



Monovision and Binoculars: What You Need to Know

By: Xuqeru Staff (contact@xuqeru.com)

What Is Monovision?

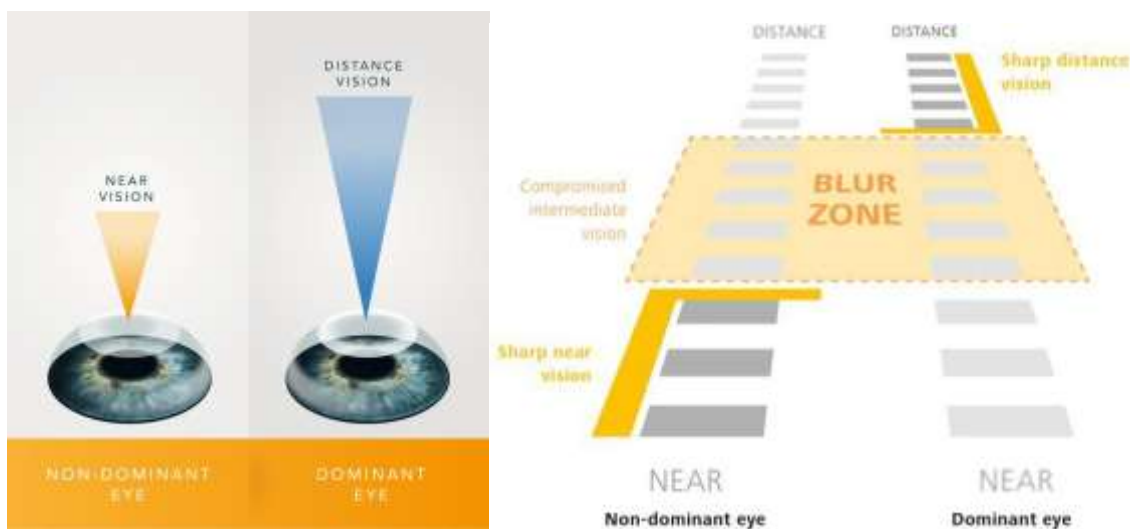
If you wear contact lenses or have had vision correction surgery after age 40, there's a good chance you've heard of—or are already using—**monovision**.

Instead of both eyes doing the same job:

- One eye is corrected for **distance**
- The other is corrected for **near (reading)**

Your brain adapts and switches between them automatically.

This approach is commonly used with contact lenses and surgery, and according to the American Academy of Ophthalmology, many patients successfully reduce their need for reading glasses.



How Common Is Monovision ?

- In a large real-world cataract surgery registry (mostly patients in presbyopic ages, typically **45+**) approximately **~34% of patients were set up with monovision**
- In refractive surgery (LASIK) populations of patients **≥45 years** about **67% were treated with monovision** in one study of 284 patients
- Clinically, essentially **all patients over ~40–45 are candidates** (because presbyopia is nearly universal), but not all choose or are assigned monovision.

It all comes down to your ability to adapt, your lifestyle, and what alternatives you consider.

Why People Like Monovision



Monovision offers some clear benefits:

- ✓ Less dependence on glasses
- ✓ Simple and cost-effective
- ✓ Works well for everyday tasks

For many people, it's a convenient and freeing solution.

The Tradeoffs (That No One Talks About Enough)

Here's the important part: your eyes are no longer perfectly working together.

Normal 2-Eye Vision

- Depth perception
- Sharper, higher-contrast vision

Monovision

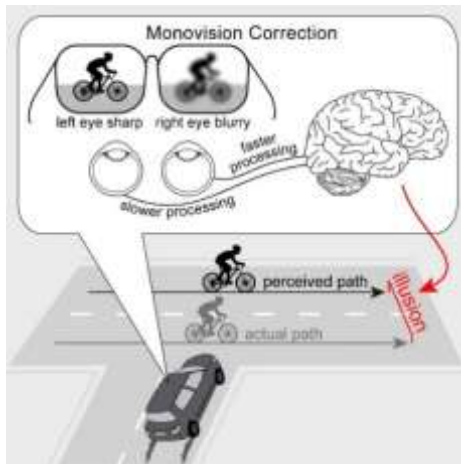
- Slightly weaker depth perception
- Reduced clarity in low light
- Difficulty with precise visual tasks

Most of the time it's subtle—but certain activities make it more obvious. For this reason, many eye care professionals will have the patient use monovision in contact lenses before committing to a permanent change via surgery.

