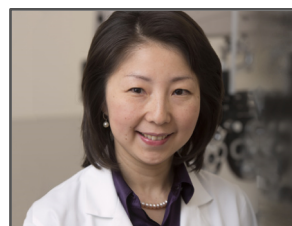




Your Eyes and Chronic Graft-versus-Host Disease

Celebrating a Second Chance at Life
Survivorship Symposium

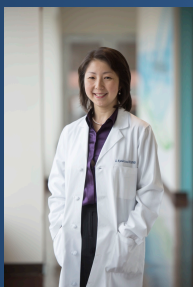
April 30 - May 6, 2022



Zhonghui Katie Luo MD, PhD
Massachusetts Eye and Ear

Ocular Graft versus Host Disease

What to expect and what you can do about it
- from a survivor's perspective



Zhonghui Katie Luo, M.D., Ph.D.
Assistant Professor
Massachusetts Eye and Ear
Harvard Medical School.
April 30, 2022



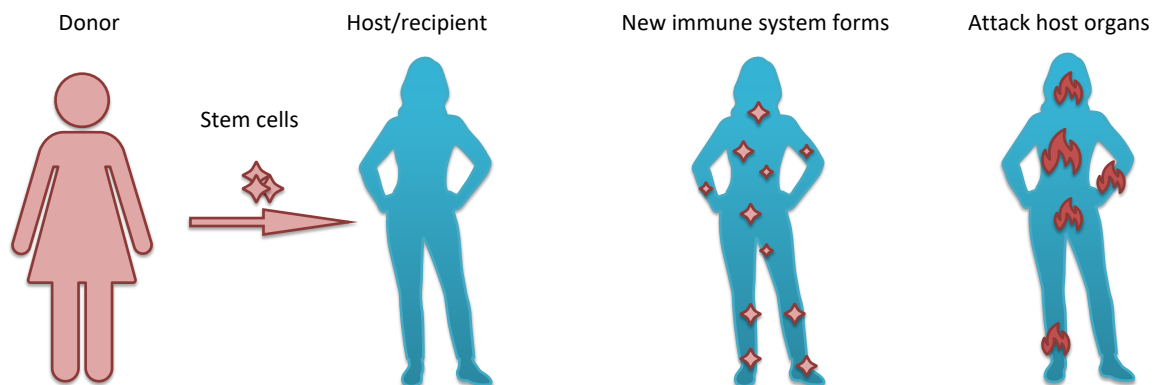
Summary

- What is ocular GvHD
- Clinic findings
- Etiology
- Management

*Warning!
Some patients found some images scary*



Graft vs. Host Disease



Ocular GvHD

- Ocular GvHD affects 40-60% patients after allo-HSCT
- Often under-diagnosed
- It can occur in setting of other chronic GvHD or independently

