Continuing Education Course Approval Checklist

Title: Alejandra Reyes, OD CE Seminar – Psychosocial Impact of Strabismus and Amblyopia

Provider Name: Kaiser Permanente c/o Dr. Joan Mah, OD

☒ Completed Application
  ☒ Open to all optometrists? Yes ☐ No
  ☒ Maintain record agreement? Yes ☐ No

☒ Detailed Course Description
  ☒ PowerPoint and/or other presentation materials
  ☒ Advertising (optional)
  ☒ CV for EACH course instructor
  ☒ License Verification for each course instructor
  ☒ Disciplinary History? ☐ Yes ☒ No
CONTINUING EDUCATION COURSE APPROVAL
APPLICATION

$50 Mandatory Fee

Pursuant to California Code of Regulations (CCR) § 1536, the Board will approve continuing education (CE) courses after receiving the applicable fee, the requested information below and it has been determined that the course meets criteria specified in CCR § 1536(g).

In addition to the information requested below, please attach a copy of the course schedule, a detailed course outline and presentation materials (e.g., PowerPoint presentation). Applications must be submitted 45 days prior to the course presentation date.

Please type or print clearly.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Course Presentation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alejandro Reyes OD CE Seminar Psychosocial Impact of Strophanthin and Amblyopia</td>
<td>09/10/2016</td>
</tr>
</tbody>
</table>

Provider Name
Joan Mah Tovio

Provider Mailing Address
Street 7200 Redwood Blvd
City Novato
State CA
Zip 94945

Provider Email Address joan.mah@kp.org

Will the proposed course be open to all California licensed optometrists?
☑ YES ☐ NO

Do you agree to maintain and furnish to the Board and/or attending licensee such records of course content and attendance as the Board requires, for a period of at least three years from the date of course presentation?
☑ YES ☐ NO

Course Instructor Information

Instructor Name
Daniel Greeninger A

License Number A109166 License Type Medical Board of Ca.

Phone Number (925) 813-3345 Email Address Daniel.A.Greeninger@kp.org

I declare under penalty of perjury under the laws of the State of California that all the information submitted on this form and on any accompanying attachments submitted is true and correct.

Joan Mah 7/10/16

Signature of Course Provider Date

Form CE-01, Rev. 5/16
Title: Psychosocial Impact of Strabismus and Amblyopia

Abstract

Strabismus is a common visual disorder affecting up to 4% of all adults and children. Physiological benefits of strabismus treatment, including restoration of binocular vision and visual field, elimination of diplopia, and resolution of asthenopia, have been well established for many years. More recently, the significant psychosocial impacts of living with strabismus and amblyopia have been investigated, and the corresponding psychosocial benefits of strabismus treatment has been demonstrated in both children and adults. This presentation will review the current understanding of the psychosocial impact of strabismus and amblyopia on children and adults, demonstrate the prevalence of negative stereotypes of strabismus and amblyopia in popular culture, and discuss the psychosocial benefit that can arise from treatment of these vision disorders.

References:


Daniel Greninger, MD
Pediatric Ophthalmology and Strabismus
Kaiser Permanente/Diablo Service Area
Antioch, CA
Psychosocial Impact of Strabismus and Amblyopia

Daniel Greninger, MD

1) Strabismus prevalence, functional problems, and types
   -Photo demonstrations

2) Does strabismus have a negative impact on a child’s psychosocial health?
   -Definition
   -Study: Schoolteachers Bias against Strabismus
   -Study: Children and Strabismic Dolls
   -Studies: Sharing a toy, inviting to birthday parties, sitting in class

3) Where do children get these negative feelings?
   -Data on associations with other medical conditions
   -Demonstrations from children’s movies
   -Language we use to describe

4) Mental health problems in children with strabismus
   -Study: social phobia
   -Study: depression and alcohol use
   -Study: Mental Illness

