

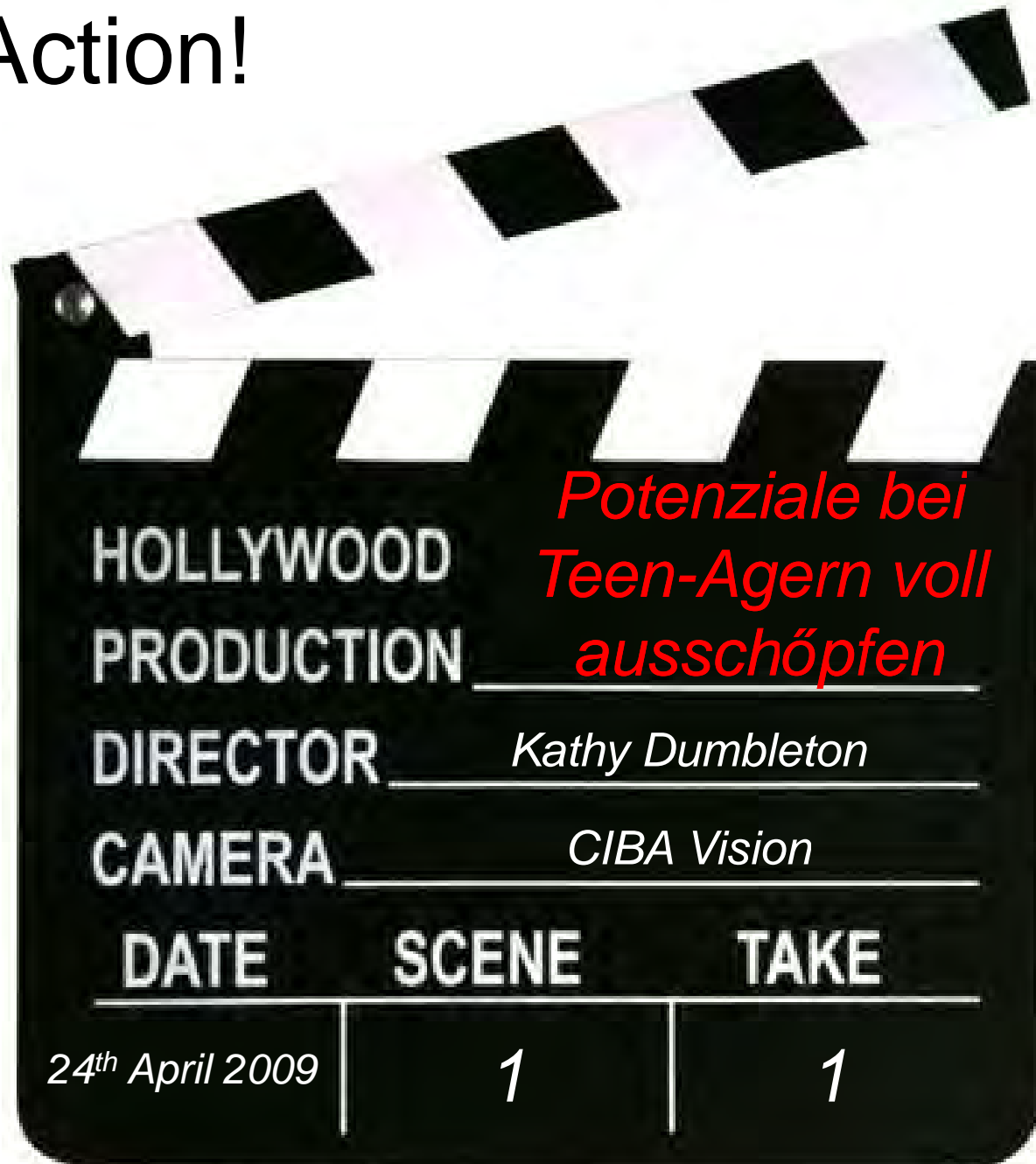


And Action!
Potenziale bei Teen-
Agern voll ausschöpfen

Kathy Dumbleton

*Centre for Contact Lens Research
University of Waterloo, Waterloo, ON
Canada*

And Action!





Jeder zweite Teenager
verliebt sich in Kontaktlinsen.



Introduction

- Population of Germany (2008) \approx 82 million
 - \approx 4 million age 10-14
 - \approx 4.5 million age 15-19
 - How many require an Rx?
- United Kingdom
 - 17% children aged 5-15 require vision correction
 - 29% 16-19 year olds require vision correction
- *\approx 25% of German teenagers require Rx?*
 - *Potential for up to 2 million teenagers in CLs*





Introduction / Outline

Very high potential growth market

BUT

Some ECPs reluctant to fit 'tweens and teens

- Teenage characteristics
- Contact lens options for teenagers
 - Advantages and disadvantages
- Study results



The myths...

