

# Module 5      Frames

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## ***Frame Selection***

Although being fashionable and looking good are important, nothing is more important when dealing with frames than how they fit. Remember the old snowflake metaphor? “People are like snowflakes...every one of us is different?” Well, you will learn this is true when you start fitting eyeglasses! Frames either fit, or they do not. You cannot make a frame designed for a child fit a grown man. Frames come in a wide variety of sizes. We are often asked if the frames on our board are divided by gender, which leads to thinking about what makes a men’s frame different from a women’s frame. To spot a traditional men’s frame look for features like a cross bar over the bridge, traditional gold and silver plating, aviator shapes, sharp angular shapes, and very large eye sizes. To identify a traditional women’s frame look for pinks and bright colors, decorative stones, and especially artful details on the temples or chassis. Everything else on the board falls into the unisex category! However even some “unisex” models seem to lend themselves towards one gender or another. Frames have 2 main parts to them.

**Frame Fronts:** When connected by a solid bridge of any kind (metal or plastic), the frame front is the combination of eye wires, bridge and the end pieces. This includes any crossbars above the bridge, and any artful details applied to any of those pieces.



**Temples** (also known as temple arms or arms): Temples are the pieces that hold the chassis to the head and ears. The temple is the piece that runs from the end piece on the chassis back to behind the ear. The temple also holds half the hinge assembly.



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Notice that almost every temple has a different end on it where it meets the hinge! Hinges come in an almost infinite variety so you can understand why you need to order the same exact part if one breaks.

## **Frame Selection by Face**



*Oval*



*Oblong*



*Round*



*Square*



*Triangular*



*Diamond*

While most faces are a combination of shapes and angles, there are six basic face shapes: Oval, Oblong, Round, Square, Triangular and Diamond. Here is a further description of these face shapes and which types of frames work for each. By considering these three main aspects and the seven face shapes that follow, the Dispenser can give Patients valuable guidance in the selection of their new eyewear.

1. The frame shape should contrast with the face shape. Rounder faces look best in frames with some angles. Angular faces look best in frames with some curves.
2. The frame size should be in scale with the face size. Frames should be selected in proportion to the face size, e.g., a petite woman with delicate features will want a smaller, lighter weight frame.
3. Eyewear should repeat the Patient's best features, e.g., a blue frame to match blue eyes.



**Oval-Normal Face** - Most shapes will be suitable. The oval face is considered to be the ideal shape because of its balanced proportions. To keep the oval's natural balance, look for ophthalmic frames that are as wide as (or wider than) the broadest part of the face, or walnut-shaped frames that are not too deep or too narrow.



**Oblong-Long Face** - Frames with a lot of depth, such as aviator frames, suit oblong faces. A low nose bridge will shorten the nose, too. The oblong face is longer than it is wide and has a long straight cheek line, and sometimes a longish nose. To make the face appear shorter and more balanced, try frames that have a top-to-bottom depth, decorative or contrasting temples that add width to the face or a low bridge to shorten the nose.

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Round-Wide Face - Round faces look good with angular narrow frames that lengthen the face. A round face has curvilinear lines with the width and length in the same proportions and no angles. To make the face appear thinner and longer, try angular narrow frames to lengthen the face, a clear bridge that widens the eyes and frames that are wider than they are deep, such as a rectangular shape.



Square-Wide Face - Same criteria as round face. Needs frame that softens the face angles, such as narrow ovals. A square face has a strong jaw line and a broad forehead, plus the width and length are in the same proportions. To make the square face look longer and soften the angles, try narrow frame styles, frames that have more width than depth, and narrow ovals.



Triangular-Inverted Base-Up (Heart) Face - Lighter looking frame is recommended such as metal or rimless or lighter colors in zyl. Faces in the shape of a triangle need frames that are wider at the bottom, with very light colors. Rimless frames and semi-rimless frames are also good choices. This face has a very wide top third and small bottom third. To minimize the width of the top of the face, try frames that are wider at the bottom, very light colors and materials, and rimless frame styles, which have a light, airy effect since the lenses are simply held in place at the temples with screws.



