The LenSoClean Ultrasonic System: Not Just Another Veg-O-Matic

Robert Gerowitz, O.D.

Remember when you first saw those commercials for the "Pocket Fisherman" or the "Veg-O-Matic"? They looked so cool. They just *had* to work for you as well as they did on TV. Then yours arrived and didn't it just suck? You couldn't cast and if you did actually catch a fish, you couldn't chop the vegetables to have it with.

With those thoughts in mind I told the folks at AlphaVista that I would try out LenSoClean on my own ortho-k lenses before I would recommend it to any patient. Yep, I couldn't be more skeptical if I tried.

So, after my sample system came I used it for 2 weeks. I had to admit that my lenses felt more comfortable and did indeed seem clearer. Was that enough? I don't think so! For the third week, I went back to my good old cotton swab and high performance RGP cleaner. Now I was convinced. My lenses were not as comfortable or as clear as when I used this thing that my kids say "looks like a PokaBall".

Why did it work so well? I contacted Helmut Weber and this is what I was told:

The tiny bubbles that clean contact lenses in the LenSoClean device are formed when ultrasonic waves pass through the cleaning solution in its small stainless steel tank. Glued to the flat bottom of the stainless steel tank is a transducer. In this case, the transducer is a piezoelectric crystal, which converts electric current at a high frequency into mechanical vibrations of the same frequency. These vibrations are transmitted through the bottom of the tank into the liquid, where they become ultrasonic waves.

In the LenSoClean, the frequency is sixty three kilohertz, or 63,000 cycles per second. When ultrasonic waves of a sufficiently high frequency and power level pass through a liquid, cavitation occurs. Cavitation is the extremely rapid formation, expansion, and collapse of countless microscopic bubbles in the liquid. When a cavitation bubble implodes, the molecules of liquid surrounding it rush inward to fill the near-vacuum of the bubble with such enormous speed that microscopic shock waves are created. These violent shock

shock waves are followed by "microjets" of liquid that shoot outward with great force. And that's where the ultrasonic cleaning action comes in. When swarms of "bubbleblast" implosions go off near a dirt particle or a glob of protein residue stuck to the surface of a contact lens, they blow it away.

It's like sandblasting, only less abrasive. The dirt particles (atmospheric dust, bacteria, residues from mascara or eyeliner, etc.) fall away from the lens, and sticky protein residues dissolve away. The lens surface, however, is not harmed in any way.

According to the "Efficacy Assessment of LenSoClean Unit Treatment as Compared to Enzymatic Treatment in Removal of Protein Deposits using EMI Photography" report, prepared by ORA Clinical Research and Development, Massachusetts (June 30, 1998): "Lenses that were cleaned with a leading enzyme cleaner and cleaned using LenSoClean (were) compared with the aid of a scanning electron microscope. The directions in the label were followed for each of the cleaning regimens. After treatment, no large deposits (were) left on the lenses (and) only a few small (1-25 micron) deposits were left on lenses treated with either system."

Convenience is a key issue with most consumers. LenSoClean is truly a "no rub" system. All that's required is to put the contact lenses into R & L baskets, fill them with a low viscosity solution, (Alpha-Vista has their own proprietary solution or Simplus is a good alternative), plug in the unit and press the start button. The system is very compact for travel, I've found, on many occasions.

Compliance with instructions for use is a key issue with most practitioners. It is well known that a main reason for lens wearers' poor compliance with cleaning regimens is the tediousness of the process. With this system, compliance by patients should be high, resulting in improved lens hygiene and reduced complications that lead to wearer dropout.

To paraphrase a different commercial: as far as the LenSoClean system is concerned, I'm not just the doctor recommending it, I'm also a user.

Dr. Robert Gerowitz is in private practice in Palatine, IL and has no financial interest in either AlphaVista or MEDXgroup.

LenSoClean is available to practitioners at a reduced cost through MEDXgroup

www.contactlenscleaning.com

Robert Gerowitz graduated with honors from Northeastern Illinois University in 1977 with a degree in Pre-Optometry. In 1979 at the Illinois College of Optometry, he received a second bachelor's degree in Visual Science and in 1981 was awarded his doctorate in Optometry.

An Overview Of VIPOK Inc.

