

# Multifocal Soft Contact Lenses, Part 1

Instructor:

**Michelle Darnell OD**

Section:

**Contact Lens**

COPE Course ID:

**53931-CL**

Expiration Date:

**May 15, 2020**

Qualified Credits:

**1.00 credits – \$39.00**

---

## COURSE DESCRIPTION:

An in-depth survey of the various multifocal soft contact lenses, and how to incorporate them into practice. This course also covers troubleshooting hints for challenging patients when being fit with multifocal SCLs.

## LEARNING OBJECTIVES:

- Learn how the various materials, wetting agents, and optical designs of the different manufacturers multifocal contact lenses can be best tailored to patient needs, for a more efficient and successful multifocal fitting experience
- Discuss troubleshooting specific lenses according to the manufacturer fitting guide recommendations
- Highlight the benefit of each lens through specific patient examples
- Troubleshoot techniques for especially challenging patients where the fitting guide recommendations leave the patients unsatisfied
- Discuss the various major multifocal contact lenses available on the market

Hello. My name is Michelle Darnell, and I am an optometrist at a private practice in Spokane, Washington. My practice specializes in daily and multifocal contacts, as well as dry eyes. I fit approximately 80% daily contacts, and 20% multifocals. I have no financial disclosures to make.

My goal for today is to teach you how I successfully and efficiently fit multifocal contacts, and the differences in design between the “Big Four” manufacturers: Alcon, Bausch + Lomb, Cooper Vision, and Vistakon. I would like to preface this with saying that this is how I fit multifocals. You may have a different system or find a way that works better for you, and if you do, by all means, run with it. I’m just here to show you my system for fitting them as a starting point for incorporating them into your own practice.

Why do we want to incorporate multifocal contacts into our practice? It is a common, and erroneous, assumption that older people are not interested in multifocal contacts. Just because we collect more birthdays, that doesn’t mean we lose interest in not being tied to a pair of readers. Who wouldn’t want to be out to dinner with their friends and be the only one at the table to not have to reach for their reading glasses to see the menu? Maybe that’s just my thing. Regardless, technology today, from smart phones to tablets to computers, is becoming more prevalent across all age groups, and it’s causing a change to the visual demand of our patients.

According to the US Census Bureau, there are 76 million baby boomers in the US population born between 1946 and 1964, and 82 million Generation X-ers, born between 1965 and 1984. Both of these generations are prime candidates for multifocals. Of those patients, a survey by Bausch + Lomb shows that 85% are using prescription glasses to correct their vision, 35% are using non-prescription readers, and only about 11% are using contact lenses. [MSI 2015 Gallup Study of the US Multifocal Market] According to the same Gallup study, of the 11% that are using contact lenses, 67% are “very satisfied” with their soft multifocal lenses. This is a huge opportunity for growth in our practices. So why aren’t we doing more of it? Bausch + Lomb’s 2015 Innovation Index found that only 9% of eye care providers are fitting 20% of their patients with multifocals. More than 50% of my patients fall into the Baby Boomer or Generation X age group, and I know my practice demographics are not uncommon. I’m certainly not fitting everyone in that age group in multifocals, but I am making a point to let them know that the option is available if they are interested.

I know some of you are out there thinking, “Older patients have drier eyes – I’m not going to try to put a contact on an older eye when they are not going to be comfortable.” We’ll briefly cover dry eye and contacts in just a few minutes. Others may be thinking, “I tried multifocals on my patients 5 or 10 years ago. They were terrible and a waste of time!” I’ve even had patients who have said that to me. Technology has changed so much in just the past few years, and a good chunk of this presentation is going to be going over the different technologies available to eye care providers, so you can explain the

### Soft Multifocal Contact Lens Candidate Population

BABY BOOM	GENERATION X
▶ Born 1946-1964	▶ Born 1965-1984
▶ Age in 2015 51-69	▶ Age in 2015 31-50
▶ 76 Million	▶ 82 Million

### Use of Eyeglasses vs. Contact Lenses to Correct Vision

(among vision-corrected adults aged 40+)

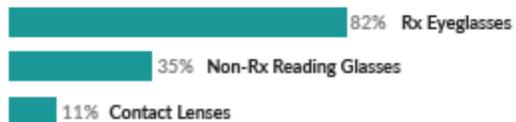


Figure 1 [Top] Source: US Census Bureau. Thanks to Bausch + Lomb for the table. [Bottom] Source: MSI Gallup Study of the US Multifocal Market. Thanks to Bausch + Lomb for the table.

new technologies to your patients, and have a better understanding so you can best select the multifocal(s) that will work best on your patients.

A final reason to prescribe multifocals for your patients is that happy multifocal patients are very quick to direct their friends to the doctor who did such wonderful things for them. Personally, my multifocal patients are the best referral source for my practice.

### **Setting Yourself Up for Success**

When it comes to multifocal contact lenses, it is really important to pick your patients carefully. In my experience, an emmetrope with their first pair of readers is going to be a lot harder to fit happily and successfully in multifocal contacts compared to a myope who has worn glasses all of their lives, and who understands the concept of blur without glasses. Believe it or not, my most challenging patients are not the presbyopes with a toric prescription - they are the emmetropes who have never had to wear glasses before, and they certainly don't want to start now! I find that as a general rule, the lower the prescription, the harder the fit. However, several other factors play into the equation, as well. Motivated patients or those who are not visually picky are much easier to fit than those who are not motivated or are visually picky, regardless of their prescription. Take a look at the whole picture when deciding who would be a good candidate for multifocals.

