

A TECHNIQUE FOR DIAGNOSTIC CONTACT LENS FITTING

BY

JOHN R. KENNEDY O. D.

St. Paul - U.S.A.

The beginning of the new often comes from the ending of the old. From past experience and knowledge we can arrive at premises and procedures which would otherwise be impossible. So if you have chosen the contact lens field as your challenge and endeavor then your beginning must be made and those of us who have gone before can each help a little.

It is recognized that the large, successful contact lens practices in the United States, as in other parts of the world are concentrated in the offices of a few men. There are many practitioners who do contact lens work, but by and large it is limited and a small part of their general eye care practice. It will be the intent of this paper to draw from the knowledge and experiences in my travels and practice to present a procedure to help the small contact lens practitioner or the man who is about to enter this field. We are all impressed by the fine and valuable contributions that have been made in the contact lens field by research and by manufacturers, by the remarkable developments in plastics and the fabrication thereof, by the pharmaceutical developments and the excellent supportive products we now have from the field of chemistry and by the theoretical conceptions which have evolved into procedures and techniques that are very much a part of the general practice of contact lens fitting.

The road to success in contact lens fitting is the elaborate road, not the make-shift one. The best equipment is the easiest to use. The finest instruments are the simplest and the most accurate. Certain basic mechanical and optical equipment is essential and the very minimum is as follows:

- 1) Radiuscope

- 2) High quality thickness gauge — stand mounted
- 3) Lensometer
- 4) Diameter measure scale
- 5) Seven power magnifier for optical zone measurement
- 6) Lens thickness charts
- 7) Ophthalmometer
- 8) Millimeter-diopter conversion charts or slide rule.

These above instruments are relatively expensive, but your practice grows in direct proportion to the success of your patients. The sooner you have this equipment and the better that it is, the sooner you will have positive control of your fitting. So, obtain them as promptly as you can and you will thank yourself every day. I could not work one day without a Radiuscope type instrument.

Compared to what? When the experienced fitter puts a diagnostic lens on a patient's eye, he can often write out the formula for a successful lens at that moment. He uses his scientifically gathered findings just as the new fitter does, but when he looks at a lens on a patient's eye he then uses something the new fitter does not have. "The background of many successful cases and the knowledge of what constitutes a proper fit". He compares this lens to known standards which he carries in his computer brain.

The new fitter compares the lens to nothing except theory and knowledge. It is great, but not enough so to hasten the day when the new fitter becomes experienced. This paper suggests a two or more diagnostic lens comparative technique in which two different designs are compared simultaneous one on each eye.

Time for decision. The time of decision for the contact lens fitter comes after he has gathered all necessary data from and about the patient including the eye findings. He must now decide what lens will be "designed" for this patient. Will it be large or small? Will it be steep, parallel, or flat? Will it be thick or thin? The questions are multitudinous, but the decision *must* be made at this point. Here, I concur with many other writers that the easiest and most successful way to arrive at this decision is through the use of diagnostic contact lenses. The diagnostic contact lens must be as precisely close to your finally prescribed contact lens as your physical equipment and mental capabilities will permit. If an adequate diagnostic trial set of lenses is not part of your office equipment then the relatively new contact lens fitter should strongly consider the use of case basis fitting (lens ordering system where laboratory provides as many lenses as needed to arrive at final best design) or the method in your

area that enables you to have a number of lenses to see upon the patient's eye before making a decision.

I suggest you consider at least two different lens designs on each patient. The least expensive and the most informative way to do this is to have a different design for each eye or two different designs for one eye.

The one for the right eye could be Design "A", which I will explain shortly, the one for the left eye could be Design "B". I will be rather precise in describing these designs knowing that as the fitter's experience expands he will promptly modify techniques in the direction of more successful fitting and more delicate procedure. I cannot tell you in your country exactly what lens to use on the patient you have before you, but having taught contact lens procedure to many students, I know we must proceed from the simple to the complex. So, some leniency is taken in this paper to over-simplify the fitting procedures, trusting my reader is seriously dedicated and adequately schooled to bring his foundational knowledge to the fore in arriving at proper lens design. The two lens formulas that we may consider are not arbitrarily chosen, the first is a basic author design which has been used and proven over more than fifteen years and can be depended upon as a reliable beginning formula. So let us assume that for lens "A" for the right eye we begin with a lens which is .02 mm. of radius longer curvature than the longest meridian of the patient's cornea measured on a very good and precise ophthalmometer. The secondary (intermediate) curve will be 2 diopters flatter than the base curve. The diameter of the lens, 9.7 mm. The peripheral curve, .3 mm. on a 12.25 tool. The optical zone, 7.6 mm, and the thickness will be .008 inches (.02 M/M) if the power is approximately -2.50, thinner for more minus, thicker for less minus. The contact lens "B" formula will be as follows: Base curve, 1.25 diopters steeper than the longest meridian of corneal K, reading. Secondary curve (intermediate) 2 diopters flatter than the K reading. Note it is 2 diopters flatter than cornea "K", not lens-base curve. Diameter, 8.2 mm. Thickness, .006 if the dioptric power is approximately -3.00 thinner if more minus, thicker if less minus (refer to laboratory thickness chart) Optical zone, 6.6 mm. Peripheral curve (bevel) .1 on a 17.00 diopter tool and power -1.25 more minus than patients R/x for corrective ophthalmic lens.

