

NaturalVue Multifocal: A Presbyopic Option with Management of Myopia Capabilities

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The **NaturalVue (etafilcon A) Multifocal 1 Day** contact lens was designed as a presbyopic option in hopes of reducing or eliminating the compromised vision seen with other soft multifocals. It soon became apparent that the high plus built into this unique center-distance, aspheric, extended depth of focus design would also work well for myopia management.

We started evaluating this real-world evidence because Sally Dillehay, OD, EdD, FAAO, was at a conference years ago telling a friend that she was having remarkable results with the lens and seeing very minimal progression of refractive error once the children were wearing NaturalVue Multifocal. A colleague joined the conversation and said, "You must be talking about NaturalVue Multifocal in children because I see the same thing." So, they decided to do a more formal, IRB-approved, retrospective cohort analysis of all the children at these practices who had started using the NaturalVue Multifocal.



The first peer-reviewed and published data with the Visioneering Technologies, Inc. (VTI) NaturalVue Multifocal contact lenses were from an in-depth retrospective case series analysis in ten practices throughout the U.S. The article, "**Case Series Analysis of Myopic Progression Control with a Unique Extended Depth of Focus Multifocal Contact Lens**," was published in *Eye and Contact Lens Journal: Science and Clinical Practice* in 2018.¹

Improvements to Myopia Progression

In September 2020, VTI presented positive data through five years at the Global Myopia Symposium, showing long-term benefits in myopic children wearing VTI's NaturalVue Multifocal contact lenses. The importance of the recently presented data is that it shows that in real-world practices, the NaturalVue Multifocal effectively reduces myopic progression, even over five years (59 months).

These new data add to the previously released data with an increased number of children and practices contributing, longer time points that the children were followed, and data related to the axial length change in a subset of children. The data show that through five years, NaturalVue Multifocal contact lenses continue to help minimize the progression of myopic refractive error in children who are wearing the lenses. Because not many practitioners had instruments to measure axial length when these children first started wearing the NaturalVue Multifocal, the axial length data goes through three years (35 months) in a smaller sample.

The updated data include 153 children (mean age 12.0 years) followed for 6 to 59 months. The data were consistent at each time point (six-month intervals), demonstrating approximately 0.90D decrease in myopic progression (approximately 90%), as compared to the rate of progression of children at these practices prior to wearing NaturalVue Multifocal contact lenses (N=305 eyes). All time points were statistically significantly different from baseline ($p < 0.00001$). Throughout the 6- through 59-month points in time, the amount of myopia progression in children wearing NaturalVue Multifocal was consistently less than 0.125D.

Within a subset of 36 children, axial length was measured over time. Axial length change from baseline averaged 0.11 + 0.14 mm at 1 year, 0.20 + 0.20 mm at 2 years, and 0.17 + 0.21 mm at 3 years. These children showed approximately 0.10 mm of axial length growth per year of wearing the NaturalVue Multifocal. These axial length data compare favorably to what would be expected for young children ages 8-12 for normal emmetropization of about 0.10-0.13 mm/year.²

To see five years later that the refractive errors in many of these children are still showing minimal changes over time, and that the axial length growth in those who have been followed over time is essentially the same as we would expect for normal emmetropic growth of the eye, is extremely rewarding. These are young children, and we have been able to demonstrate excellent results for slowing down, and in some cases stopping, the progression of myopia. In a subset of the data with only 8-12-year-olds, 95% of the children showed less than a 0.25D progression of myopia throughout the entire 36-month period.

Continuing Myopia Research

One of the limitations of retrospective studies is that there is no control group. Thus, they do not have as high an impact rating as a randomized control trial (RCT). Therefore, VTI is initiating an RCT, with enrollment beginning soon. This will be a three-year study, and

VTI will provide planned updates as the trial progresses. The goal of this RCT is to build a foundation to support what we have seen in our real-world clinical studies. We expect to see the same robust results with the RCT as in our retrospective studies.

When I started in eye care, myopia was considered “just” a refractive error. But now, over time, we realize that it is a leading cause of vision impairment in the U.S.³ The data on several myopia interventions to change the path of myopic progression for children is very encouraging.³ Working together, we can all make a difference in the future of myopic children.

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Disclosure: Dr. Dillehay is a Consultant to and the former Chief Medical Officer for Visioneering Technologies, Inc.

**In the United States, NaturalVue (etafilcon A) Multifocal Daily Disposable Soft (Hydrophilic) Contact Lenses are indicated for daily wear for the correction of refractive ametropia (myopia and hyperopia) and/or presbyopia.*



References

- 1 Cooper J, O'Connor B, Watanabe R, Fuerst R, Berger S, Eisenberg N, Dillehay SM. **Case series analysis of myopic progression control with a unique extended depth of focus multifocal contact lens**, *Eye & Contact Lens: Science & Clinical Practice*: September 2018; 44(5):e16-e24.
- 2 Zadnik K, Mutti DO, Mitchell GL, Jones LA, Burr D, Moeschberger ML. **Normal eye growth in emmetropic schoolchildren**. *Optom Vis Sci* Nov 2004;81(11):819-828.
- 3 Bullimore MA, & Richdale K. **Myopia Control 2020: Where are we and where are we heading?** *Ophthalmic Physiol Opt* 2020;40: 254–270.

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Review of MYOPIA MANAGEMENT