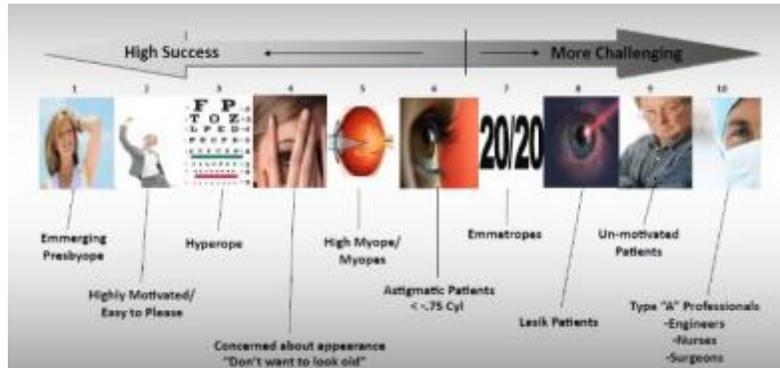


Figure 2: A scale of easier versus harder multifocal patients. Thanks to Holly Vancampen at Alcon for the graphic.

Before I fit anyone in a multifocal contact, it is really important to set expectations. I cannot stress this enough, and you'll probably get sick of me saying it by the end of the course. This is the one major takeaway that I want you to remember, and in my opinion, the single biggest thing you can do to build a successful multifocal contact lens practice. I warn everyone that because we are cramming the optics that we would normally fit into a regular size glasses lens into a nickel-sized contact lens, there is going to be some distortion and blur that we cannot overcome. Multifocals are designed to make someone functional without glasses for 80 to 90% of their daily tasks. I can customize and tailor that 80 to 90%, but no matter what I do, I cannot maximize it to 100%. A patient may still occasionally need reading glasses for super-small print, or other challenging situations such as reading in dim lighting. I also warn them that they will most likely not see 20/20 at all distances like they do in their progressives. Obviously, you will develop your own script, but this wording has worked really well for me. And hey, if I under promise and over deliver, then the patient is all the happier.

So, let's get started.

1. You have your patient's glasses prescription, and their add power. What else do you need to help you decide which brand(s) you are going to try?
  - a. Patient's goals
  - b. Desired modality (daily vs monthly)
  - c. Ocular surface condition
  - d. Eye dominance
  - e. "Minimum add to 20/20"
  - f. K readings
  - g. All of the above

Which would you choose? Hopefully you chose all of the above. I never leave the exam room until I have all six of these items.

Hopefully, you've also determined the patient's goals for their contacts during the course of your exam. If you haven't, take a few minutes in the exam room to ask them what tasks they want contacts for, or what they do most often when they anticipate using their contacts. The patient who is a professional baker and wants to see clearly up close and at intermediate distance so she can decorate her outrageously intricate 3D cakes is going to have very different demands from the airplane pilot who needs to pass his Class 2 certification and wants to be able to fly without glasses. It is really important to listen to the patient and, if needed, take notes, because some multifocal brands provide clearer distance vision, and others offer more flexibility with near vision.

Will the contacts be their primary modality, or are they purely for special occasions or weekends? A large percentage of my multifocal contact lens wearers are in daily contacts simply because if they buy a 30 day supply and only wear them a few times each week, that supply lasts them months, and they save money buying the 30 or 90 day supply of daily contacts over the annual supply of the monthly contacts, especially when you throw in the cost of contact lens solutions on top of the monthly contact cost.

Other patients are very concerned about the health of their eye, or maybe they have very sensitive lids and experience lens awareness in certain brands of contacts. Heaven forbid they have dry eye and want to wear contacts, and, what's more, they want to wear them comfortably. (Don't they always?) There are a few different multifocal contacts out there that I have found to work decently well for some dry eye patients, but as a general rule, if they have ocular surface disease (either aqueous deficient or Meibomian gland dysfunction), I have a long discussion with the patient and recommend that we address the ocular surface and get it healthy before we try to do contacts, otherwise they will be less likely to be successful in contacts. Most of my patients are able to get on board with that idea once I take a few minutes to educate them on the cause of their discomfort with contacts and lay out a treatment plan to get them to their goal of comfortable contact lens wear.

So now we are certain that our goals with contact lens fitting match up with the goals of our patients, and that the patients' goals are realistic. Let's move on to the technical aspect. I always determine eye dominance, even if I am not going to be fitting the patient in a center-near/center-distance design. Why? Down the road, if you find you need to tweak near or intermediate distance, it is much easier to increase the add power over the non-dominant eye and maintain clear distance vision than it is to bump the add power in the dominant eye and preserve distance. So make a little note of

dominance off to the side for future reference, just in case you need it. We'll go through a few examples later in lecture where you will be glad you had the info.

Some multifocal manufacturers make lenses that come in more than one base curve. Knowing the K readings on your patient will help you pick the appropriate base curve in models where more than one is available.

The final preparatory step is something that I call the "Minimum add to 20/20." I'm not sure if there is another, more technical, name for it. But it's exactly what it sounds like. I put the distance Rx in the phoropter with the 20/20 isolated line on the near card. I tell the patient to start calling out the letters as soon as they can see them, even if they are not perfectly clear, then I start slowly dialing in plus with both eyes open. I'm usually pretty surprised on how little add power is needed for patients to see 20/20. Often +1.25 or +1.50 will get them calling out letters. Will it be perfect? No, but multifocal vision isn't designed to be perfect! I make a little note on my chart next to my eye dominance note as to the minimum add. The reason for this is that, as a general rule, the higher the add power in the multifocal contact, the greater the aberration in the contact and thus the more blur/distortion is noticed by the patient in the distance. If a patient can see 20/20 with a "low" add (+1.25 to +1.50), why would you start them off in a "high" (+2.00 and up) add trial?



