

January 2013

synapse

Back to School

Dear Colleague

January is in full swing and children all over have headed back to school. Parents are familiar with the long check list: Uniforms, shoes, school bag, books, stationery, sports gear... but contact lenses?

We prescribe contact lenses for several reasons. The small vertex distances in contact lenses reduce the magnification and minification that spectacle lenses induce in high hyperopic and myopic corrections. For the same reason contact lenses minimize the effects of aniseikonia secondary to significant anisometropia. So CLs may offer better vision than spectacles and certainly give better peripheral vision, both of which are useful for active people. They need not worry about breaking their glasses and function better without the discomfort or inconvenience that may result from spectacles. All of these reasons are valid for children, so what's holding us back?

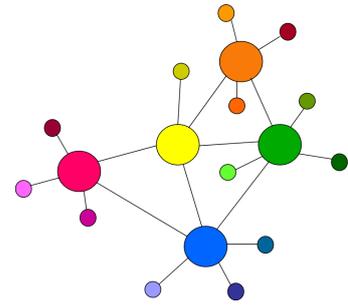
Are the physical differences a deterrent?

Drs Brujic & Miller: 'The interpalpebral fissure is significantly smaller in the pediatric population, and it is a critical consideration when fitting children with contact lenses. Teaching children proper insertion and removal techniques can be challenging. At times, a 13.8mm diameter lens (or smaller) may offer pediatric patients an advantage.

Myopia is increasing, particularly in Asian populations. The Collaborative Longitudinal Evaluation of Ethnicity and Refractive Error (CLEERE) study followed a sub-group of 4556 non-myopes (non-myopia being defined as a cycloplegic autorefraction in the right eye of no more than -0.75D myopia in both principal meridians at study entry.) This multi-center, longitudinal study included subjects aged 5-16, representing 5 racial/ethnic groups. Over 16% became myopic during the study, with the largest

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In this issue

- Children and contact lenses
- Arcus senilis in children
- Business: Back to basics

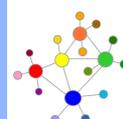
Did you miss the previous issue
(December 2012)
of Synapse?

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BOTSWANA OPTOMETRISTS ASSOCIATION

Synapse would like to welcome members of the Botswana Optometrists Association.



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number (18.2%) diagnosed at age 11. New cases of myopia occurred in 27.3% of Asians, 13.9% of African Americans, and 11% of whites. More females than males became myopic (18.5% vs 14.5%), and (perhaps surprisingly) normal-birth-weight children had more new cases than did low-birth-weight children (16.9% vs 15.5%). If 16% of children are myopic, most of them by the age of 11, we could definitely have more pediatric CL patients.

Medications

Differences in tear film function are not a typical concern, in fact tear volume and quality are usually good, thanks to healthy meibomian gland secretions. They are less likely to be taking medications that impact on tearfilm, with the notable exception of hormone based skin treatment e.g. when teenage girls say they are 'on the pill for my skin' or patients may be on isotretinoin (Reaccutane) which has several side effects, including reduced meibomian gland output and dry eye. Isotretinoin's popularity is waning in some areas, particularly in the US, and replaced by low dose doxycycline which is much cheaper and does not affect the tear layer in the same way. I have several pediatric and adult patients on Reaccutane, though, so it's still worth asking about. Children, even more than adults, won't know to tell you about their systemic medications.

Address Underlying Ocular Issues

Just because children typically have great tears and healthy eyes, do not neglect the eye health exam before you start the fitting.

Blepharitis, for example, can cause problems with CL wear but generally responds well to treatment such as lid scrubs, and if recalcitrant, topical antibiotics.

Allergies are another threat to successful CL wear and common in children. Vernal conjunctivitis may preclude contact lens wear. Other types of ocular allergies may be manageable, but keep a close watch on these patients and constantly re-assess whether CLs are in the child's best interest.

Relostat (epinastine HCl) and Patanol (olopatadine 0.1%), both bid dosing, can be used before lens insertion and after removal or Pataday (olopatadine 0.2%) after removal at night.

Most new fits are now SiHy lenses. While we do want to give our patients the healthiest lens possible,



Practice Management

Many practitioners would like to learn more about practice management but don't know where to start. Make 2013 the year that you get to grips with these 4 business basics.

► Staff salaries as percentage of turnover.

If you've given your staff increases, you will need to increase your turnover as well or your net profit will suffer. One way of preventing this is making your staff compensation package incentive based. The actual percentage itself depends on your location and mode of practice, but leading practice management author Chris Faul recommends that we aim for about 20%.