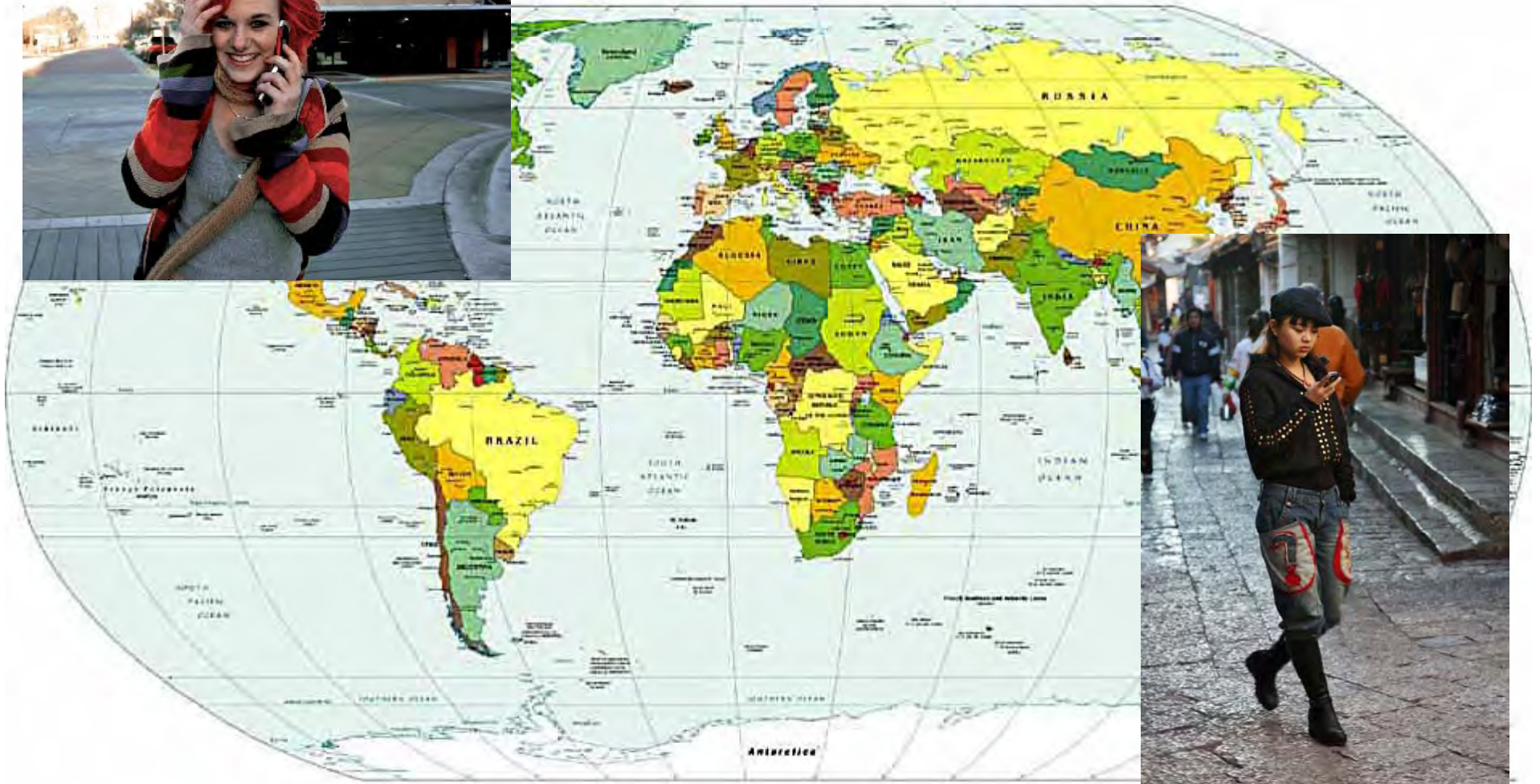
- A stable Rx is required
- It takes too much time
- The costs are too high for teenagers
- Teenagers are more likely to be non-compliant

ALL myths



Teenage Characteristics

Pc





Teenage Characteristics

- Appearance is very important
 - Desire to overcome self-consciousness
 - Desire to improve self-esteem
- Purchasing driven by:
 - Brand names
 - Celebrities
 - Peer influences
- Age does not correlate with responsibility



Advantages of CLs for teenagers

- More practical for sporting activities
- More practical for artistic performances
 - Theatre
 - Musicals
 - Orchestra
 - Dance
- Ability to wear non-Rx sunglasses
- Greater field of vision





What is different about teenagers?

