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Basic Dispensing for the Paraoptometric Assistant

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A Completed Form

• Patient’s Name
• Date
• Patient’s PD
• Lens Type
• Lens Material
• Fitting height
• Coatings and tints
• Frame information
• Frame status
• Check account info

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Patient’s PD

A traditional method of taking the interpupillary distance
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Patient PD

- The Pupilometer

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Corneal Reflection Pupilometer

- Essilor

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- Pupilometers are more consistent and more accurate than the PD rule.
- Pupilometers measure the corneal reflex and hence the distances between the visual axes and not just the pupil centers. This is why the pupilometer appears to read narrow.
- Pupilometers have been shown to reduce reject rates for progressive lenses in practices which have changed from the PD rule to the pupilometer.
- Pupilometers are more professional and give the patient a greater perception of accuracy when filling his/her Rx (appearances do count).
- Pupilometers eliminate parallax errors, which are almost unavoidable when your PD differs appreciably from the client's.
- Pupilometers take monocular PDs quickly, easily and accurately.
- Pupilometers allow you to take near PD measurements for a range of working distances.
- Pupilometers allow you to occlude one of the patient's eyes while taking measurements of someone with strabismus.
- PD rules are great for measuring almost anything other than a PD. They are fine for frames; perhaps we should be calling them 'frame rules.'
A Handy Ruler

How to take a PD using a Rule

Patient’s PD

Estimating pupil center can be difficult especially on dark eyes.

It is usually better to use the limbus (edge of the iris) as a landmark.
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Placing a finger below your left eye, ask the patient to keep their eyes fixed on your finger. While they are looking in the direction of your left eye, align the zero mark on the rule with the inner edge of their limbus.

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Now, without moving the ruler, move your finger directly below your right eye. As the patient's eyes follow your finger to a resting place on your finger, observe the measurement of the rule at the outer limbus. This is the binocular interpupillary distance.

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• Now have the patient look at the near point and quickly obtain a measurement for the near PD.
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What about an infant?

- Simply measure from the inner canthus on one eye to the outer canthus on the other eye.

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“A” Measurement

- The “A” Measurement is the longest horizontal measurement of the lens shape.

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“B” Measurement

- The “B” Measurement is the longest vertical measurement of the lens shape.
A False “ED” Measurement

- Many people wrongly measure the longest measurement of the shape and consider it the “Effective Diameter.”

True “ED”

- In fact, the true “ED” is twice the longest radian of the lens shape from the geometric center.

In this example:
27.5 x 2 = 55

True “ED”

- The “ED” tells us what diameter lens blank is needed to cut the shape but does not take decentration into account.
A Quick "Guesstimate"

- When you can't find the true ED, add 3 mm to the "A" measurement for a reasonable approximation.

Bridge size / DBL

- DBL Stands for Distance Between Lenses at their closest point.

- Measuring at the datum line will not give an accurate bridge size.
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Frame PD

- The “Frame PD” is actually the “A” measurement & the DBL added together
- This measurement is critical to knowing how much to decenter a lens

Note how the “T” rule with its extended zero point can give a very accurate frame PD.

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Calculating Decentration

- A+DBL = Frame PD
- Frame PD – Patients PD = Decentration

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Checking Progressives for Cut-Out

- Place a dot on the sample lens exactly at the patient’s pupil
- Place the lens on the chart with the pupil dot on the cross
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Measuring for frame selection
- Selecting a frame intelligently demands that you know:
  - The patient’s PD
  - The frame PD
  - Why?

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Measuring for frame selection
- It really makes a difference in lens thickness

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Choosing the right frame size to keep lenses thin

The weight and thickness are proportional to the size of the lens
The knowledge of the frame stylist must be conveyed to the patient

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Choosing the right frame size to keep lenses thin

The need for decentration is eliminated and the lens is the same thickness on each edge.

A lens must be decentered if the eye is not exactly centered in the frame.

Lens thickness due to decentration

Try to select a frame whose frame PD closely matches the patient's PD.

A good rule for fitting is to keep the total decentration at 6mm or less.