► Cost of goods (COG)

COG is the price paid for the products that we sell (e.g. frames, spectacle- and contact lenses.) In the US and in South Africa, the ideal is about 30%. Any improvement in this figure improves the net profit. With your prices under pressure from medical aids this year, review the products you keep. Consider

consider the risk of GPC, which may be more common in children. Having all but disappeared, GPC has resurfaced with the higher modulus (stiffer) silicone hydrogel (SiHy) lenses. The latest SiHy materials have a higher water content again, and here's hoping that the resurgence of GPC was temporary. GPC is chronic in nature and difficult to treat. Try switching those patients to daily replacement lenses.

Maturity and responsibility

Of course, the differences between adults and children are not limited to the physical. The ability to take on the added responsibility of CL wear is an important consideration at any age, and something that we assess during the initial contact lens fitting. How do we assess this in a child? [Dr Mary Lou French](#) suggests including these questions in your case history:

- How mature is the patient?
- Does he do well in school? Good grades alone are not an indication of the intelligence of a patient, but they do indicate his willingness to follow instructions and his motivation to succeed at what is important to him.
- Does he play sports? Again, I don't look for whether a patient is an athletic star, but whether he appreciates the need to practice to achieve a skill—such as learning contact lens application and removal techniques.

Besides the health and physical responsibilities, I explain the financial responsibilities to my patients. The consequences of re-using solutions or overwearing lenses because things are tight financially are a vital part of the education. In the case of a child, a parent will need to give an opinion on whether the child is responsible enough to wear contact lenses and whether the family can afford to make the financial commitment. Generally, it's not a switch from spectacles to contact lenses, but rather adding contact lens costs, which are ongoing, to the periodic cost of spectacles.

For the parents to make an informed decision, address all their preconceptions about contact lenses. If you have previous successful pediatric CL fits, mention that. If necessary, you can set up a meeting of the families. Recent research shows that age should not be the only consideration: The CLAY study group examined children and young adults (age 8-33) at 6

developing an in-house surfacing, lens casting and finishing service. If operated properly, an in-office lab can cut costs dramatically. The improved service will also raise income.

► Staff productivity

Cell phone use is no longer limited to talking. Texting, Facebook, games, web surfing and music affect productivity. Set a policy or your staff will take chances. Then enforce that policy.

► Debtors

Debtors mean lost interest, impaired cash flow, and resources wasted on the collection process. Every member of your staff should understand this fact and play his/ her role to ensure prompt payment, preferably before the spectacles are made. My staff are great at quoting our policy and blaming the National Credit Act for our unwavering stand. No credit. Remember, says optometrist and [practice management expert Dr Richard Kattouf](#): You're running a business.

Source:

The Big Five of Business
Kattouf RS
[Optometric Management, March 2012](#)

US academic eye care centres over a period of over 3 years to try and find a pattern of the [risk factors that would result in interrupted contact lens wear](#). 'Chart review of 3549 SCL wearers yielded 522 events among 426 wearers (12%).

- The risk of an event increased from ages 8 to 18 years, showed modest increases between ages 19 and 25 years, and then began to decline after age 25 years.
- New lens wearers (<1 year) were less likely to experience events ($p = 0.001$).
- Lens replacement schedule and material were also predictive of interruptions to SCL wear with the lowest risk in daily replacement and hydrogel lens wearers (both $p < 0.0001$).

The results suggest that the risk of events that interrupt SCL wear peaks in late adolescence and early adulthood, and ... relative to older teens & young adults, patients younger than 14 years presented with significantly fewer events resulting in interrupted lens wear. A subsequent study investigated possible reasons for the higher risk of corneal infiltrative events with soft CL wearers in late adolescence and early adulthood. Is there an association between risk of infiltrates and living arrangements, water exposure, general health and age? A questionnaire was tailored to 18-33-year-olds and 360 soft CL wearers (1/3 male) in 5 cities were interviewed.

The 18-21 group...

- were more likely to wear contact lenses in the shower or while swimming.
- sometimes rinse their CLs with tap water (19% of them)
- were more likely to get < 6 hours of sleep
- had a higher prevalence of illness (colds or flu) in the previous six months
- had higher stress levels
- more likely to live in 'high-density' situations (e.g. sharing a room with more than one person)

Whether this behaviour actually drives the higher risk for infiltrative events is uncertain, but the study does show that behaviours associated with infiltrative events are more pronounced in this age group so counsel your university age students on the risk related to such behaviours.

Parents may think that a child who is 'heavy' on glasses would not take good care of CLs, but fre-



Top Tips for pediatric fitting

1. **Talk directly to children.**

Children like to feel that they're part of the process, even if their lenses are medically necessary and not what they want.