Figure 3: +0.25/+0.50 and -0.25/-0.50 flippers in my contact lens room to demonstrate adjustments.

Once you have selected the initial diagnostic lenses for your patient based on all of the info above, it is important to let the lenses settle on the eyes for a minimum of 10 minutes. This allows the lenses to settle into place, the patient's brain to adjust to the unfamiliar lens optics, and for them to evaluate the vision and report satisfaction or dissatisfaction with their distance, intermediate, and near vision. I try to start everyone in lower powers in both eyes and slowly work my way up into the higher powers, with the help of my trusty +0.25/+0.50 flippers (Fig 3) as needed, one eye at a time, starting with their non-dominant eye, until we get them functional at both their distance and near tasks.

Then I send them out into the real world for a week or two to try out their contacts. In a few weeks, when they come back for their contact lens check, they report how the contacts worked for them at distance, intermediate and near, and for any specific tasks they were wanting the contacts for. If we need to adjust anything to improve vision at one distance, we make a little tweak, and send them out again to repeat the process. I make sure that they understand that if I make the vision better at one distance, it will most likely decline a little bit at the other distance. For instance, if we improve reading vision, they may notice a very slight blur to their distance vision. However, if no tweaks are needed, then I finalize the contact prescription and send them on their way.

Now you know the general format that I use to fit a multifocal contact. Depending on the brand(s) that I decide to fit the patient in, I will make minor changes because each brand has different optics and a little bit different guidelines to successfully fit their lenses. If you are sending the patient home with a few different brands to try, as I often do, I suggest warning them to not get too caught up in the numbers of the prescription. I explain that the optics are different between manufacturers, just like automobile engines vary between the major car manufacturers (this example tends to resonate with

my male patients), or how different jean styles fit differently so sometimes someone will wear different sizes in different manufacturers (this tends to resonate with my female patients). I tell them that it's my job to know the different optic systems and to translate the prescription between brands, all they need to worry about is which contacts are more comfortable, and which give them the best vision.

Let's move on to the differences, strengths and weaknesses between the "Big Four." I have a little elevator speech prepared regarding the technology behind each brand, and why I selected it specifically for the patient, and I will share those with you as we go through the rest of this presentation. As I've said previously, feel free to take what you want and leave the rest.

## Alcon

The Alcon family includes the Air Optix Aqua multifocal, DAILIES AquaComfort Plus Multifocal (DAC), and DAILIES Total 1 Multifocal (DT1). Air Optix, of course, being a monthly modality, and DAC and DT1 being daily modality. All of the multifocals in the Alcon family consist of a center-near design, meaning that the center of the lens is the reading or near power, with a gradient of powers gradually decreasing through the optical zone until the distance power is arrived at closer to the outer edge of the optic zone. Alcon multifocals also come in Low, Medium and High adds, allowing for a little more creativity and flexibility to meet the more challenging patient's needs. (Fig. 4)

**Available in**

LO ADD	MED ADD	HI ADD
≤+1.25	+1.50 to +2.00	+2.25 to +2.50

Figure 4: Add powers available in the Alcon family of contacts.

Unfortunately, these lenses do not currently come with UV protection.

### Dailies Total 1 Multifocals

Alcon does not classify the Dailies Total 1 family as silicone hydrogel lenses, but rather as Water-gradient lenses. The reason for that is that, while this lens has a silicone hydrogel core, they have developed a surface technology called "ultrasoft, hydrophilic surface gel" that allows the water content to approach 100% at the surface of the lens. (Fig. 5) The silicone hydrogel core allows for higher breathability (dk 140), but the water content at the surface allows for better comfort. I find myself very successful with this lens, especially in older female patients, and those with aqueous-deficient dry-eye. I always take the time to explain the unique surface

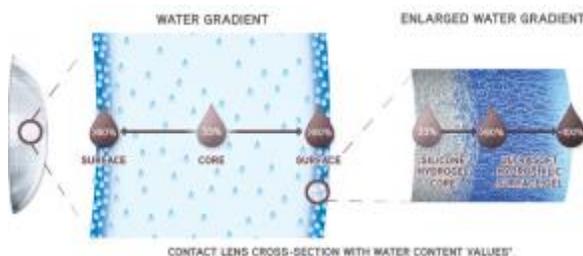


Figure 5: A breakdown of the water content and water gradient technology in Daily Total 1 lenses. Source: <https://www.myalcon.com/products/contact-lenses/dailies/dt1-technology.shtml>

technology to patients that I elect to fit with this lens, because it is a pricier lens, and when they understand that I am selecting a lens that is essentially "a contact lens surrounded by a cloud of water" (my wording, not Alcon's) and that I have chosen it specifically because their eyes are dry, many times that can help the patient overcome the price differential. And sometimes not, but at least the patient understands that there is more to my choice of lenses for them than how much money we can get them to spend.