The Vipok Motto “Fitting is as easy as 1-2-3.”, is the mission of a United States based company which also has roots in Asia. Represented by both ophthalmologists and optometrists, the company is committed to research in the specialty of orthokeratology. Vipok has primarily focused on technique and design of its lenses since the year 2000 and seeks to provide more efficient and effective methods of inventory lens dispensing. With a new up and coming product line, Vipok is working to provide doctors with the latest quality products.

The inventory system of four curve lenses helps eliminates the need for refitting and reduces the amount of chair time spent with the patient. Vipok has a patented method of inventory dispensing that utilizes a reference table for uncomplicated and speedy identification of the best treatment lens. This allows the doctor to fit and dispense in the same visit, and reduce time-consuming rechecks in the future. The benefit is a more accurate initial fit. Troubleshooting is also reduced with the inventory system as lenses are available at the doctors disposal for treatment of most residuals errors. All this leads to better fitting success for the orthokeratologist.

Vipok has the Vipok XC design available for up to 10.00 diopters of myopia. This lens design was introduced in 2002 during the inaugural Global Orthokeratology Symposium (GOS) in Toronto. According to Vipok, this design has proved to be safe and effective over the last four years. The goal of the company is to have doctors that perform orthokeratology consider the Vipok XC when confronted with a high myope above 5.00 diopters. This lens design has not been approved by he FDA for overnight wear.

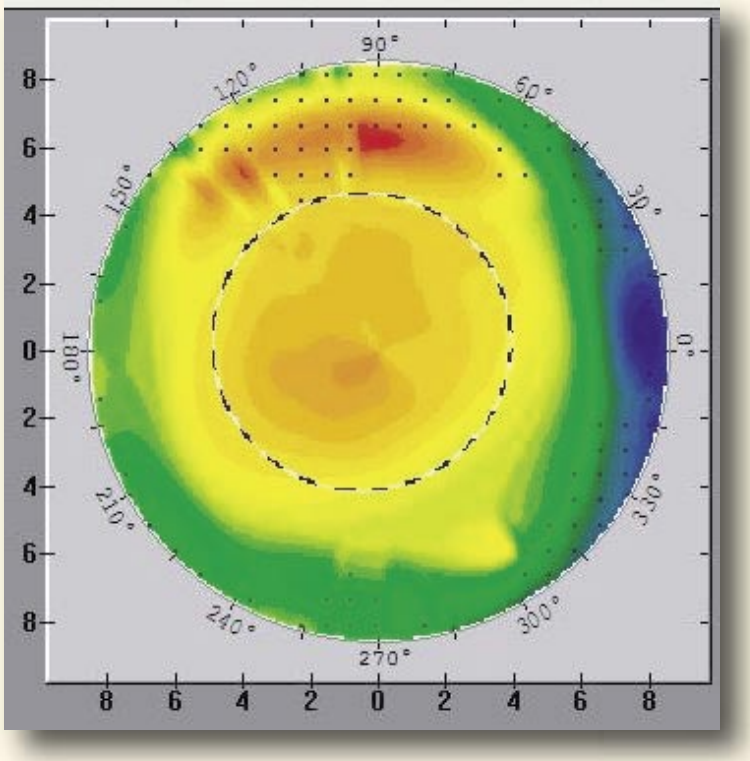
Vipok has plans to present their hyperopia orthokeratology design (Vipok H) effective up to 5.00 diopters. This patented unique design fits like a four-curved reverse geometry lens without the problems of a tight lens. As a counterpart to this lens, Vipok will also introduce the presbyopic Orthokeratology design (Vipok P). This design will mold the cornea into a multi-focal shape which will allow the presbyopic patient to see both far and near without the need for any reading glasses or other aids. Both products are slated for an end of the year launch and Vipok is very confident in their work. “It is exciting and rewarding to see the progress and acceptance of the Vipok products by the practitioners” remarks Paul T. Woo, O.D., consultant for Vipok Inc. “As a clinician, I am able to see the results and improvements on my patients and I get even more excited when I am introducing the Vipok lineup of products to doctors.”

For their complete product line visit www.vipok.com or call 1-800-991-8881.