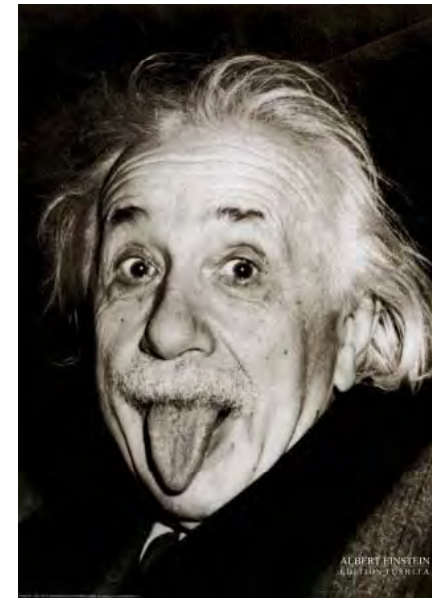


Number of years in CLs

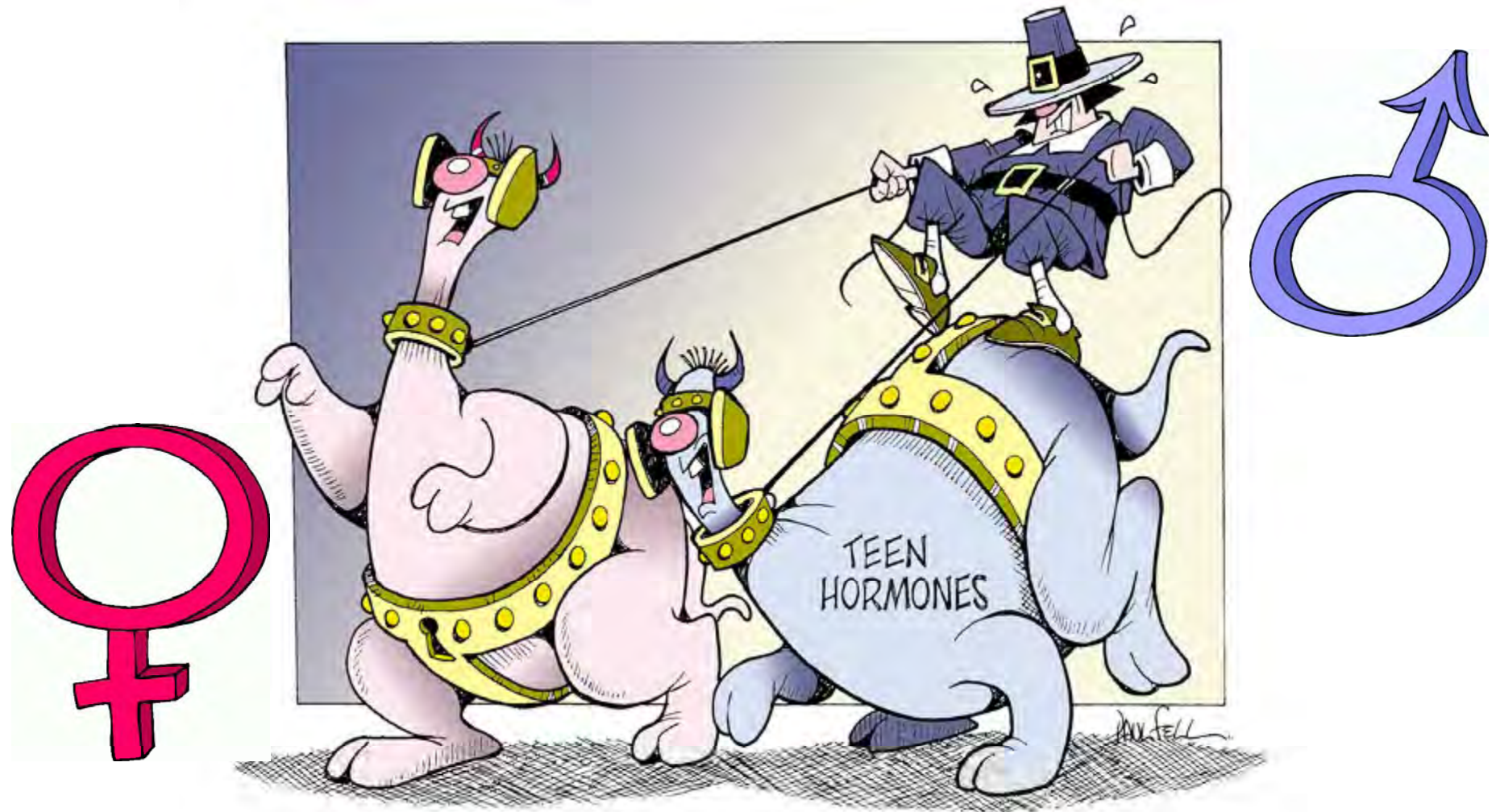
Teen-Ager



Best-Ager



Hormones!