5) Impact extends into adulthood in almost all realms of personal and professional life
   -Study: ability to obtain employment
   -Study: rating of military photographs
   -Study: ability to find a partner
   -Video: Youtube journalism project

6) What can be done: strabismus surgery
   -information about surgery
   -Video: Surgery details
   -Data on positive impact of surgery on quality of life

7) Amblyopia prevalence, functional problems, types
   -Video: amblyopia description
- Types of treatment: patching, glasses, eyedrops
- Effect of treatment on self esteem
- New treatments on horizon: dichoptic games and special glasses
Psychosocial Impact of Strabismus and Amblyopia

Daniel Greninger, MD
Pediatric Ophthalmology and Strabismus
Kaiser Permanente, Antioch
I have no financial conflicts of interest
Strabismus

• Abnormal alignment of one or both eyes preventing parallel vision
• Affects 3% of the population
• Functional problems: binocularity (3D vision), amblyopia, peripheral vision, diplopia
• Most common type involves horizontal misalignment of the eyes
  – Esotropia (in-turning)
  – Exotropia (out-drifting)
Orthotropia
(normal)
Esotropia
Exotropia
Does strabismus have a negative impact on a child’s psychosocial health?
Psychosocial Health

• The roots of ‘psychosocial health’ lie in the World Health Organization’s (WHO) definition of “health”

• A state of complete physical, mental, and social well-being, and not merely the absence of disease and infirmity
Does strabismus have a negative impact on a child’s psychosocial health?

Do you have a negative attitude toward the children with strabismus?
Table 1. The personal characteristics rated on a scale of 1–5. The scale was designed so that the higher score represented the more positive aspect of each characteristic.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Scale of perception</th>
</tr>
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<tbody>
<tr>
<td>Intelligence</td>
<td>1 = not intelligent, 5 = very intelligent</td>
</tr>
<tr>
<td>Health</td>
<td>1 = not healthy, 5 = very healthy</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>1 = not trustworthy, 5 = very trustworthy</td>
</tr>
<tr>
<td>Hard working</td>
<td>1 = not hard working, 5 = very hard working</td>
</tr>
<tr>
<td>Happiness</td>
<td>1 = not happy, 5 = very happy</td>
</tr>
<tr>
<td>Cuteness</td>
<td>1 = not cute, 5 = very cute</td>
</tr>
<tr>
<td>Hesitancy</td>
<td>1 = very hesitant, 5 = not hesitant</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>1 = very aggressive, 5 = not aggressive</td>
</tr>
<tr>
<td>Activeness</td>
<td>1 = not active, 5 = very active</td>
</tr>
<tr>
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</table>
• Physical appearance, including facial features, has significant impact on social interactions
• How we are viewed and treated by others is a major determinant of our perceived quality of life
• The bias created by strabismus may impact a child’s education and socialization
• Do children have negative feelings about strabismus?

• At what age do these feelings begin?
- 34 subjects
- age 3-7y/o
- observed playing with dolls
- asked questions about preference and attitude
5 ¾ yrs old
• Studies examining other physical characteristics, such as obesity and skin color, have shown that awareness and preferences for these physical traits appear at an early age.

• This awareness starts as early as 3 years of age and may be uniformly present by age 6
• A negative attitude toward strabismus appears to emerge at approximately 5¾ years of age.
• Awareness of a difference between the eyes of strabismic and normally aligned dolls begins at approximately 4½ years of age.
• The biopsychosocial determinants of dislike and hostility toward misaligned eyes are apparently acquired, learned responses.
Strabismus-related prejudice in 5—6-year-old children

H Lukman, J E Kiat, A Ganesan, W L Chua, K L Khor, Y F Choong

Strabismus and discrimination in children: are children with strabismus invited to fewer birthday parties?

