/200: 4.0x VES Explorer, K, II, Sport or 5x VES Sport ≥ 20/300: 6.0x VES Sport			
2a. Can ~ 20/40 VA be achieved in the dominant eye with the TS?	Yes, continue to 3 No, continue to 2b	□	
2b. If no, can the non-dominant eye localize effectively through the TS?	Yes, continue to 3 No, continue to 2c		□
2c. If no, is there a binocular option that will provide effective localization?	Yes, continue to 3 No, **STOP**		□
DECISION: Eye(s) to prescribe to: OD OS OU			
DECISION: TS Power and style to achieve 20/40:			
3. Can patient see faces well through the TS at 12' viewing distance in normal room light?	Yes, continue to 4 No, continue to 3a	□	
3a. If using 4x VES II or K, does 4x VES Sport improve face visibility?	Yes, continue to 4 No, continue to 3b		□
3b. If not, does lower power TS satisfactorily improve face visibility with visual acuity of at least 20/60?	Yes, continue to 4 No, **STOP**		□
DECISION: Alternate TS power and version to achieve adequate low contrast acuity:			
4. Does patient have appropriate activity goals for use of TS?	Yes, continue to 5 No, **STOP**	□	
5. Does patient show promising aiming, translation and dexterity with use of device?	Yes, continue 6 No, continue to 5a	□	
5a. If no, do they show potential to be trained to use the device?	Yes, continue to 6 No, **STOP**		□
6. Does patient show enthusiasm to use such a device?	Yes, continue to 7 No, **STOP**	□	
7. Are there 5 or more responses in the "Good" column? **YES: Telescope prescription prognosis is favorable** **No: Telescope prognosis is guarded** Telescope Rx: Style_____ Power:_____ Eye for Eyepiece(s): (circle) OD OS OU			