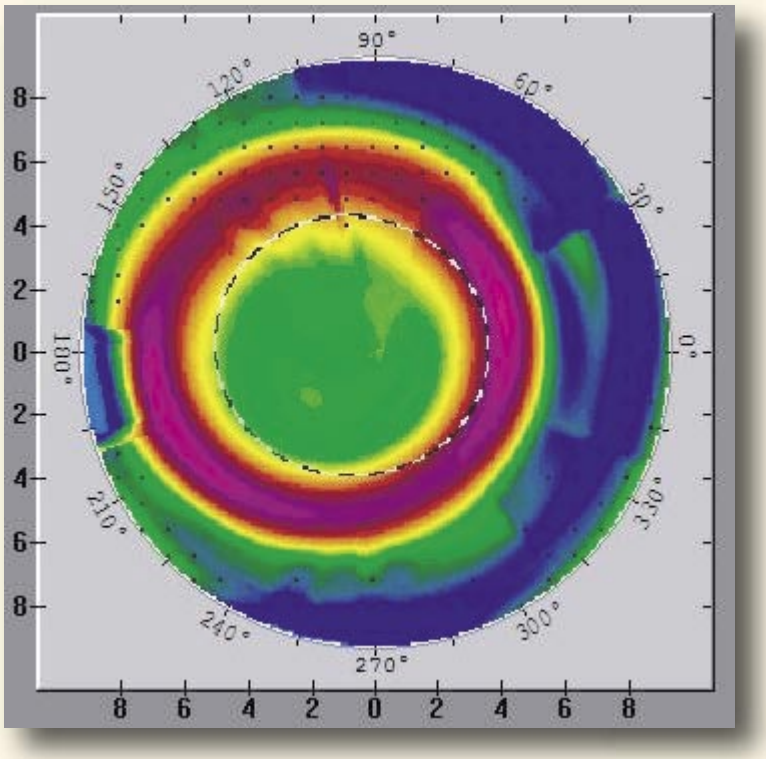
Orthokeratology In Switzerland

Michael Schultze, O.D.

When Ortho-K became popular in Europe (one year ago) my colleagues and I were skeptical at first whether this relatively new procedure would be harmless and healthy. After reading some studies and due to the fact that orthokeratology was safe for the eyes, we decided to offer orthokeratolgy in our store. At first I thought, orthokeratolgy was a product that would only help a small group of patients. After fitting a number of patients with ortho-k lenses, I've found the procedure to be suitable for a wide range of people, even those with myopia as high as 5 dpt.



I believe ortho-k may eventually become as similarly important to the patient as glasses or classic daily wear contact lenses. Ortho-k lenses seem to healier for the eyes than soft lenses (which induce a lack of oxygen). Additonally, some studies have shown that orthokeratology could have a positive influence on myopia.



To properly fit ortho-k lenses it is necessary to use a good Keratograph, connected with a laptop. The computer program, I use is exactly the same that *Techno Lens* uses to manufacture the lenses. The lenses arrive at our store wihin three days, and over 90% are a perfect fit. It is quite amazing to see how easily ortho-k works, my clients are immediatley pleased with their lenses. In many cases the visual acuity (VA) after one night is up to 80% (at myopia up to -2.00 dpt).

After three nights, the target myopia compensation is reached, regression although in the late evening is often high (up to 20%). Even one week later, regression is slows down and the keratographic measurement at the morning often compares to that in the evening. After an examination the morning after the cornea shows no considerable changes. In some cases you can see a small field of superficial corneal staining or adhered mucin at the center that will quickly disappear (appr. after 2-5 hours).

Before final control is accomplished, after about 7-8 weeks, several examinations are necessary to guarantee health to the patient's eye. When final control is passed without any problems and the patient is satisfied, lens fitting is generally finished. Following this, the lens-wearer recieves a reminder postcard after two or three weeks, and subsequently every six months.

Patients supplied with accelerated orthokeratology often describe another kind of view during the day in a positive way in comparison with the best classic contact lenses before. Wearing glasses or classic contact lenses mediate a view "through" an optical medium. Even objectively measured VA's of "only" 80 or 90% after wearing ortho-k won't change anything at all. This is an interesting psychological phenomena.

In Switzerland, orthokeratology is only used by approximately 8 % of all practices. A lot of optometrists are still skeptical of this procedure. The reason is very simple: by studying optometry and especially contact lens fitting we all learned that an RGP lens should **never** touch the cornea in the center because of resulting durability damages. These doubts need to be discussed. The efforts in the USA and Australia show that problems that may occur with ortho-k are not different in a significant way to classic daily wear contact lenses.