Dailies Total 1 multifocals are made of Delefilcon A. I have spent hours scouring the internet for a power curve of the Dailies Total 1 multifocal, and the closest I was able to find was one for the Air Optix Multifocal. I have seen power curves of all three Alcon multifocals in Alcon's marketing material, and they are all remarkably similar, which allows for the similar fitting process between all three lenses. Figure 6 [Top] shows the Air Optix Aqua power profile, starting from the left of the graph representing the center of the optical zone (near power) proceeding to the right of the graph, or the distance power. You can see that there is a relatively smooth change between the near power and the distance power. Another key aspect to note is that on the far right, the actual power dips below the black dotted line (which represents the labeled distance power). This means that you can push plus on these patients without reducing their distance vision! In fact, most patients do not even notice when I put my +0.25D flipper over both of their eyes once they have the vertexed and spherical equivalent contact lens powers on their eyes. In addition, every 0.25D of plus power you can push in the distance is that much more clarity you will give them for near tasks. So I push plus in the distance, because often I can get these patients happy in a low or medium add, eliminating the higher distortion caused by the higher add powers.

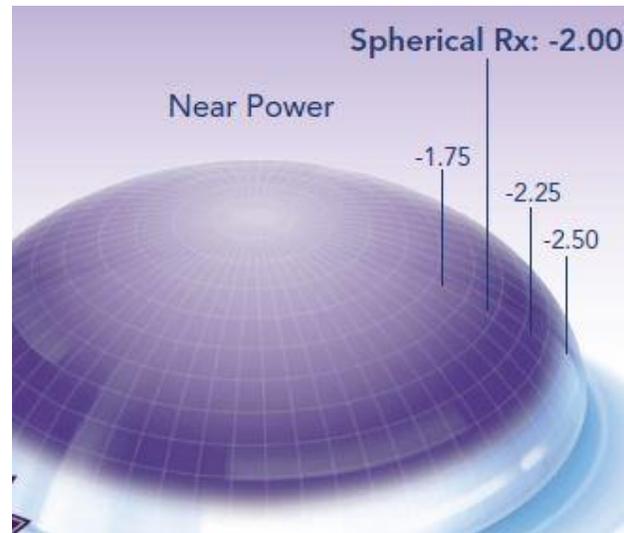
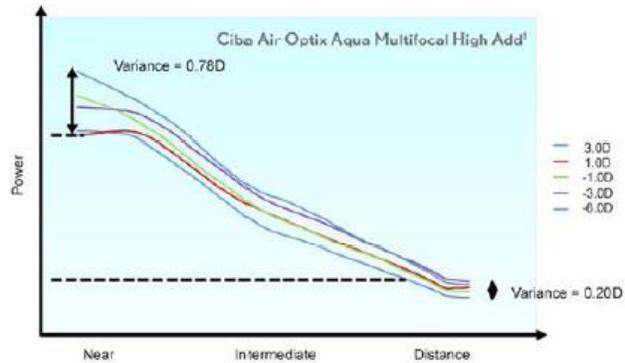


Figure 6 [Top] Power Profile of the Air Optix Multifocal, High Add. [Bottom] Another way to show the power profile of a -2.00DS Alcon multifocal, and how the edges of the optical zone incorporate more negative power than the labelled Rx. Source: Alcon

### Dailies AquaComfort Plus Multifocal

Dailies AquaComfort Plus multifocal lenses have a very similar profile and fitting process to the Daily Total 1 lenses described above. Push plus in these lenses, too, as every bit of plus you can get on a patient will improve their reading vision.

Dailies AquaComfort Plus lenses are made out of Nelfilcon A, which is a polymer of partially acetalized polyvinyl alcohol (PVA). The unique thing about this material is that with every blink, it leeches free PVA into the tear film. According to trials done by Alcon, this oily, lipid substance helps stabilize the tear film. This makes Dailies AquaComfort Plus a first choice for me with my patients with Meibomian Gland Dysfunction (MGD). If I choose this lens for my patient for that reason, I tell them that “the material of this lens releases a little bit of oil with every blink, and the oil’s job in the tear film is to make sure that the water portion of the tears does not evaporate too quickly. This



lens may help stabilize your tear film and make your eyes more comfortable.” Again, tell your patients about the technology and why you are choosing it for them to get their buy-in.

### **Air Optix Aqua Multifocal**

The Air Optix Aqua multifocal is Alcon’s contribution to the monthly multifocal market. Air Optix Aqua is approved for daily wear, AND up to 6 nights extended wear, with a recommended replacement schedule of 4 weeks. Air Optix Aqua’s material is Lotrafilcon B, which has a 33% water content and is surface treated with Alcon’s permanent plasma technology. The aspheric back surface of these lenses also aid in centration.



Figure 6 [Top] above shows the power profile for this lens. To be successful in this lens, push plus in the distance just like with its daily cousins.

## **Bausch + Lomb**

The Bausch + Lomb family of multifocal contacts includes Biotrue One Day for Presbyopia, Purevision Multifocal and Purevision2 for Presbyopia, Soflens multifocal and Ultra for Presbyopia. All of these optics are center-near design. Thus, while I am going to focus my lecture on Biotrue One Day for Presbyopia and Ultra for Presbyopia, the two newest Bausch + Lomb multifocals on the market, the same routine can easily be transferred to Soflens, Purevision, and Purevision2 multifocals. Bausch + Lomb lenses come in High and Low add powers only, making for an easier initial fit. I also love that these lenses come with UV protection.

### **Biotrue One Day for Presbyopia**

Again, as I am a daily-heavy practice, I’m going to start with the daily lens first. In my experience, Biotrue is the daily multifocal that gives the clearest distance vision. When I show you the power curve in a few minutes, you will understand why. This is one of the primary lenses I reach for in those type A patients, or those who will not be happy with distance blur in their new multifocals.