Diamond Shaped Face - Looks well with frames that have detailing or distinctive brow lines. Diamond-shaped faces are narrow at the eye line and jaw line, and cheekbones are often high and dramatic. This is the rarest face shape. To highlight the eyes and bring out the cheekbones, try frames that have detailing or distinctive brow lines, or try rimless frames, or oval and cat-eye shapes.

From the [WWW.OpticalCourse.com](http://WWW.OpticalCourse.com) website.

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## Frame Shapes

Although fairly self-explanatory frame shapes fall in to three general categories, round, rectangle, and oval. When describing a frame as round it is assumed that the eye wire will be an almost perfect circle. When describing a rectangular frame or eye wire it is assumed that the horizontal and vertical lines of the frame will be approximately 90 degrees apart from each other and that they will meet at what could best be described as a corner not a curve. The oval category will be longer across the A than across the B and will not have any distinguishable corners or straight lines. Within the categories you will see and hear frames being labeled as “modified” or as being a variation of one shape or another.

Note: Frames have a base curve just like lenses do. Some prescriptions do not do well in certain frames. The higher plus the prescription the steeper or more curved the lens will be so consider an aspheric lens in those cases. A minus prescription will have little or no curvature of the lens. Should a frame be very flat (having very little face form) it will not hold a plus lens well. The reverse is true when we consider minus lenses in heavily wrapped shapes like sport sunglasses.

**Poor Rx - Frame matching is one of the most common reasons for lenses not staying in a frame.**

## Frame Types

There are two kinds of frame materials: metals and plastics.

**Metals** have four general types:

1. **Monel**, or basic nickel-based metal frames. These are inexpensive and make up the bulk of all low and mid-range metal frames made today. If a frame is metal and not flexible or not marked ‘stainless steel’ or ‘titanium,’ chances are excellent it is a Monel-based frame. The Aristar 6700 image shows the look of a typical Monel based frame.



### Advantages of Monel-based frames:

- Easy to adjust
- Hold adjustments well
- Very strong
- Relatively light in weight
- Can have a wide range of colors and plating like bright gold and bright silver
- Economical
- Can be repaired by solder.

### Disadvantages of Monel -based frames:

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- Outermost plating (the layer that touches the skin) can wear off, which can cause skin allergies or reaction to nickel in Monel metal
- Prone to breaking after repeated bending
- Once plating is worn away, metal may erode quickly and create abrasive areas and sharp edges
- Monel is the heaviest of metal frame materials in use.

2. **Stainless steel** is used in many mid-range to high-end frames. Stainless steel is also made in the same shape and color range as Monel. Most stainless steel eyeglass frames will be marked on the demo lenses Stainless or Stainless Steel and MAY be marked on the inside of the temple as well. If no markings are present you may not be able to tell the difference between a Monel frame and one made of stainless steel.



### Advantages of stainless steel frames:

- Light in weight because of reduced material
- Very strong
- Very little chance of allergic reaction to metal
- Holds color well
- Attractive appearance
- Holds adjustments very well.

### Disadvantages of stainless steel frames:

- Limited range of colors
- Colors tend to be matte in finish
- Larger frames can become heavy.

3. **Titanium** is used in many mid-range and many high-end frames. Since it comes in a wide range of colors, plating, and styles, it is not always possible to spot a titanium frame unless it is marked as such. Its extreme light weight may tip you off. A titanium frame of equal size may weigh half as much as an identical frame in Monel.

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## Advantages of titanium frames:

- Titanium is hypo-allergenic: it will not cause reactions with skin
- It is extremely lightweight
- It is 100% corrosion proof
- Extremely durable. A well-made titanium frame can last for years
- Very strong.

## Disadvantages of titanium frames:

- Titanium is not easy to manufacturer, and not all companies provide the same quality of production
- Frames can be legally labeled 100% titanium yet contain other metals
- Frame lines may be inconsistent in their quality. Just because a frame is ‘titanium’ does not mean it is a quality product.
- Adjustments can be tricky. If a frame is 100% titanium, it can break easily at weld points if not well made
- A well-made titanium frame can last for years which might discourage repeat sales

4. **Flexible or memory metals** are metals with flexible properties, and are usually a mix of titanium and other metals. These frames will either be all flex-metal throughout the entire chassis and the entire temple, or a mixture of rigid areas and flexible metal. Many flex frames will be “pre-stressed” or curved to act as a spring. Flex metal frames are generally high-end and expensive. Just like titanium frames, not all flex metal frames are created equal. Many lower-end frames offered with memory metal, do not have the same quality of higher-end ones. Brand names for flexible metal frames include, Flexon, Flexolite, Easy Twist, MagicTwist, HyperFlex, CX etc.