2. **Encourage lens handling.**

Children, like adults, fear the unknown. Minimize anxiety by letting them play with a CL.

3. **Exude confidence.**

If you radiate confidence, children will trust you. Remember that you are driving the bus.

4. **Have children wash their hands with you.**

Chat about the importance of hand hygiene.

5. **Teach breathing exercises.**

A few slow, cleansing breaths—in through the nose, out through the mouth—before applying a lens can reduce anxiety, not only for the children, but also for parents and you.

6. **Have children practice touching their eyes.**

Place a drop of viscous lubricant on his fingertip and have him place it on the conjunctiva.

7. **Reward success.** Allow the child to choose from

quent adjustments and repairs may just be an indication of an active child; a good reason to try CLs. Not all parents are hesitant. Some want their child to wear contact lenses, particularly if they are also CL wearers. [Dr French says](#) 'My advice to anyone fitting children is to make very sure that it is the patient, not the parents, who wants the lenses.'

The bigger picture

Studies comparing spectacle wearing children to contact lens wearing children have found statistically significant differences over a 3-year period with improved self-perception regarding physical appearance, athletic competence and social acceptance in the CL wearers. Clinical psychologist [Mitchell Prinstein](#) says such changes in a child's psychological development 'set a new trajectory for their future development.' [Dr Debbie Jones](#) followed a group of 162 subjects (aged 8-16) for their first 3 months of soft CL wear. Subjects completed a quality of life survey (The Pediatric Refractive Error Profile) at each study visit, and their parents completed the survey at the end of the study. The overall quality of life score was higher at the exit visit (i.e. with contact lens wear) than at the baseline visit (i.e. with spectacle wear) and 98.8% of parents reported that CL wear had been a positive experience for their child.

Are pediatric patients more time consuming?

Many children are highly motivated and quick learners. Some do require extra time and patient manner. French mentions a patient that required 6 sessions to master the insertion and removal, but in my practice, our 'worst' patient was an adult who returned 3 times, and no younger patient has ever needed more than 1 visit. [Dr Debbie Jones & colleagues](#) at the University of Waterloo reported on training 168 new pediatric contact lens wearers, aged 8—16, how to incorporate lens wear and care into their daily routine. 'Nearly all of subjects were successfully fit and able to handle soft contact lenses. There were no significant differences between age or gender groups with respect to length of time for contact lens training.

| Subject age | Mean training time | Range |
|-------------|--------------------|--------------|
| 8-10 | 34± 19 minutes | 5-90 minutes |
| 11-13 | 28± 11 minutes | 8-55 minutes |
| 14-16 | 28± 16 minutes | 5-80 minutes |

a selection of small inexpensive toys or games once a lens has been applied successfully.

8. Teach lens removal

first. Lens removal is often easier than insertion, and the success builds confidence.

9. Schedule kids' appointments in groups.

Children like to know that other children wear contact lenses. Parents also like to talk to other parents who have been through the process. I would never have followed this advice—surely too many kids at once wreaks havoc with your schedule and your consulting room—but it happened by coincidence recently and it's amazing. The first child was talking the second through the instruction and they both had the opportunity for positive reinforcement. Meanwhile the parents were comparing notes in the waiting room and they all left together.

10. **Don't give up.**

10. Don't give up.

[Dr Christine Sindt](#) says she has been bitten, kicked, scratched, and sworn at by the same little children who now sit on her lap and cuddle.

Source:

Twelve tips to improve your pediatric contact lens fitting.

[Contact Lens Spectrum, June 2012](#)

The children were easy to fit and train, the majority being successfully fit, dispensed and trained at their first visit. The average training time was 30 minutes. Only 9 children (5.4%) required a second training visit and 92% of the children were still wearing contact lenses successfully after three months.

A Case in Point

[Brujic & Miller](#) describe 'Megan, a 6-year-old female, has expressed interest in contact lens wear to both her parents and myself, and her parents would like to know if she's a good candidate for lens wear. She has worn glasses for the past two years. Megan is relatively mature for her age and does extremely well in school. She plays competitive chess and is now starting to play basketball. Her best-corrected visual acuities are 6/7.5- OD, 6/7.5- OS, and 6/6-2 OU with the following prescription: +4.25 – 1.00 x 010 OD, +6.50 – 0.75 x 010 OS. Anterior and posterior segment examination were healthy OU.

Megan was initially fit with a prism-ballasted hyperopic/astigmatic toric contact lens. She learned insertion and removal relatively quickly. At her first follow-up visit, she told me that she was much more comfortable playing basketball in her lenses. At this point, she wears a silicone hydrogel toric contact lens successfully.