Stefania Margherita Mojon-Azzi, Andrea Kunz, Daniel Stéphane Mojon

Negative social reaction to strabismus in school children ages 8-12 years

Hera Lukman, PhD, John E. Kiat, BPsysch(Hons), Asha Ganesan, BPsysch(Hons), Wei Ling Chua, BA(Hons), Kheng Leik Khor, Ed M, and Yee Fong Choong, FRCOphth
Where do children develop negative feelings towards those with strabismus?
Where do children develop negative feelings towards those with strabismus?

Strabismus more common in patients with neurologic abnormalities, prematurity, and genetic disease
Where do children develop negative feelings towards those with strabismus?

Strab more common in patients with neurologic abnormalities, prematurity, and genetic disease

Only 1 in 5 children with strabismus have a causative medical condition
Where do children develop negative feelings towards those with strabismus?
Ed is apparently the “idiot” of the trio. His distinguishing features are two round cuts on each ear, he is constantly grinning, his tongue lolls from his mouth, and his eyes rarely seem to focus on anything. For whatever reason, he chooses not to speak.
Ed is apparently the “idiot” of the trio. His distinguishing features are two round cuts on each ear, he is constantly grinning, his tongue lolls from his mouth, and his eyes rarely seem to focus on anything. For whatever reason, he chooses not to speak.
The highly anticipated “Finding Dory” rocked the box office with its opening weekend, pulling in an estimated $136 million. During the adventure to find Dory’s parents, Nemo, Marlin and Dory bump into a host of characters, almost all of whom have some sort of disability. Hank the octopus only has seven tentacles, Destiny the whale shark has vision problems and Bailey the beluga whale has sonar issues. All of these disabled characters learn to live with, overcome or even use their disability to their advantage through the course of the film.

However, one character in particular doesn’t get the hero treatment
Gerald the sea lion is quite obviously a depiction of diminished cognitive function. He doesn’t speak, and his vacant expression and dopey smile are pretty standards go-to’s for mental vacancy in cartoons. Gerald doesn’t move or think like the two other sea lions in the film, who are depicted as almost bullies as they trick and mock Gerald for his disability.
Would you sit next to this person?

- NO WAY!
- MAYBE NOT.
- MAYBE I WILL.
- YES, I WILL!
Where do children develop negative feelings towards those with strabismus?
Where do children develop negative feelings towards those with strabismus?

**Cross Eye (esotropia)**
- drunk

**Wall Eye (exotropia)**
- agitated staring
- fear
- frenzy
- rage

**Lazy Eye (strabismus)**
- unwilling to work or use energy
- idle
- indolent
- slothful
- shiftless
- sluggish
- lethargic
**Chief Complaint**

<table>
<thead>
<tr>
<th>Chief Complaint</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROSS-EYE</td>
<td></td>
</tr>
<tr>
<td>LAZY EYE</td>
<td></td>
</tr>
</tbody>
</table>
• Strabismus has a significant negative impact on quality-of-life in children
• Strabismus has a significant negative impact on quality-of-life in children.

• This negative impact on quality-of-life has been shown in studies of children across the world.
• Strabismus has a significant negative impact on quality-of-life in children

• This negative impact on quality-of-life has been shown in studies of children across the world.

• Childhood strabismus has been associated with significant mental health problems
Social phobia and other psychiatric problems in children with strabismus
Social phobia and other psychiatric problems in children with strabismus

- Between 20 and 50% of adolescents with strabismus have social phobia

- Extreme fear of being scrutinized and judged by others in social or performance situations

- Can disrupt daily life

- Recognize that the fear is excessive and unreasonable

- Feel powerless against their anxiety

- Terrified they will humiliate or embarrass themselves
Social phobia and other psychiatric problems in children with strabismus

Alcohol Use and Positive Screening Results for Depression and Anxiety Are Highly Prevalent Among Chinese Children With Strabismus
Social phobia and other psychiatric problems in children with strabismus

Alcohol Use and Positive Screening Results for Depression and Anxiety Are Highly Prevalent Among Chinese Children With Strabismus