Michael Schultze was born in Germany in 1966 and studied optometry in Cologne. He now lives in Switzerland, where he is responsible for the contact lens department of an optical in Berlin

The Future Of Orthokeratology

What is the state of orthokeratology as it pertains to the future? Ortho-k has grown over the last few years, more lenses are becoming FDA approved, and the number of doctors using ortho-k is growing both nationally and globally. It is important to look towards the future as this specialty has the potential to move towards general practice. The staff of the "Corrective View" would like the input of all our readers in the debate that follows. What do you see as a future for ortho-k? Will it be practiced as specialty care like orthodontics or become part of general practice? The points supporting both positions are listed in our two scenarios.

Scenario 1: Orthokeratology as General Practice

General practice orthokeratology could be a knowledgeable asset to every eye care practice. Patients know of it before they even step through your office doors (like orthodontic devices in dental practices) and every doctor would have the option to include it in their services. Ortho-k would be used as a first step treatment for myopia reduction, especially with children, instead of specialized treatment. Patients then would look to ortho-k instead of glasses and normal contact lens options. The practice of ortho-k becomes more then a bonus source of income, overnight and daily wear ortho-k become practice builders. Glasses and regular contacts become vision supplements instead of the norm.

Doctors who would at first be opposed to ortho-k might be forced to consider otherwise in order to make sure they were not left by the wayside. General education for doctors means more opportunity to learn about this treatment. As more doctors practice ortho-k the level of education rises as well, resulting in more qualified practitioners. Ortho-k as general practice increases the stability of interested doctors. Avenues for education become better recognized and neophyte orthokeratologists have a better foundation to stand on when committing establishing their ortho-k practice. Continuing Education classes and lecturers would have the opportunity to be at their best and thus produce more competent future ortho-k doctors.

Fees would become competitive, a doctor's ortho-k practice would have to contend with his/her neighboring professional competition. The over all cost of ortho-k would dip to accommodate this, but there would be more and more potential candidates as a result. Vision insurance would begin to play a role; a patient would find ortho-k under their standard coverage. Lenses, services, replacement or follow up care would all become more affordable and doctors would have to share income per patient with insurance companies.

General practice orthokeratology could advance technology and lens companies would

General practice orthokeratology could advance technology and lens companies would be motivated to research new designs and improve products. Increased comfort, quicker results, easier fits are just a few of the multitude of changes that would advance the lens industry. Doctors would be able to choose from a long list of lens types and designs to become proficient with. Likewise the new specialty care of ortho-k would come from those doctors who are skilled enough to fit and treat the most difficult candidates. Eventually the technology and application of ortho-k grows beyond the dreams and expectations of it's originators. More patients become candidates, more treatment applications are available and the industry is evolved as a result.

General acceptance of orthokeratology would build overall credibility for treatment on a whole. Negative results from unfortunate inferior care would have less of an effect on the industry as a whole. Ortho-k as a familiar name in eye care puts the emphasis of quality care back into the hands of each practitioner and their individual reputation instead of hurting the entire industry.

Overall education of orthokeratology raises the bar for the average eye care practitioner. Having every doctor maintain an ortho-k portion of their practice upgrades the quality of eye care for more patients. With ortho-k as a myopia reducing alternative more patients have an innovative and lifestyle friendly solution to myopia rather then the standard fix of glasses or daily wear contacts.

Scenario 2: Orthokeratology as a continued Specialty Practice.

Specialty Orthokeratology allows the doctor to remain at the top of their field. Continuing to offer ortho-k as specialized treatment insures the doctor a position as the skilled professional. Patients would have to come to the doctor exclusively instead of shopping around for the best rate. The doctor maintains their fees to reflect their specialty and has less concern about being under cut by ambitious competition. As a specialty the doctor also maintains his own standards of practice, where as a more general practice outlook establishes a professional standard that could be limiting to the practitioners who practice at the cutting edge of eyecare.

Not all doctors are willing to commit to the technological and continuing education requirements. Starting an ortho-k practice requires the means and the will to venture into a new area of eye care. Few doctors have the commitment to technology (such as a topographer) or the interest in learning something additional to their practice. For those professionals that are interested, the venues for learning are there and can only improve with time. Moving orthokeratology into a form of general practice could be an unwanted change for established doctors and would present a daunting task for educators. The benefits of adding ortho-k to one's practice have a more positive impact as it is embraced by those doctors who are willing to commit to it.