Health and medications

- Type 1 (juvenile) diabetes
- Seasonal allergies
- Skin conditions (Acutane)
- Birth control pill



Make-up





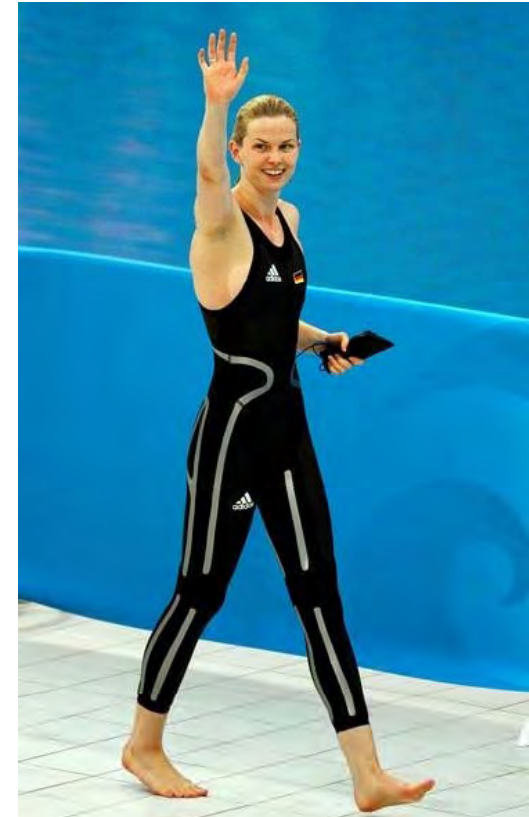
Activities: Sports





Activities: Swimming

- Swimming
 - Goggles for “occasional” swimmers
 - Daily disposables?
 - Greater risk of MK?



Britta Steffen

Edwards *et al*, ARVO 2005
Morgan *et al*, 2005



Activities: Travel

- Volunteering, “Gap” years etc.
- Warm climates
 - Hygiene issues
 - MK caused by environmental organisms

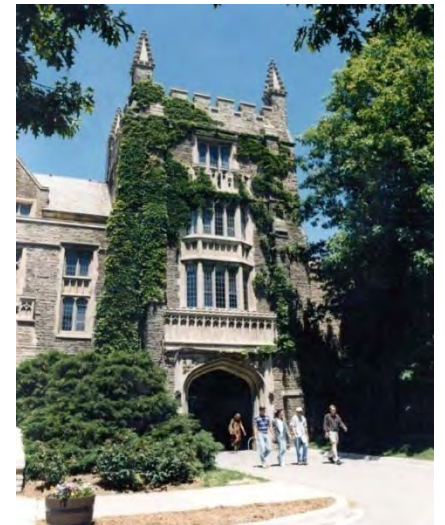


Talk to your patients!



University and College

- First time living away from home
- Change in schedule
- Shared bedrooms and bathrooms
- Partying, drinking, unplanned overnight stays with friends
- Stress and lack of sleep