Biotrue lenses are made out of Nesofilcon A, which is unique in that it is 78% water, just like the cornea is. I tell my patients that this trait makes the lenses very breathable, and since they are so high-water content, the lenses are less likely to suck the moisture from the eye by the end of the day, leading to that dried out feeling. “Less likely” doesn’t mean that I guarantee their eyes will not feel dry at the end of the day, of course. There are too many other factors, such as the health of the tear film, amount of time spent staring at a computer screen, amount of time in a dry (air-conditioned or heated) environment, etc. I tell my patients only that they will help.

Both Biotrue and Ultra lenses feature a B+L patented “3-zone Progressive Design” with a center-near optic system. (Fig. 7) This is designed to give the patient clear vision at three precise distances – distance, intermediate, and near. Figure 8 shows the powers in a -1.00DS High add Biotrue One Day for Presbyopia multifocal from the center of the lens (reading power) on the left, out to the edge of the optical zone (distance power) on the right.



Figure 7 Source: <http://www.bausch.com/our-products/contact-lenses/lenses-for-presbyopia/biotrue-oneday-for-presbyopia>

This is really great design for the patient who has needs at 3 specific distances, such as a patient I recently had who was a pilot wanting to qualify for his Class 2 license without glasses. He obviously needs to see clearly in the distance to take off and land his plane. His consoles and instrument panels are an average of 68 inches away from his eyes. (Yes, he actually measured both consoles before his appointment.) He would, of course, also like to be able to read his pre-flight paperwork. In contrast to someone who goes about their day doing a variety of different tasks at a variety of distances, who is willing to sacrifice a little bit of clarity in exchange for the flexibility of functional vision at all distances.

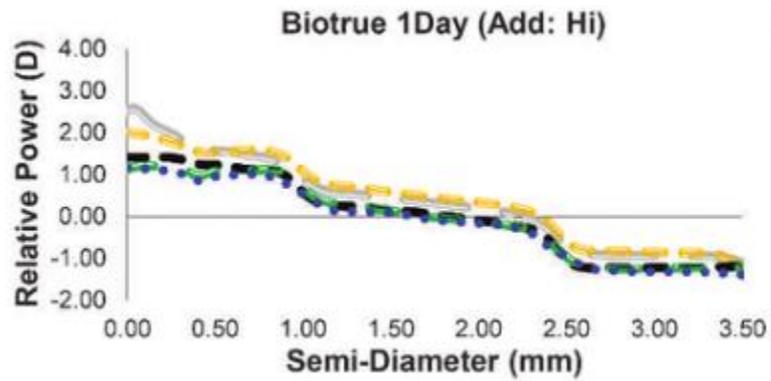


Figure 8 Source: [https://www.researchgate.net/publication/308797176\\_Power\\_Profiles\\_of\\_Commercial\\_Multifocal\\_Soft\\_Contact\\_Lenses](https://www.researchgate.net/publication/308797176_Power_Profiles_of_Commercial_Multifocal_Soft_Contact_Lenses)

With a power curve this precise in distance power, I hope you can see why it is important to not push plus in the distance with this lens. If you contrast this with the power curve of the Alcon lenses (Figure 6 above), I hope you can see why you would push plus in the distance with their lenses, but not necessarily with the Biotrue lens. (The Ultra for Presbyopia has a very similar power curve, making the rule to not push plus consistent between the two lenses.) In my opinion, this gives a little less flexibility as far as getting the patient into a lower add power, which you will remember is one of the strengths of the Alcon lenses, but with this precise of a distance power, I do not find that I need to worry about aberrations and distortions caused by a higher add power as much in these lenses as others.

## Ultra for Presbyopia

Ultra for Presbyopia is made out of Samfilcon A, and features B+L's Moisture Seal Technology. Moisture Seal Technology combines a silicone backbone for good oxygen transmissibility and low modulus, and combines it with polyvinylpyrrolidone (PVP) which is a water-loving polymer that weaves around the silicone backbone to create a hydrophilic surface for good wettability and comfort. Its edge design (Fig. 9) helps minimize lid awareness, further increasing comfort.



Figure 9: [Bottom] Edge design of the Ultra for Presbyopia. Source: Bausch + Lomb marketing materials.

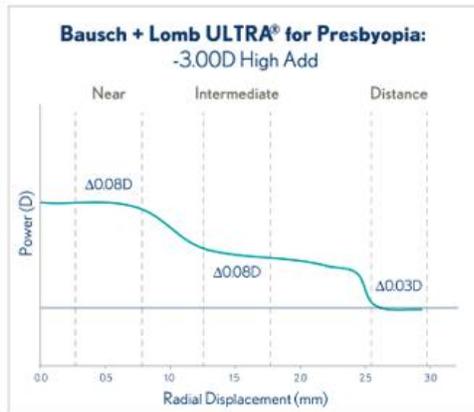


Figure 10 source: Bausch + Lomb marketing materials

Ultra for Presbyopia employs the same 3 Zone Progressive Design

with a center-near optical arrangement as the Biotrue for Presbyopia lens. The power curve for the Ultra is shown in Figure 10. This figure shows the power curve for a -3.00DS multifocal with a high add, from the center (reading power) of the lens on the left to the outer optical zone (distance power) of the lens on the right. This distance power precision is very similar to the Biotrue, making the fitting process nearly identical. Start with the spherical equivalent of the spectacle prescription, vertexed as needed, and do not push plus.