ARTICLE
Mental Illness in Young Adults Who Had Strabismus as Children
Brian G. Mohney, MD*, Jeff A. McKenzie, BA*, Jason A. Capo, MD*, Kevin J. Nusz, MD*, David Mirazok, MD*, Nancy N. Diehl, BS*

Childhood exotropia = 3x more likely to develop a psychiatric disorder than controls
• The impact of strabismus extends into adulthood in almost all realms of life
Impact of Large Angle Horizontal Strabismus on Ability to Obtain Employment
Effect of Adult Strabismus on Ratings of Official U.S. Army Photographs

Mitchell J. Goff, MD, Abraham W. Suhr, MD, John A. Ward, PhD, Janis K. Croley, MD, and Mary A. O’Hara, MD
Opinions of dating agents about strabismic subjects’ ability to find a partner
• https://www.youtube.com/watch?v=yl1BcX9tp9A
• Can anything be done?
• Can anything be done?
• Strabismus surgery!
  – Outpatient procedure
  – Appx 1 hour
• Is strabismus surgery successful?
  – 80% success rate: within 5 degrees of “parallel”
  – Higher when quality-of-life is considered

• Is strabismus surgery dangerous?
  – Vision complications in 1/10,000 cases
• Is it covered by medical insurance? (yes)
  – Cosmetic surgery is usually performed to enhance the aesthetic qualities of one’s appearance
  – Reconstructive surgery is performed to improve the body’s function, shape, and overall health, to remedy disease, and to treat congenital or acquired deformities
• How do you do the surgery?
• https://www.youtube.com/watch?v=k8Cu-ER-QIk
Does strabismus surgery have a positive impact on psychosocial health of children?

Social and Emotional Impact of Strabismus Surgery on Quality of Life in Children

The psychosocial aspects of strabismus in teenagers and adults and the impact of surgical correction

Impact of strabismus surgery on health-related quality of life in adults
TABLE 3. Effect of surgery on quality of life dimensions

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Preop–Postop</th>
<th>( P )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional limitations</td>
<td>0.22</td>
<td>0.01</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.14</td>
<td>0.01</td>
</tr>
<tr>
<td>Depression</td>
<td>0.19</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Positive well-being</td>
<td>0.01</td>
<td>0.85</td>
</tr>
<tr>
<td>Social relations</td>
<td>0.20</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>General health perceptions</td>
<td>0.23</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>- Current health</td>
<td>0.18</td>
<td>0.01</td>
</tr>
<tr>
<td>- Resistance/susceptibility</td>
<td>0.35</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>- Prior health</td>
<td>0.18</td>
<td>0.11</td>
</tr>
<tr>
<td>Satisfaction with development</td>
<td>0.22</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Eye alignment concerns</td>
<td>0.70</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Parent–child closeness</td>
<td>0.04</td>
<td>0.06</td>
</tr>
</tbody>
</table>

*Preop–Postop:* difference between pre- and postoperative dimension scores. A positive value represents an improvement. *P* values are derived from two-tailed, paired Student’s *t* test.
• Strabismus (eye misalignment) is a common eye condition affecting approximately 3% of all children and adults worldwide
• Strabismus (eye misalignment) is a common eye condition affecting approximately 3% of all children and adults worldwide

• Although strabismus can be seen in many patients with neurologic or developmental disability, history of prematurity, and genetic diseases, the large majority of patients with strabismus have no causative medical condition
Strabismus (eye misalignment) is a common eye condition affecting approximately 3% of all children and adults worldwide.

Although strabismus can be seen in many patients with neurologic or developmental disability, history of prematurity, and genetic diseases, the large majority of patients with strabismus have no causative medical condition.

Despite this, there is a strong negative societal bias against people with strabismus that forms around the age of 5 years old and persists throughout life.
Summary

• Historically the physiologic outcomes of strabismus treatment were considered of utmost importance
Summary

• Historically the physiologic outcomes of strabismus treatment were considered of utmost importance.