Contact lens options for teenagers

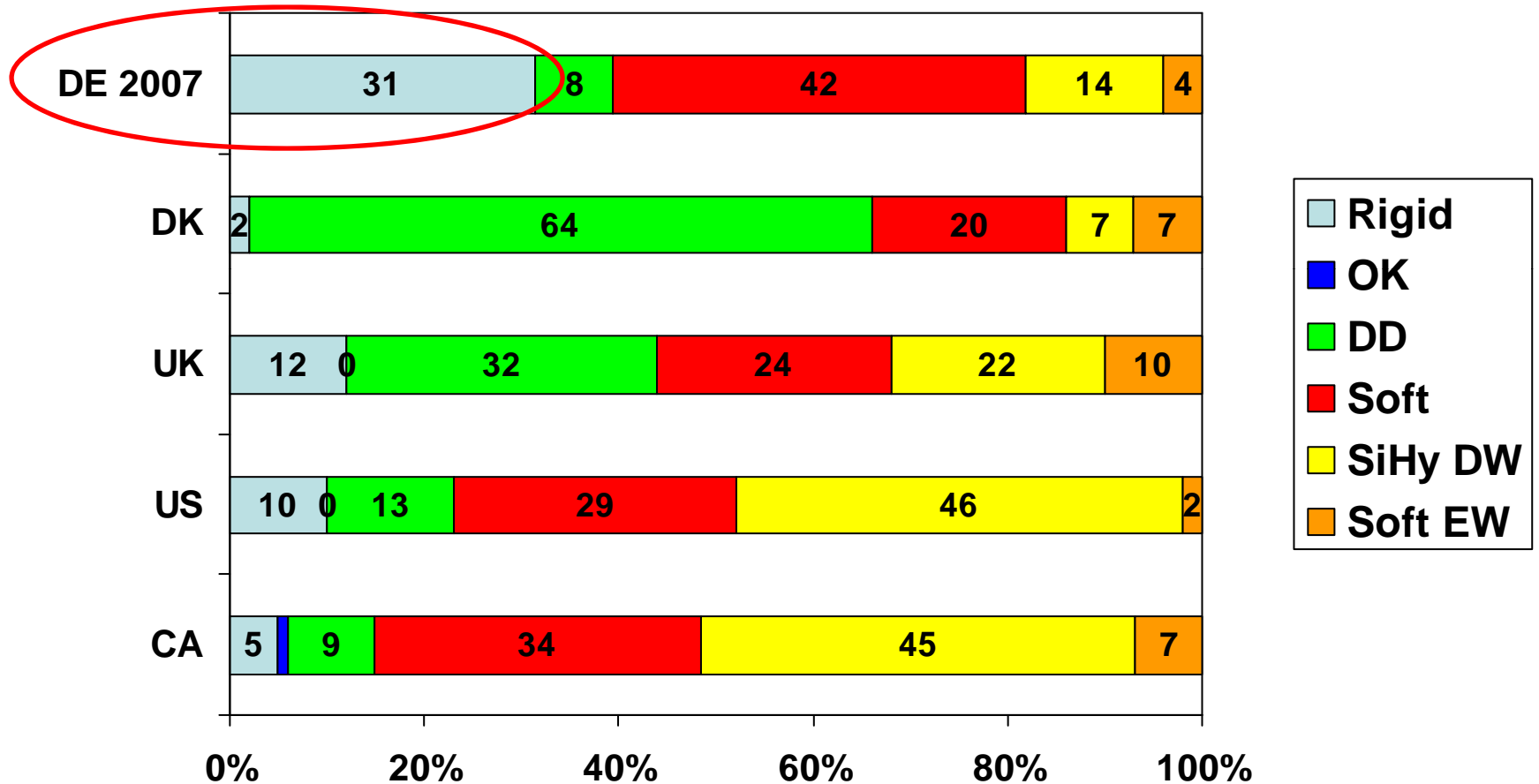


Contact Lens Options

- Rigid gas permeable (RGP)
- (Soft / Hydrogel)
- Daily disposable hydrogel (DD)
- Silicone hydrogel (SiHy)
- Cosmetic and opaque tints
- Lenses for corneal refractive therapy (CRT)



Worldwide Fitting Data New Fits 2007 /2008



Morgan et al, Contact Lens Spectrum. January 2008, February 2009



RGP: Advantages

- Low annual cost
- No limitation in parameter availability
- Excellent optical quality and visual acuity (astigmatism)
- Ease of handling and lens care
- Greater durability
- High Dk RGP lenses offer benefits for corneal health
- Decreased risk of infection
- Potential for control of myopic progression
- RGP lenses not available on internet





RGP: Disadvantages

- Greater complexity in lens fitting?
- Initial discomfort and adaptation required
 - explain what to expect
 - topical anesthetic (in lens)
- Increased potential for lens loss
 - order spare pair when fit confirmed





Soft / Hydrogel: Advantages

- Immediately comfortable
- No adaptation period required
- Lens dislocation uncommon
- Many parameters available
- Lower costs?





Soft / Hydrogel: Disadvantages

- Hypoxic complications
 - Neovascularization
 - Striae
 - Microcysts
 - Staining
 - Hyperemia
 - Endothelial changes
 - Myopic shift
 - etc.

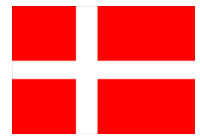


Daily Disposables...