## Fitting the Patient

Now that we understand the optics of these lenses, how does this translate into fitting them on a patient? Unlike the Alcon lenses, Biotrue and Ultra come in High and Low add powers only. We have established that distance vision in these lenses is pretty good without the need to push plus, and as long as the patient's working distances are fairly standard, the lenses tend to work very well. Also, I have found that the high add powers do not cause as much distance distortion as with other brands. That said, I do prefer, whenever possible, to keep at least the non-dominant eye in the Low add, because in general, the clearer the distance vision is in multifocals, the easier it is for the patient to wear the contacts full-time.

This is where we need to go back to our notes from the exam room. First off, calculate the spherical equivalent of the spectacle Rx, and vertex if necessary. It is important to note that if the patient has more than -1.00D of astigmatism in an eye, then these lenses are most likely not the best lenses for them unless they have previously failed in both monovision and the Proclear Multifocal Toric (covered in Part 2 of this course), and are willing to put up with significant blur at all distances in their contacts. Do you remember which eye was the patient's dominant eye? What was their minimum add to 20/20? If their minimum add was +1.50D or less, and you want to fit Biotrue or Ultra lenses, start both eyes off in the Low add power. If the minimum add to 20/20 is +1.75D or greater, I put their dominant eye in the Low add and their non-dominant eye in the high add to start.

This next part is the hardest for me to do, and it is probably the most important part aside from setting patient expectations. The lenses need to sit on the patient’s eyes for at least 10 minutes. This lets the lenses settle, and it also allows the patient’s brain to adjust to the optics. I send the patient out into my optical and I tell them to “put the contacts to work.” I tell them to look out the windows repeatedly into the distance, look at small print on their phones or around the office, and also if one of my staff members is free, have them borrow a computer. I tell them to pay attention to which distances or tasks have good vision and which need to be improved, bearing in mind that anything I do to improve vision at one distance is going to slightly decrease vision at the other distances. While the patient is doing that, I am either back in my exam lane catching up on my charting, or I am seeing another contact lens check.

Once the lenses have settled for 10 minutes and the patient has taken their vision for a test drive, bring them back into the exam room. If you need to tweak distance, intermediate or near vision, do so. Once you have the best contacts on the patient, check VA’s OU only at both distance and near – remember that multifocals are designed to have the eyes working as a team, so do all of your testing with both eyes open. I also tell my patients that these lenses are designed to work together, but not individually, so going around covering one eye and then the other to compare vision between the two eyes does not accomplish what it does in glasses. My goal for VA’s is 20/25 OU distance and near. Often, I can get 20/20, but shooting for 20/20 100% of the time is not realistic, and why setting up patient expectations is so important. Once I have documented VA’s, checked the fit, and made sure that the patient is happy, I send them on their way for one to two weeks to try their lenses out in the real world. I will bring them back at the end of that period for a contact lens check. If vision, comfort and fit are good at the end of that time, I finalize the contact lens Rx. If vision needs to be improved at a specific distance, I make the change and send them back out with new trials for another one to two weeks. The vast majority of my multifocal contact lens patients are successfully fit and finalized within two fittings.

**Example Patient #1 – S.C.**

S.C. is a 52 YOWM who is an attorney who specializes in estate planning. He doesn’t spend much time in the courtroom, instead his work demands include extensive computer use as well as handling and reading paperwork. However, when he goes home for the day, he often watches his teenage son’s various sport events, which he would also like to see clearly. The patient used to wear an unknown “monthly” lens, but he discontinued wearing it when he started needing to use readers regularly, because if he was going to have to wear readers to see up close, he figured he may as well just wear the glasses full time. He is intrigued by the daily modality, as he has never been offered that before, and the convenience of throwing the lenses out every night appeals to him, along with the need to not carry contact lens solution around with him when he travels. His glasses prescription, dominant eye, and minimum add to 20/20 (measured OU), are shown in Table \_\_ above.

Table 1: S.C.

Right Eye	Left Eye
-1.00-0.25 x175	-0.75-0.50 x010
Dominant	Non-dominant
Min. add +1.25	Min. add +1.25

Let’s fit this patient in Biotrue One Day for Presbyopia. The first thing I am going to do is determine the spherical equivalent of both eyes. The spherical equivalent OD is -1.125DS, and OS is -1.00DS. Obviously, contacts don’t come in 0.125D steps, and since this patient is so focused on convenience, I am going to start out with -1.00DS in both eyes.

We know that higher add powers give more distortion and aberrations in the distance, so I am going to start this patient off with “Low” add powers in each eye. (Remember that Biotrue comes in High or Low adds only.) The patient puts -1.00DS “Low add” in each eye, and I let the contacts settle for 10 minutes or so as he walks around the optical.

At the end of that 10 minutes, the patient returns and reports that he is happy with his distance and computer vision, but is having a little bit of difficulty seeing his phone unless he enlarges the screen. To give him a little more help reading, I switch the contact in his non-dominant eye out to -1.00DS “High add.” Several more minutes later, the patient reports that he is happy with his vision at all three distances. I bring him back into the exam room and check distance and near VA’s OU. He is 20/20 in the distance and 20/25- up close.

The patient returns to clinic the following week for his contact lens check. Vision is still 20/20 OU in the distance, and 20/25 OU at 40 cm. The patient reports comfort for 12 to 14 hours in the contacts, and is very happy with his vision, stating that he only needs to use a low-powered pair of readers when he is reading a document with exceptionally small print. The fit is also good OU.