• Multiple studies suggest that correction of strabismus may reverse negative social implications and positively alter the perceived characteristics of children and adults.
Summary

• Historically the physiologic outcomes of strabismus treatment were considered of utmost importance.

• Multiple studies suggest that correction of strabismus may reverse negative social implications and positively alter the perceived characteristics of children and adults.

• The physician who is caring for a child, adolescent, or adult with strabismus should be aware of the social, psychological, and professional impact of this condition.
Psychosocial Impact of Strabismus and Amblyopia

Daniel Greninger, MD
Pediatric Ophthalmology and Strabismus
Kaiser Permanente, Antioch
Amblyopia

• Reduced visual function that arises from an insult to the developing visual system early in life

• Most commonly from refractive error (need for glasses) in one eye, or misaligned eyes

• Affects 3% of the population
• https://www.youtube.com/watch?v=0kHCHvFhzWc
• Treatment for amblyopia usually consists of patching the better-seeing eye to allow the poorer-seeing eye to “catch up”
• Eyedrops can also be used to dilate the pupil and blur the vision in the better seeing eye
Does amblyopia have a negative impact on a child’s psychosocial health?
Does amblyopia have a negative impact on a child’s psychosocial health?
Effect of Amblyopia on Self-Esteem in Children

Ann L. Webber*, Joanne M. Wood¹, Glen A. Gole³, and Brian Brown⁵

- 50 nine year old children (with history of treatment for amblyopia) and age matched controls
- Glasses are not associated with lower self-esteem in children
- Patching to treat amblyopia was associated with lower social acceptance
Do glasses have a negative psychosocial impact on children?

- Some studies show higher percent bullied
- Studies of self-esteem find that scores are not associated with glasses
Psychosocial impact of amblyopia and its treatment: a multidisciplinary study

• To explore the meaning of amblyopia and seek correlations between the condition, treatment, and psychopathology
• Children with amblyopia and their parents underwent in-depth interviews
• Dealing with the stigma and the perceptions of peers were of central significance to the experience of amblyopia therapy
Psychosocial impact of amblyopia and its treatment: a multidisciplinary study

- It is the *treatment* of amblyopia, rather than the amblyopia itself, which is disabling for some children.

- The visible nature of treatment, as opposed to the hidden nature of the condition, produces this distinction.
Psychosocial impact of amblyopia and its treatment: a multidisciplinary study

• Given that amblyopia can affect children’s psychosocial well-being, health outcomes should integrate both vision and psychosocial implications of treatment.

• Although treatment should aim to reverse amblyopia and restore visual acuity, efforts to minimize negative psychosocial consequences of treatment should be made.
YOU DID HAVE A "LAZY EYE," DIDN'T YOU?

YES, MY OPHTHALMOLOGIST SAID I HAVE TO WEAR THIS PATCH FOR SIX MONTHS...

BUT JUST THINK...AFTER THAT MY EYE WILL BE ALL RIGHT...HE PUT THE PATCH ON MY GOOD EYE SO THE WEAK ONE WILL WORK HARDER.

HOW DO I LOOK WITH AN EYE PATCH?

YOU LOOK FINE...YOU REALLY DO...

I FEEL LIKE AN AD FOR MEN'S SHIRTS!
How can we minimize the impact of amblyopia treatment?

• Dichoptic iPad games/movies
  – Viewing a separate and independent field in each eye
  – Blurring the view for the better-seeing eye!
How can we minimize the impact of amblyopia treatment?

- https://lazyeyetetris.wordpress.com/
How can we minimize the impact of amblyopia treatment?

- Amblyz LCD glasses
How can we minimize the impact of amblyopia treatment?