Use of Daily Disposables



Denmark¹

64% DD



United Kingdom¹

32% DD



United States¹

13% DD



Canada¹

9% DD



Germany²

8% DD

Morgan, et al. *CL Spectrum* February 2009¹, January 2008²



DD: Advantages

- No lens care required
- Lens loss not expensive or inconvenient
- Intermittent use (recreation, social)
- Accidental overnight lens wear unlikely
- Toric and spherical Rx available
- Cosmetic tints, changes in appearance
- Good for ocular allergies



DD: Disadvantages

- Does not teach responsibility
- Negative perception of “disposability”
- Environmental concerns
- Perceived higher cost than weekly or monthly replacement lenses
- High Dk/t DD lenses not available worldwide?



Silicone hydrogel DDs

Contact Lens
SPECTRUM

HOME THIS MONTH ARCHIVE SUPPLEMENTS BREAKING

Issue: February 2009
contact lens materials

Don't Compromise With Your Teenagers

BY KATHY DUMBLETON, MSC, MCOPTOM, FAAO, & LYNDON JONES, PHD, FCOPTOM, FAAO

Choosing an optimal contact lens for teenagers can be somewhat of a dilemma. Daily disposable (DD) lenses may appear to be the best choice because this modality offers increased convenience, fewer overall complications, fewer unscheduled visits and superior patient satisfaction. However, DD lenses have (until recently) been manufactured only in low-Dk/t traditional hydrogel materials, which may cause physiological compromise when worn for extended periods of time.

Younger wearers typically are less compliant than more "mature" wearers and, when wearing DDs, severe complications can still result. Many teenagers admit to frequently "napping" while wearing their lenses. A recent study has shown that even dozing for a period of one hour results in significantly greater corneal swelling while wearing traditional hydrogel lenses compared with silicone hydrogel lenses.

A New Option

Given the wearing habits of teenagers, a preferable lens





Silicone Hydrogels

- Acuvue Advance
- Acuvue Oasys
- Air Optix
- Air Optix Night & Day
- Biofinity
- Premio
- PureVision





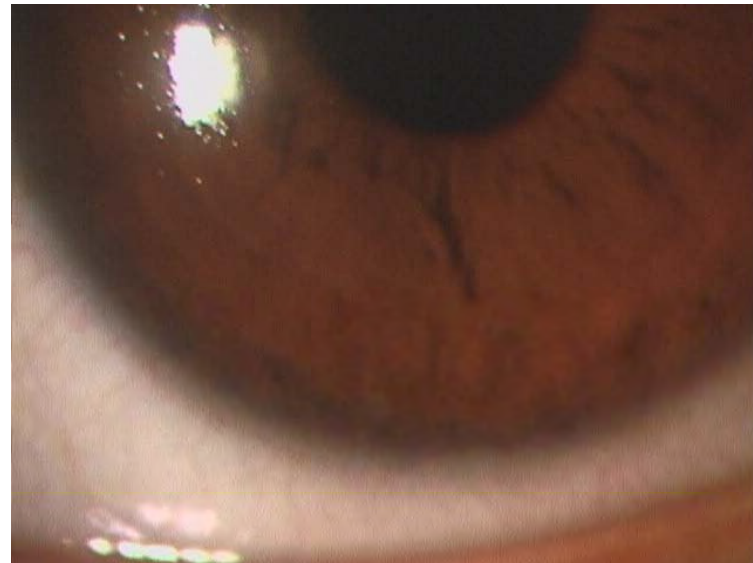
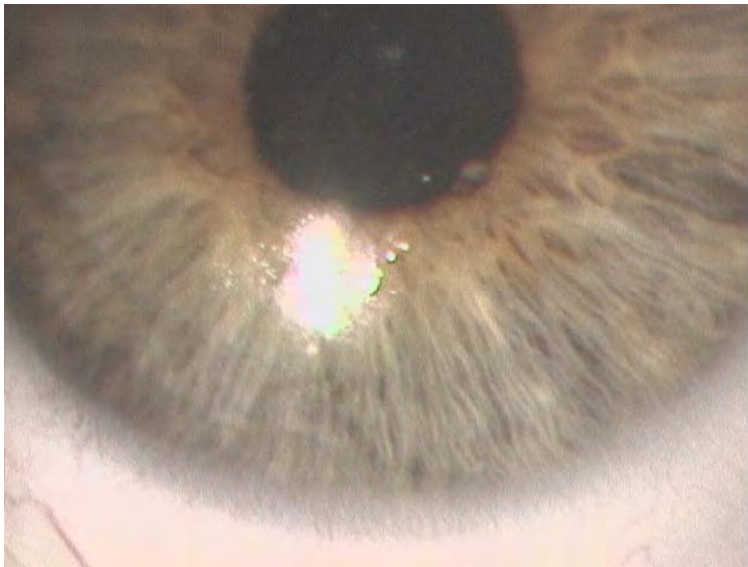
SiHy: Advantages

- High Dk materials
 - long term benefits for corneal health
 - DW or overnight wear basis
 - safer for napping?
- Comfort equivalent to soft contact lenses
- Ease of handling
- Durability
- Available in wide range of prescriptions
and toric designs



SiHy: Disadvantages

- Greater cost?
- Non-compliant wearers may be at greater risk of infection with overnight wear
- Surface deposits





Cosmetic Lenses











Google it!