Please note that we at Xuqeru are not advocating for monovision. We do, however, acknowledge the benefits and tradeoffs, one of which is potential limitations with using traditional binocular designs, for which we have a solution.

Why Binoculars Become a Problem

Binoculars assume both eyes focus the same way, and are relatively close in strength.



But with monovision:

- One eye is set for distance
- The other is set for near

When you look through standard binoculars:

- One side may be sharp
- The other blurry
- The image feels hard to merge

These factors all contribute to eye strain and a frustrating viewing experience.

Standard Solution: Adjust the focus of one eye to match the other

Perhaps the most common design most consumers will ever encounter involves a focus adjustment mechanism (often referred to as *dioptric adjustment*) for one eye – typically the right eye. This works fine if your eyes are close together in strength. But monovision adjustments very often involve larger differences in order to achieve near and far vision at the same time. Without sufficient adjustment, you are still using just one eye at a time and not getting the benefits of using binoculars in the first place.

The Better Solution: Dual Adjustment Binoculars

Binoculars with dual dioptric adjustment let you:

- Fine-tune focus for each eye
- Match your unique vision
- Restore a sharp, balanced image
- Twice the range of accommodation compared to right-eye only adjustment designs



Single Dioptric Adjustment (right eye)



Dual Dioptric Adjustment (Left and Right)

A Modern Example: Xuqeru Dual-Adjustment Binoculars

A recently launched design is the **Xuqeru** (pronounced “shoo-ker-oo”) binoculars with **dual diopter adjustment**.



These are designed to solve the exact issue monovision creates—without giving up traditional usability.

What makes the Xuqeru binoculars stand out:

✓ Dual diopter adjustment (both eyepieces)

Each eye can be precisely focused—perfect for monovision.

✓ Center focus wheel

You still get fast, intuitive focusing like standard binoculars. Many “independent focus” models do not retain a center focus mechanism and forces you to reset the focus of both eyes as the distance to the object changes.

✓ High-end optical components

- **Extra-low dispersion (ED) glass** → sharper image, less color fringing
- **BAK-4 roof prisms** → brighter, clearer viewing
- **Fully multi-coated lenses throughout**



Chromatic Distortion in Standard vs. Extra-Low Dispersion Glass

With Xuqeru binoculars whether you need the capability to accommodate monovision or not, you're getting both **customization** and **top optical performance**.

The Bottom Line: Why All This Matters



Monovision is a great solution for general vision and daily activities — but it changes how your eyes work together and gives each eye a different job. That works well for daily life — but not for tools that require both eyes to work together at the same time.



Standard binoculars don't account for that.

With the right design, you can:

- Restore comfort
- Improve clarity
- Fully enjoy the experience again

Binoculars are one of those tools.

With **Xuqeru dual-adjustment binoculars**, you don't have to compromise. You can keep the benefits of monovision and still enjoy clear, balanced binocular vision.

Xuqeru 10x42 ED Specifications

Magnification (X): 10X

Eyepiece diameter (mm): 24mm

Objective diameter (mm): 42mm

Field of view (deg): 6°

Field of view: 105m/1000m 315ft/1000yds

Exit pupil distance (mm): 15mm

Exit pupil diameter (mm): 4.2mm

Minimum focus (m) 1.5m/4.92ft

Prism material: BaK-4

Waterproof grade: IPX7 (Nitrogen filled)

Relative brightness: 17.6

Twilight coefficient: 20.49

Transmittance: 82%

Diopter adjustment range: -4 TO +4 each side

Pupillary distance adjustment range: 56mm-76mm



References

- Adler FH. *Adler's Physiology of the Eye*. Elsevier.
- Evans BJW. Monovision: a review. *Ophthalmic and Physiological Optics*.
- American Academy of Ophthalmology. Presbyopia and monovision guidance.