Patient's PD

- Why do we take a PD?
- To position the lens correctly before the eye
- Note how the lenses thicken with decentration
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Patient’s PD

• Plus lenses thicken in the nasal area

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Summary Checklist for Keeping Lenses Thin

• Small frames make for thin lenses.
• Decentering lens to match PD creates thickness.
• Use High Index Materials
• Use Aspheric Lenses

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Multifocal heights

Iris
Pupil
Lid Margin
Canthus
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Seg height / Seg drop

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Multifocal Placement

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Temple Length

• Skull
• Cable
Selecting Eyewear With a Purpose

- Analyze the prescription to determine limiting factors, and opportunities to correct them.

- Know the patients interpupillary distance. Consider how it will impact the frame selection.

- Determine the visual lifestyle needs of the patient, i.e. safety, occupation, recreation, hobbies.

Selecting the Proper Bridge

- Do not allow the patient the opportunity to become fond of a frame until you have made sure that maximum contact is possible.

- Place the nosepad between the ridge of the septum and the eye.

One Piece bridges

Beware of this trap. It creates a very painful fit.
Behind the Ears

Universal Frame Alignment

Curve the temples slightly so they do not touch the sides of the head until they reach the widest point. After the widest point there should be constant contact on the mastoid area.

Universal Alignment
(Use the system!)

- Start with the bridge
  - Check for "x-ing"
  - Make sure lenses are coplanar
  - Check for frontal alignment
  - Always double check previous adjustments

- The Eyewire
  - Check for rolling
  - Make sure the barrels are closed
  - Make sure the eyewire follows the bevel (base curve)

- The Temples
  - Must butt well at hinge
  - Shank may be curved
  - 40mm bend standard

- The Endpiece
  - Temples should be square with lens (X axis)
  - Temples should be flat (Y axis)
  - Temples should fold well (Z axis)
FITTING FROM A UNIVERSAL ALIGNMENT

- A good fit is usually determined by the patient as a comfortable fit that will not slide down the nose.
- As you pull the eyewear forward they should catch the ears evenly.
- If the pressure is even, there will be a balance that creates no pressure at all on the sides of the nose.

Universal Frame Alignment

Beginning at the bridge, and aligning the frame to the very tips of the temples provides the basis for a perfect fit.
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Check “X-ing” with reflex from lens fronts.

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X’d bridge

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Grip at bridge welds and un-twist.
Check skew against table edge.

Push with thumbs, pulling back with fingers.

Face form becoming more normal.
Work on one side at a time

Now work on the other side.
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Panto & Retro Tilt

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Adjusting the Level

To lower this side and move the bottom of the lenses away from the cheeks, bend this temple up. (Pantoscopic tilt)

To raise this side and bring the bottom of the lenses closer to the cheeks, bend this temple down. (Retroscopic tilt)

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Changing panto tilt
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A two pliers approach for major bends

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Overlapping fold

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"Cross swords" fold
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Dangerous approach

Slide 71

A safer approach

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When viewing nose pads, consider them as you would wear them
Adjusting Nose Pads

Frontal angle  Splay Angle  Vertical Angle

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No frontal angle

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Frontal angle
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Narrowing Nose Pads

- Moves pad position up and out
- Frame position follows

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Holding the pad like a key,
Turn the top toward the center.

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Now push the bottom inward.
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The narrowed nose pad

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Widening pads

• Moves pad position down and in
• Frame follows pad position

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Holding the pad like a key,
angle the top outward.
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Now push the bottom in with your thumb.

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Widening completed.

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Frame Position

• To raise frame – lower pads
• To lower frame – raise pads

• Do NOT change the width between pads!
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Lowering nose pads

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Open the pad arm bend.

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Grip the pad arm close to the weld.
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Tighten the curl by pushing the pliers toward the frame while turning.

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Lowering completed.

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Raising nose pads

• To lower frame – not change pad position
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Open the bend.

Slide 95
Apply the pliers close to the pad.

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Apply upward pressure with the pliers as you tighten the bend.
Pad has been raised

Questions