**His final contact lens Rx is:**

**OD: Biotrue One Day for Presbyopia, -1.00DS “Low add”**

**OS: Biotrue One Day for Presbyopia, -1.00DS “High add”**

Now, let’s fit this same patient in Dailies Total 1 multifocals. We are going to start with the same -1.00DS in both eyes, the power that has been determined to be the spherical equivalent of the spectacle Rx in each eye. (Do not forget to vertex correct, also, if needed.) His right eye is dominant, and his minimum add to 20/20 is +1.25. I’m going to walk you through Alcon’s recommended way to fit this lens, then I am going to show you my shortcut.

With a minimum add to 20/20 of +1.25, this patient fits into the recommended parameters for the DT1 “low” add. Thus, I start him off with -1.00DS Low trials in each eye.

After we let the lenses settle for 10 minutes as he walks around our office, the patient reports that distance vision is good, intermediate vision is OK, but his phone is really blurry. I stand the patient in the hallway, and hold the +0.25 side of my +0.25/+0.50 flippers over both eyes and have him look out the windows across the street. The patient notes a little bit of blur in the distance, but is quite a bit happier with his intermediate vision, and the phone is a little easier to make out, too. The patient wants to know if we can give him any better reading vision without blurring the distance vision so much.

Since this patient is right eye dominant, I hold the +0.25 flipper lens over only his left eye as an over-refraction. The patient does not notice any difference in his distance vision. However, when I hold the +0.50 lens from the flipper over his left eye, he notices that slight distance blur again. Thus, I bring the patient back into the contact lens room and have him switch out his left contact only for a -0.75 low add based on the results of my distance over-refraction.

The patient is now wearing:

OD: -1.00 Low

OS: -0.75 Low

The patient reports clear and crisp distance vision. Now it is time to improve his near vision. We have pushed all the plus at distance that we can on this patient before he notices the blur. Everything else we need to take care of by adjusting the add powers. Starting with his non-dominant left eye, I have him switch contacts from a -0.75 low to a -0.75 medium. Suddenly, the patient's phone is clear!

**His final contact lens Rx is:**

**OD: Dailies Total 1 Multifocal -1.00DS "Low Add"**

**OS: Dailies Total 1 Multifocal -0.75DS "Medium Add"**

**A quick shortcut**

Alcon is probably going to get mad at me for sharing this with you, as it is not a part of their official fit guide. However, if we look at the above patient again, you will notice that his distance prescription matches the sphere value in each eye. This example was not specifically constructed this way – this was a real patient that I saw, and I sent him home with trials of both Biotrue for Presbyopia and Dailies Total 1 Multifocals in the above powers to try for a week.

For any of you who know me, you know that I am not a fan of math. (Which is ironic, considering the amount of Physics we all went through to get here.) If I can come up with a trick to reduce the amount of math I have to do, I am all for it. Thus, when I am fitting a multifocal with a power profile similar to those Alcon lenses as discussed above, where I know I will need to push plus to be successful, the initial trials that I grab always match the (vertexed, if needed) spherical power of the spectacle Rx, never the spherical equivalent.

So think about that for just a moment. For multifocals that only come in spherical powers, most patients who are a candidate for them have -1.00D or less of astigmatism. The spherical equivalent of a prescription with that little astigmatism results in -0.25 or -0.50 less plus power, right? So how about we just skip the official 1<sup>st</sup> step of the fitting guide where we are supposed to find the spherical equivalent of the prescription if we are fitting Alcon lenses, and save ourselves a few minutes of putting a trial on the patient that we are most likely going to remove a few minutes later, in favor of a lens that is +0.25 to +0.50DS more plus? I hope that makes the same type of sense to you that it does to me, but again, that is just my shortcut, and it is not the official way that Alcon recommends that their lenses be fit.

**More Complex patient cases**

You did not come here just for me to walk you through an easy multifocal contact lens fit and call it good. So, let's move on to some of my more challenging recent multifocal contact lens fits.

Let's start with J.D. She is a 50 year old Caucasian female, new to my practice. She is a secretary, and spends a lot of her time on the computer, but also needs to see clearly up close to read charts and files, as well as see clearly in the distance. I saw her for her first appointment on March 2<sup>nd</sup>, 2017. The table to the right shows her spectacle prescription, eye dominance and minimum add to 20/20. She is also intrigued by the possibility of daily lenses, as she has previously only been in monthly contacts before, and found them "thick and uncomfortable." This patient had no ocular surface disease noted with biomicroscopy.

*Table 2: J.D.*

Right Eye	Left Eye
+0.25 -0.50 x080	+0.25 -0.50 x080
Non-dominant	Dominant
Min add: +2.00	Min add: +2.00

It is important to note that without distance correction, the patient can see a blurry 20/20 out of each eye, and a fairly clear 20/20 together. I did not prescribe this patient distance glasses, just prescription readers. Thus, right off the bat, we know that she is going to be a more challenging multifocal fit, because she does not have any experience with distance blur. She is vehemently against monovision, because she had a friend try it in the past who hated it. Thus, she does not even want consider it. I spent a lot of time in the exam room setting expectations in regards to distance vision with this patient.

What trials would you give her? Take a couple of minutes, look at all of the case information, and either jot down some notes or fix the numbers in your mind.