Memory metal frames are extremely popular for use in kids frames for obvious reasons.

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## **Advantages of flex metal frames:**

Note: Many flex frames are titanium blends. Most often the other metal is nickel so most flex frames, although containing titanium, are NOT hypo-allergenic!

- Bend instead of break
- Return to original shape after being bent
- Have spring-like quality that helps hold glasses in place on head
- Lightweight.

## **Disadvantages of flexible metal frames:**

- If not well designed with adjustment points built in, frames may be impossible to adjust
- You may find fitting difficult on people with unusual or very asymmetrical face shapes
- Some patients cannot adapt to a flexible frame; they actually need to feel the frame on their nose!
- People (especially children) may incorrectly assume that the frame is indestructible, or that it can be bent repeatedly without damage.

## **Plastics:**

1. 'Zyl,' or Zylonite, makes up the bulk of all plastic frames on the market today. If a frame is plastic, chances are excellent that is Zyl. Zyl is also called acetate or cellulose acetate. .



Tura Tournéau 080 Image courtesy of Tura

## **Advantages of Zyl frames:**

- Light in weight
- Huge range of colors
- Strong
- Fairly easy to adjust
- Can be molded in any shape and size

## **Disadvantages of Zyl Frames**

- \* Can lose shape in high heat
- \* Will discolor over time
- \* Will dry out and become brittle over time
- \* Will stretch out in hot weather

An alternative to full eye wires is the semi-rimless mounting, which uses half an eye wire of metal or plastic along with a piece of nylon fishing cord to hold the lens in place. These frames



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are also known as “groove-mounts,” because of the groove placed in the lens to hold the string in place. The lens is held in place by the tension the string places on the lens and by a tongue along the eye wire that catches the groove in the lens. These frames are reliable, and have been around for decades now. Adjustments can be tricky to make without breaking the string.



Because a Plus lens is narrow on the ends and you must have enough thickness to cut the groove, they are NOT recommended for semi-rimless frames. In some cases the lens will be twice as thick, losing any weight savings over a full rim frame.

Another alternative to full eye wires is the Chassis, which is also called a drill mount. These glasses are created by attaching the two temples independently, and then attaching a bridge directly to the lenses through holes that have been drilled through them. In drill mounts, the “bridge” will contain the guard arms, nose pads, bridge, and attachment points as one complete piece.



Note: Either Trivex or hi-index materials MUST be used in the drill mounts, or the lenses will crack. CR-39 or mid-index plastics may not be used.

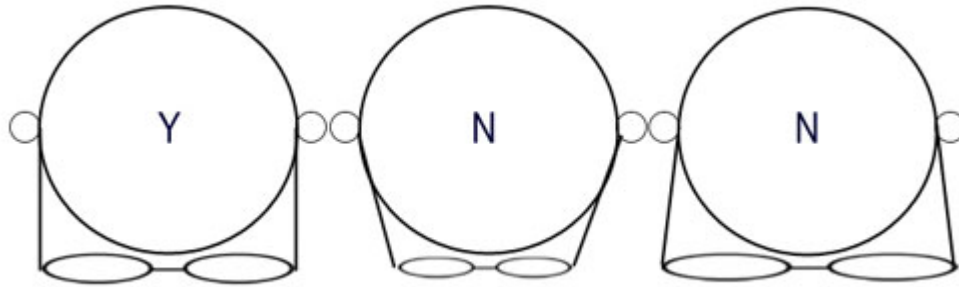
## Primary Frame Fitting Considerations

The first thing to consider when fitting a frame to a patient’s head is the width of the frame. This means how the temples fit the sides of the patient’s head. A properly fitting frame will have its temples leave the frame front, or chassis, and go straight back, touching the person’s head just before their ear. There is simply NO EXCEPTION to this rule.