Web Images Maps News Video Gmail more ▾

Google Video Search Videos Search the Web [Advanced Video Search](#) [Preferences](#) [Moderate SafeSearch is on](#)

Search: all videos videos playable on Google

From: All dates Duration: All Results 1 - 10 of about 494 for colour

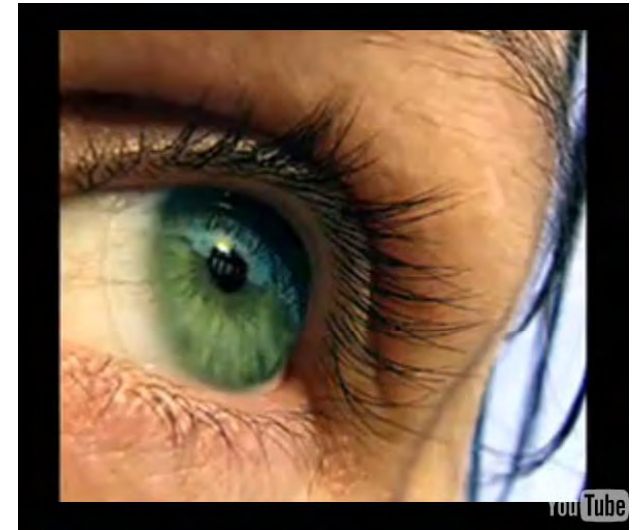
-  **Colored Contacts**
02:42 - 1 year ago - ★★★★★ - youtube.com
Just a little review I did on colored contacts when I was ...
-  **Beautiful Natural Color Contact Lenses Review**
01:04 - 3 months ago - ★★★★★ - youtube.com
right color contact lenses for you,tip for contact lenses ...
-  **Crazy Color Contact Lenses**
01:24 - 5 months ago - ★★★★★ - video.google.com
others people (Crazy Color Contact Lenses) VISIT THIS SITE ...
-  **Natural Color Contact Lenses**
00:29 - 3 months ago - ★★★★★ - youtube.com
how to choose right color contact lenses for you,tip for ...
-  **Best Sample Color Contact Lenses**
02:19 - 26 days ago - ★★★★★ - uk.video.yahoo.com
people (Best Sample Color Contact Lenses) VISIT THIS SITE ...
-  **Beautiful Color Contact Lenses**
01:31 - 13 days ago - ★★★★★ - espanol.video.yahoo.com
from others people (Beautiful Color Contact Lenses) More ...

A large video player window is open, displaying a close-up of a woman's face. She has long, dark hair and is wearing blue contact lenses. The video player interface includes a play button, a progress bar showing 0:11 / 2:41, and a volume icon. The YouTube logo is visible in the bottom right corner of the video frame.



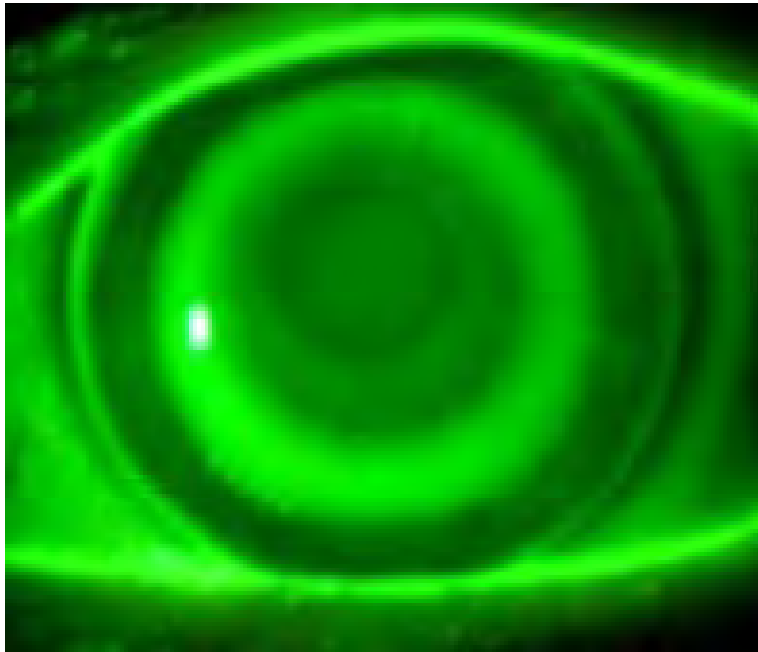
Disadvantages?