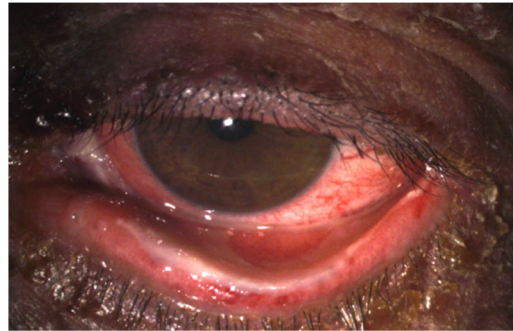


Acute ocular GvHD

Most often occurs within first 3 months after HSCT, but can be much later

- skin rash
- elevated liver enzymes
- digestive system dysfunction

The eyes can be significantly affected



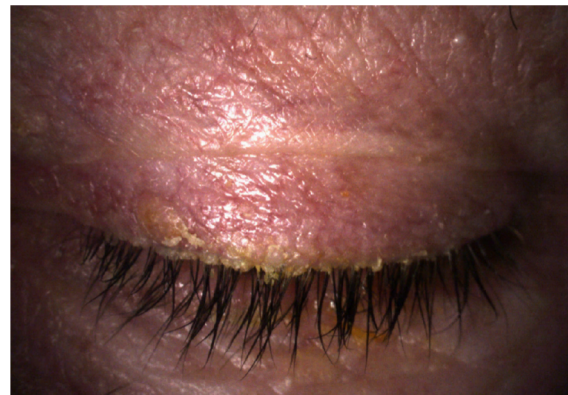
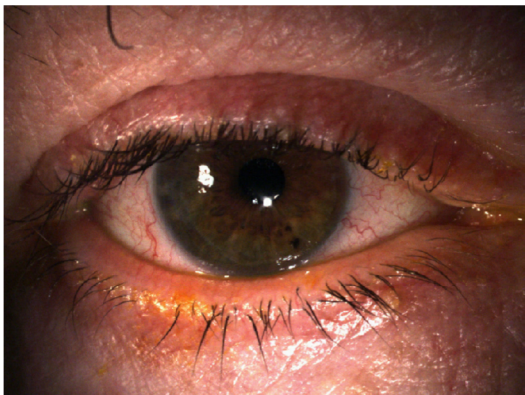
Chronic ocular GvHD

- Most often onset 5m to 24m after HSCT, but can be a few weeks to more than a decade or much later
- Can be isolated, first sign or later sign among other GvHD
- Can have mixed findings with acute ocular GvHD

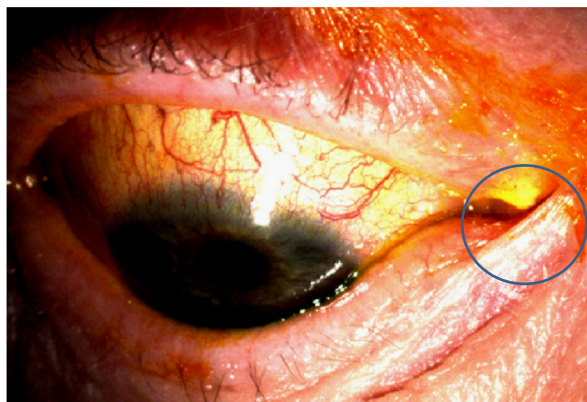
- Squinting all the time
- Sunglasses indoor
- Hands over brows
- Poor functional vision



Blepharitis (red swollen lids, crusting)

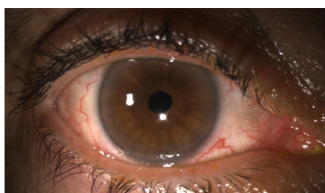


Blepharitis (lid margin ulceration, foamy discharge)

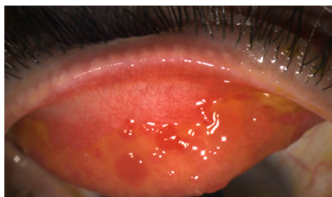


Conjunctival erosions (easily missed!)

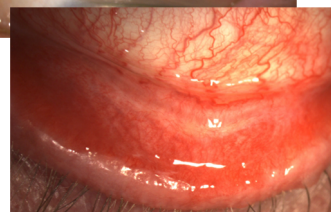
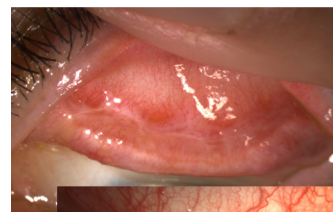
In a quiet looking eye