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A frame that is too tight or too narrow may feel quite good to the patient when they first try it on. However, it will shortly begin to give them trouble by sliding down their nose in a short period of time. A frame that is much too loose or too wide will slide down their nose immediately.

Note: One good clue that a frame is too small is when a frame has spring hinges and they are partially open when the frame is on. Spring hinges are only there to provide flex when taking the glasses on and off or when they are struck. **SPRING HINGES HAVE NOTHING TO DO WITH THE FIT OR COMFORT OF A PAIR OF GLASSES!**

**Second**, we must consider how the frame fits the patient's nose. Consider whether the frame is a plastic one with a molded solid bridge, or a metal one with adjustable nose pads. If the frame is plastic and has a solid bridge, then the frame either fits, or it does not. There is simply **NO EXCEPTION** to this rule. Look at the patient's nose, and see how the frame fits it. If the frame contours the nose well and has great contact across the entire bridge, then it fits. If you can see gaps or light showing between the nose and the bridge then it does not fit, and the patient must choose another frame. If the patient loves the frame, this may put you in an uncomfortable position, but remember that you are the optical dispensing professional and should be able to explain your reasons that the frame does not fit and the problems that will cause. Does the below frame fit?



**NO!** This plastic frame makes very little contact with the patient's nose. In fact because of its design it only touches at the two sharp points of the "keyhole" and would be uncomfortable to the wearer. What about the next one?

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YES! This is a much better plastic frame fit. Notice how the curve of the frame matches the curve of the patient's nose. You want maximum contact and do not want to see gaps or "daylight" between the nose and frame bridge.

If the frame is metal and has adjustable nose pads, be sure the pads are sitting comfortably on the nose, are not too far apart or too close together. Simply look at the pads and be sure they are touching the nose as much as possible. If they are not, you will need to adjust them.



In this figure the pads are making good contact with the patient's nose. In particular look closely at the pad for the right eye (left eye in the picture) that is EXACTLY what you want to see, including the exposure of the pad and guard arm when viewing the patient.



Some metal frames have solid bridges with plastic inserts that either screw in or snap into place, covering the entire bridge area of a metal frame. These solid bridges eliminate nose pads and guard arms while they mimic the fit and feel of a plastic frame while providing the advantages of a metal one. Check fit of metal frames with solid bridges as you would a plastic frame.

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Keep this in mind as you learn your frame boards, so you will be able to quickly guide your patients towards great-fitting frames. It is a fine line between adjustability and a frame with a bridge that is simply too wide or too narrow.

**Third**, check that the temples are long enough to curve over the ear properly and hold the glasses in place. This is often overlooked by even the most seasoned optical dispensing professional. For some reason, we seem to forget to check behind the ear and see if the temples are too short. Temples should never be bent to curve around a person's head (unless provided by the manufacturer as part of the design of the frame)

If we sell a frame with temples that are too short then we risk remaking a pair of glasses. Many temples can be shortened but few can be lengthened. You may be able to slide a temple tip approximately 5 millimeters off the temple and maintain a normal bend effectively creating a longer temple on wire frames.

Develop the habit of performing these checks now, and remember the rule of three:

One -- Width

Two -- Nose

Three -- Temple length

## Secondary Frame Fitting Considerations

After determining that the frame is the appropriate width, has a good fit on the nose, and that the temples are long enough, we need to consider a few other things.

For cosmetic appearances, it is best to choose a frame with a frame PD ( $A + DBL$ ) as close to your patient's PD as possible. Remember the less decentration you have the better. Try to keep your patient's eyes well centered in each eye wire opening. Also keep in mind the smaller the eye size, the thinner and lighter the lens will be.

When a prescription is high plus try to utilize an aspheric lens. This helps diminish the "bug-eye" appearance created by plus lenses' magnifying power. Using the proper lens material and aspheric base curves will greatly reduce the cosmetic appearance of high powered lenses. The 1.67 or 1.71 Hi-index will be thinner and lighter make it an aspheric and you will have a great lens to go with your frame selection for those higher powers.

( From the Open Optix ABO study guide at [www.openoptix.org](http://www.openoptix.org) )