- Greater cost
- Limited parameter availability
- Considered as commodity
- Readily available (internet)
- No fitting or follow-up for plano corrections
- Greater risk of complications
- Propensity for “sharing” lenses





Corneal Refractive Therapy





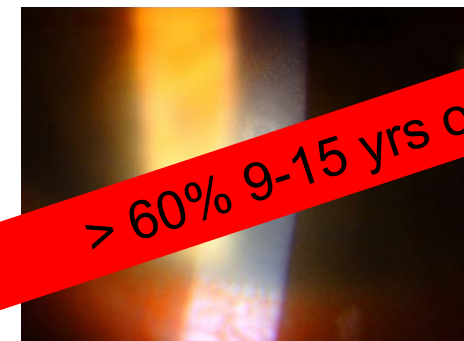
CRT: Advantages

- Success rates higher with lower myopia
 - 'tweens and teens
- Lenses worn overnight
 - decreased lens awareness
- Lens loss unlikely
- Compliance with cleaning
 - better in mornings?



CRT: Disadvantages

- Greater cost than other lens types
- VA may not be constant throughout the day
- Risk of infection with overnight wear if abrasions and/or poor compliance



> 60% 9-15 yrs old

Watt K, Swarbrick HA. Microbial keratitis in overnight orthokeratology: review of the first 50 cases. *Eye Contact Lens*. 2005 Sep;31(5):201-8.



Study results



The Clip Study

- Comparing contact lens fitting and follow up in 'tweens and teens
 - Acuvue Advance
 - Acuvue Advance for Astigmatism (17.2%)

TABLE 6.
Mean \pm standard deviation time (minutes) for each protocol by age group

	Children	Teens	p
Fitting	43.3 \pm 9.3	41.3 \pm 9.0	0.17
I/R training	41.9 \pm 32.0	30.3 \pm 20.2	0.01
1-week follow-up	14.3 \pm 4.7	13.6 \pm 4.9	0.35
1-month follow-up	14.1 \pm 9.5	11.6 \pm 3.1	0.04
3-month follow-up	11.4 \pm 3.0	10.6 \pm 2.4	0.10
Total time	110.6 \pm 39.2	95.3 \pm 25.2	0.003

I/R, insertion and removal.

Significance differences between children and teens are adjusted for multiple comparisons (Bonferroni adjustment, $p = 0.008$).

Walline et al.
Optom Vis Sci 2007



CL wear and self-perception

- Multicentre study in USA
 - 8 to 11 year olds
 - Spectacles (n = 237) or CLs (n = 247)
 - Follow up for 3 years
- Significantly higher ratings
 - Physical appearance
 - Athletic competence
 - Social acceptance

Walline et al.
Optom Vis Sci 2009



Discontinuation of CLs

Outcome	Satisfied CL wearers (n = 225)	Dissatisfied CL wearers (n = 119)	Discontinued CL wearers (n = 109)
Sex: Female	66%	74%	51%
Male	34%	26%	49%
Age started CL wear	16.5 ± 6.2	18.3 ± 8.6	21.8 ± 9.2
Current age	29.3 ± 9.5	30.6 ± 10.5	39.5 ± 11.3
Lenses: Soft	79%	80%	62%
RGP/hard	5%	2%	15%
Both	16%	18%	23%
WT: ≥ 7 days / week	74%	51%	N/A
WT: ≥ 12 hours / day	82%	61%	N/A

Richdale et al (2007). Cornea 26(2) 168 - 174



General Tips for Success

- Assess motivation of patient, not parent
- Assess Rx requirements etc. for lens types
- Consider legal responsibilities (< 18 years),
 - obtain consent from parent / guardian
- Develop a “contact lens pledge”
 - agreement between teenager and parents to encourage compliance



Summary

- Teenagers need contact lenses
- Present the options
- Be proactive ...they are!
- Trial fit all prospective wearers
- Enjoy their successes

Jeder zweite Teenager
verliebt sich in Kontaktlinsen.



Danke

Every second a teenager falls in love with contact lenses