Now these two lenses will bracket several current philosophies of fitting and with reasonable judgment on your part, should enable you to arrive at a successful pair of contact lenses for your patient. In both of these lenses the power was to have been computed to be optically correct for the patient for best V. A. You should evaluate the fluorescein fit of the contact lenses, the tear flow, the positioning of the lens, the injection or absence of injection of the scleral conjunctiva, the subjective symptoms and your objective opinion of the fit of these lenses. You can now compare one lens to something instead of nothing and

quickly your judgment will develop. Remove one lens if there seems to be a problem and continue to observe the performance of the other lens. The whole procedure can be completed in a short time, but with periodic observations on the part of the doctor.

A very important word of caution: If both lenses are applied at the same time, A in the right eye, B in the left eye, the patient will report the left smaller lens more irritating. Therefore, have the patient wear the smaller lens only for ten to twenty minutes before applying the larger lens. It is extremely important in our field to be objective and open-minded because there exists extreme rigidity of opinion among many practitioners and they prefer to protect their ideas of fitting to the exclusion of progress. We are constantly learning and must constantly adjust and adapt to better procedures.

In no event should a final opinion be reached in less than three hours patients wear and then only after your critical observation. Make your decision which of the two designs you prefer? How must you modify or change the design to arrive at the best one for your patient? And at this point, if your judgment was very good, it will be necessary to make only one more lens. If your judgment was somewhat naive and lacking in experience, it may be very necessary and desirable to make a new pair of lenses based on the information and data you gained from the comparative diagnostic fitting.

As I stated earlier, I am in favor of diagnostic trial lens sets. We have an extensive number in our two offices, but we almost never have just the one that we want. For this reason, I remind you that your best diagnostic lens is the first contact lens you actually order for the patient. This has the proper weight, size, thickness, diameter, power and curvature. You must see it on the eye and then record in your history the best contact for each eye —not the formula of the one diagnostic he is wearing, but how you would alter that diagnostic lens for the perfect lens. Record it even if only slightly different from the one observed. This will be your basic lens design. Future alterations will relate to it.

I believe your laboratory should welcome the opportunity for you to have several lenses in your possession on each patient in the beginning rather than one pair at a time because it will hasten the day of mature judgment when it will only be necessary for you to have one pair of lenses in your possession for each patient.

IS THIS ALL? A brief critique on the above techniques is very much indicated. Contact lens fitting is an art and a science. Some men by their nature, training and background can and will become successful practitioners in the micro-miniature area of corneal contact lenses. Certain other men will never learn the art and the skill of fitting contact lenses, and a “misfit” in the contact

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lens field will misfit continually to the detriment of all for years to come. The great majority will do moderately well with contact lens fitting in their practice. In my opinion, it is still a specialty, and one of the most challenging in the world today. It is almost possible to relate a man's philosophy to his success or lack thereof in the contact lens field. The great fitters that I have met in South and Central America, in Europe, England and Scandinavia, and in the great United States, were each and every one a highly dedicated practitioner relatively sensitive of personality and gifted with a desire for constant knowledge and improvement. To you, the new contact lens fitter, I give this thought: After making your decision and fitting the best pair of lenses for your patient, and when you have applied your skill to the fitting of these lenses and the proper training of the patient, if symptomatology develops, please consult with the most experienced practitioner in your area. This is the time in contact lens fitting when personal discussion with another practitioner is most valuable. Discuss the fitting and the problem of your patient, it is very likely he can help you over those initial problems that must be solved before you become captain of your own contact lens destiny.

451 Lowry Medical Arts
St. Paul, Minnesota

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