• Amblyz LCD glasses
• Electronic shutter controlled by a pre-programmed microchip incorporated into lens fashionable glasses frame
Summary

• Amblyopia is a common eye condition affecting approximately 3% of all children and adults worldwide

• Amblyopia has a negative psychosocial impact on children

• However, this negative impact is associated with the treatment of the condition, not the condition itself
Summary

• Patching to treat amblyopia tends to have a more negative psychosocial impact than glasses or penalization with eyedrop medications

• New technologies may allow us to treat amblyopia with minimal impact on a child’s quality of life
Thank you!
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional limitations</td>
<td>Does this child’s health keep (him or her) from taking part in ordinary play?</td>
</tr>
<tr>
<td>Depression</td>
<td>How much of the time during the past month did this child seem to feel lonely?</td>
</tr>
<tr>
<td>Social relations</td>
<td>During the past 3 months, how well has this child gotten along with other children?</td>
</tr>
<tr>
<td>Resistance/susceptibility</td>
<td>When there is something going around, does this child usually catch it?</td>
</tr>
<tr>
<td>Concern with eye alignment</td>
<td>Does your child’s eye alignment (wandering) bother you?</td>
</tr>
<tr>
<td></td>
<td>Does your child’s eye alignment (wandering) bother [him/her]?</td>
</tr>
<tr>
<td></td>
<td>Does your child mention [his/her] eye alignment to you?</td>
</tr>
<tr>
<td></td>
<td>Do other children tease your child about [his/her] eye alignment?</td>
</tr>
<tr>
<td></td>
<td>Does your child avoid eye contact with you when you talk?</td>
</tr>
<tr>
<td>Parent–child closeness</td>
<td>Do you feel close to your child?</td>
</tr>
<tr>
<td></td>
<td>Does your child feel close to you?</td>
</tr>
</tbody>
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Daniel Greninger, MD

4501 Sand Creek Rd
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Daniel.A.Greninger@kp.org
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POSITION:

Pediatric Ophthalmologist, The Permanente Medical Group, Inc. 2013-Present

FELLOWSHIP:

Casey Eye Institute, Oregon Health and Science University, Portland OR
Pediatric Ophthalmology and Strabismus, July 2012- June 2013

RESIDENCY:

UCSF Medical Center, San Francisco, CA
Ophthalmology, June 2009-June 2012

INTERNSHIP:

Santa Clara Valley Medical Center, San Jose, CA
Transitional Internship, July 2008-June 2009

EDUCATION:

Weill Cornell Medical College, New York, NY
Doctor of Medicine with Honors in Research, 2008

Thayer School of Engineering at Dartmouth, Hanover, NH
Bachelor of Engineering, 2003

Dartmouth College, Hanover, NH
Bachelor of Arts with High Honors, Magna cum laude, 2002
HONORS:

2013: Fellow of the Year, Casey Eye Institute
2012: Langer Award for Academic Achievement, UCSF Department of Ophthalmology
2011: Garcia/Asbury Award for Clinical Research, UCSF Department of Ophthalmology
2008: Alpha Omega Alpha Honor Medical Society
2008: Cudkowicz Memorial Prize in Immunobiology, Weill Cornell Medical College
2002: Tau Beta Pi Engineering Honor Society
2002: Dartmouth Presidential Scholar
1998: Frank H. Buck Scholar

BOOK CHAPTERS:


PEER REVIEWED PUBLICATIONS:


PROFESSIONAL ORGANIZATIONS:

- 2015-Present Member, Alameda-Contra Costa Medical Association
- 2015-Present Member, California Medical Association
- 2015-Present Specialty Fellow, American Academy of Pediatrics
- 2014-Present Diplomate, American Board of Ophthalmology
- 2014-Present Member, California Academy of Eye Physicians & Surgeons
- 2012-Present Candidate-in-training, American Association for Pediatric Ophthalmology and Strabismus
- 2009-Present Frederick C. Cordes Eye Society
- 2009-Present Active Fellow, American Academy of Ophthalmology

LICENSES:

1. Medical Board of California, Physician and Surgeon, 2009-Present. #A109166 (active)
2. Medical Board of Oregon, Physician and Surgeon, 2012-2014 # MD157095 (lapsed)