I sent her home with the following:

Dailies Total 1 and Dailies AquaComfort Plus multifocals:

OD: +0.25 "medium add"

OS: +0.25 "medium add"

Biotrue One Day for Presbyopia

OD: Plano, "High add"

OS: Plano, "Low add"

Take a moment and look at the distance powers. Do you understand how I arrived at those? For the Dailies Total 1 and Dailies AquaComfort Plus lenses, I took my shortcut and instead of taking the spherical equivalent, I just cut off the astigmatism portion of the prescription as my time-saving cheat for pushing plus in the distance. Since her minimum add to 20/20 falls into the power of the medium add for the two lenses, I left both eyes in the medium add power. For Biotrue, I took the spherical equivalent of the distance glasses prescription for the distance portion of the lenses. Since the patient's minimum add to 20/20 was higher than +1.50 (the cutoff for Biotrue), I bumped her non-dominant right eye up into the higher add power. Remember, this is what I did. There are certainly other ways and methods to get to the lens that will work for the patient. You may elect to do something completely different, especially once you become comfortable fitting multifocal contacts.

The patient came back very frustrated to her contact lens check almost three weeks later (which is a little later than I usually schedule them), on March 20<sup>th</sup>. The patient is really happy with her near and intermediate vision, but there's still some lingering blur in the distance that is making the contacts "unwearable" for her. The patient is ready to throw in the towel, and is frustrated that she paid a contact lens fitting fee and now is not getting contacts. I spent several minutes with her reminding her that we discussed that there might be a little bit of blur in the distance in exchange for the convenience of not being tied to a pair of readers. I also reminded her that I warned her it may take a visit or two (or four...) to get the contacts right, which is why I did not try to sell her contacts after her last appointment. The patient suddenly remembered that I did say that, and calmed down marginally. The patient also did not like the comfort of Dailies AquaComfort Plus multifocals, but she did like the Biotrue and the Dailies Total 1.

For this contact lens check, we tried to bring first the dominant eye to plano power at distance, then the non-dominant eye down to plano. Both options still had the distance blur that made the contacts "unwearable" for her.

I remembered that this patient was essentially 20/20 in the distance with no prescription, so after trying all of the steps we have discussed in the past hour, I decided to see what happened if we left her dominant eye with no contact in it at all. I had the patient remove her left contact lens, and miraculously, distance vision cleared up! The patient loved it, and also loves that she only needs to buy contacts for one eye instead of two. So much for her hating monovision, right?

The final trials I sent her home with were:

**Dailies Total 1 Multifocal**

**OD only: +0.25 "Medium add"**

**Biotrue One Day for Presbyopia**

**OD only: Plano "High add"**

The following week at her next contact lens follow-up, we finalized the contact prescription in the brand that felt the most comfortable to her.

Thank you very much for your time and attention. I hope the first part of this podcast made sense to you. Part 2 covers the other big manufacturers, Cooper Vision and Vistakon, as well as some more patient cases. We will also briefly touch on best practices for fitting multifocal RGP's. I hope you will join me there. If you have any questions, please do not hesitate to email me, and I will respond promptly.

**Corresponding Author:**

Michelle Darnell, OD

Spokane, WA

[michelle.darnell.od@gmail.com](mailto:michelle.darnell.od@gmail.com)

**Address questions about Pacific's Web CE to:**

James Kundart, OD Med FAAO FCOVD-A

Kundart@pacificu.edu

## **References**

1. Alcon Dailies AquaComfort Plus Multifocal Fitting Guide (starting on page 27):  
[https://www.myalcon.com/docs/dailies\\_pfg.pdf](https://www.myalcon.com/docs/dailies_pfg.pdf)
2. Alcon Dailies Total 1 Multifocal Fitting Guide (starting on page 11):  
[http://ecatalog.alcon.com/CL/DailiesTotal1\\_fg\\_us\\_en.pdf](http://ecatalog.alcon.com/CL/DailiesTotal1_fg_us_en.pdf)
3. Alcon Air Optix Aqua Multifocal Fitting Guide (starting on page 18):  
[https://p.widencdn.net/xdq9hq/W900102063\\_PFIG\\_LOTFB\\_US](https://p.widencdn.net/xdq9hq/W900102063_PFIG_LOTFB_US)
4. Bausch + Lomb Biotrue OneDay for Presbyopia Fitting Guide:  
<http://www.bausch.com/Portals/77/-/m/BL/United%20States/Files/Package%20Inserts/Vision%20Care/lenses/Biotrue-ONE-day-PIFG.pdf>
5. Bausch + Lomb Ultra for Presbyopia Fitting Guide:  
<http://www.bausch.com/Portals/77/-/m/BL/United%20States/Files/Downloads/ECP/Vision%20Care/ultra-fp-fitting-guide.pdf>
6. "Biotrue ONEday for Presbyopia Contact Lenses." **Biotrue ONEday for Presbyopia : Bausch + Lomb**. Bausch + Lomb, 2017. Web. 21 Mar. 2017.
7. "Contact Lens Powers and Specs." **ODspecs.com**. Awardspace, 2017. Web. 25 Apr. 2017.
8. Kim, Eon, Ravi C. Bakaraju, and Klaus Ehrmann. "Power Profiles of Commercial Multifocal Soft Contact Lenses." *Optometry and Vision Science*, 2016. Web. 21 Mar. 2017.
9. Wright, D., OD. "Multifocals - CONTACT LENS PARAMETERS." **Multifocals - CONTACT LENS PARAMETERS**. N.p., 2017. Web. 21 Mar. 2017. <<http://www.odspeccs.com/multifocals.html>>.