Sources:

- *Risk Factors for Interruption to Soft Contact Lens Wear in Children and Young Adults*

Wagner, H; Chalmers, R; Mitchell, G; Jansen, M; Kinoshita, B; Lam, D.; McMahon, T; Richdale, K; Sorbara, L; The CLAY Study Group

[Optometry & Vision Science, August 2011](#)

- *How young is too young?*

Brujic, M & Miller, J.

[Review of Cornea & Contact Lenses, May 2010](#)

- *If at First You Don't Succeed, Try, Try Again*

French, M.

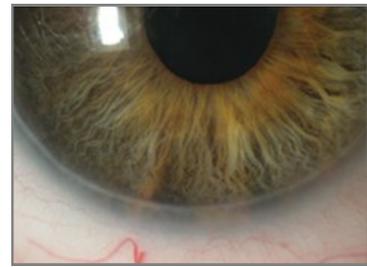
[CL Spectrum, May 2012](#)

- *Ease of contact lens fitting and training in a child and youth population*

Jones, D.

[BCLA presentation, May 2012](#)

Pediatric Arcus Senilis



What may appear to be childhood arcus is probably actually posterior embryotoxon, says [Dr Greg deNaeyer](#). Posterior embryotoxon is a prominent Schwalbe's line visible on gross external examination as a bilateral ring. It is an indication of either Axenfeld's or Rieger's anomaly/syndrome. These anterior chamber syndromes put patients at risk for glaucoma so they should be monitored annually if IOP is normal.

Axenfeld's

- Autosomal dominant
- Posterior embryotoxon
- Iris processes
- Increased IOP, or (Axenfeld's syndrome)
- Normal IOP with glaucoma risk: 25-50% (Axenfeld's anomaly)

Rieger's anomaly

- Axenfeld's plus iris hypoplasia.
- Glaucoma risk: 50-75%

Rieger's Syndrome

- Rieger's anomaly plus facial, dental & systemic manifestations.

Source

Online Photo diagnosis
DeNaeyer, G.

[CL Spectrum, Dec 2009](#)

- Survey of the relationship between age, environmental exposure and general health status in young soft contact lens wearers.

Chalmers, R.

[BCLA presentation, May 2012](#)

- The acceptance of children and teens to CL wear.

Jones, D.

[BCLA presentation, May 2012](#)

- New cases of myopia in children.

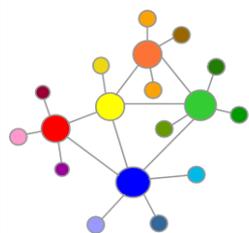
Kleinstein RN, Sinnott LT, Jones-Jordan LA, Sims J, Zadnik K, Collaborative Longitudinal Evaluation of Ethnicity and Refractive Error (CLEERE) Study Group.

[Archives of Ophthalmology, October 2012](#)



CPD questions

1. The CLEERE study evaluated CL management for pediatric keratoconus.
2. Contact lens wear should be suspended during the treatment of acne with doxycycline.
3. Reaccutane increases oil gland production which leads to increased lens deposits.
4. GPC has almost completely disappeared with the advent of SiHy materials.
5. The 3-year CLAY study found that 12% of patients aged 8-33 have events requiring them to suspend lens wear.
6. Students (18-21 years) are the age group most at risk for infiltrative CL events, probably due to less sleep, more stress and poor hygiene.
7. Children who wear contact lenses perceive themselves as 'different' and may struggle with self-image problems.
8. It takes about 30 mins to train children (8-16 years) to insert and remove lenses.
9. Posterior embryotoxon is a prominent Schwalbe's line and can be confused with arcus senilis.
10. Reducing debtors improves your cash flow and saves on the resources you would have wasted in the collection process.



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International Events

March

[International Symposium on Ocular Pharmacology and Therapeutics](#)

7 - 10 March 2013

Paris, France

[MIDO Trade Show](#)

2-4 March 2013

Milan

[Optometry Tomorrow](#)

17 - 18 March 2013

Nottingham, UK

April

[World Council of Optometry Meeting.](#)

19 - 21 April 2013

Malaga, Spain

June

[British Contact Lens Association \(BCLA\) Congress](#)

6-9 June

Manchester, UK

[American Optometric Association Congress](#)

26 - 30 June 2013

San Diego, USA



How to submit

your CPD answers

E-mail your name and surname,

HPCSA number and answers to optometry@synapse.org.za

Expect a response to your mail within seven working days.

Any questions?

Contact the synapse team at optometry@synapse.org.za or +27 87 15 111 47 on weekdays, 8.30 - 17.00.