Erosions can happen

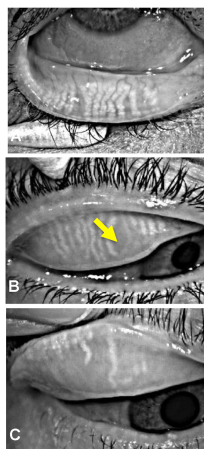


Then turn into scars

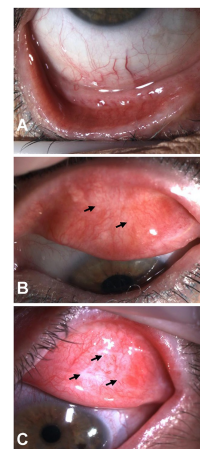


Important glands on the inside of the lids are damaged as well

Destroyed meibomian
glands

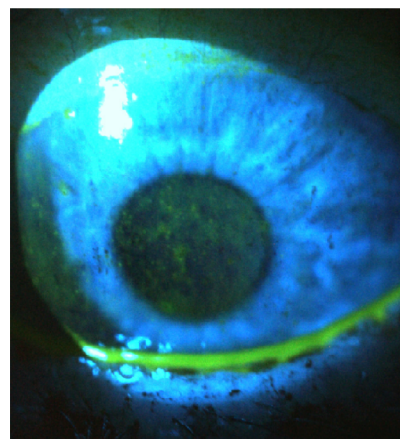
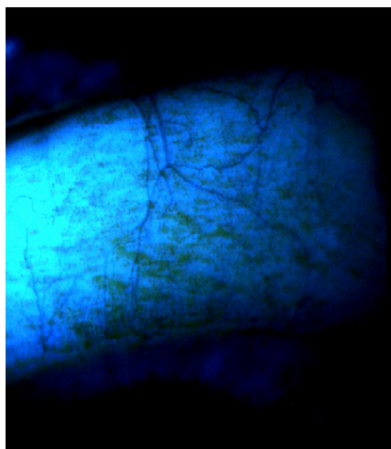


Conjunctival scars
result of inflammation

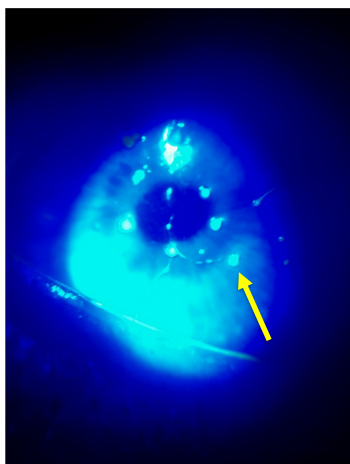


Kusne et al. 2017 Ocular Surface

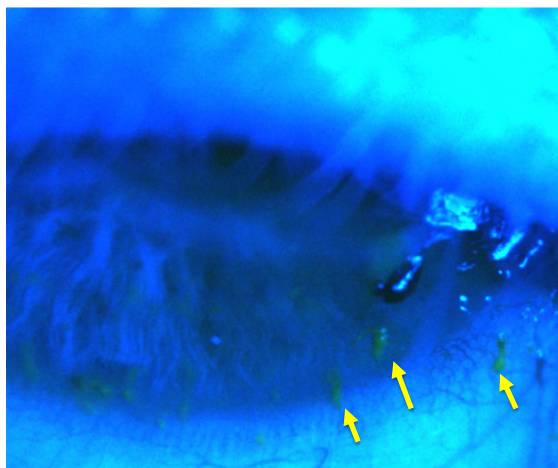
Keratoconjunctivitis (when tear glands stop working)



Filaments (they hurt a lot!)

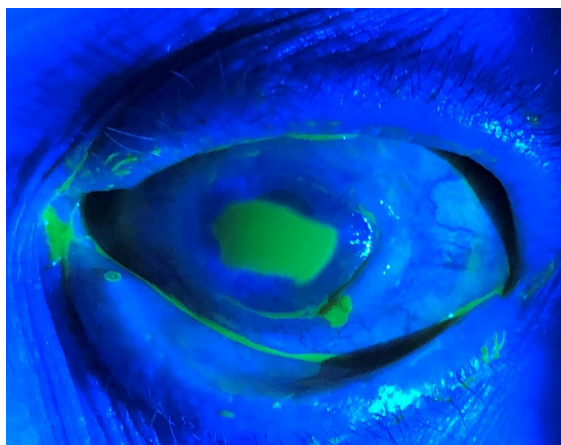


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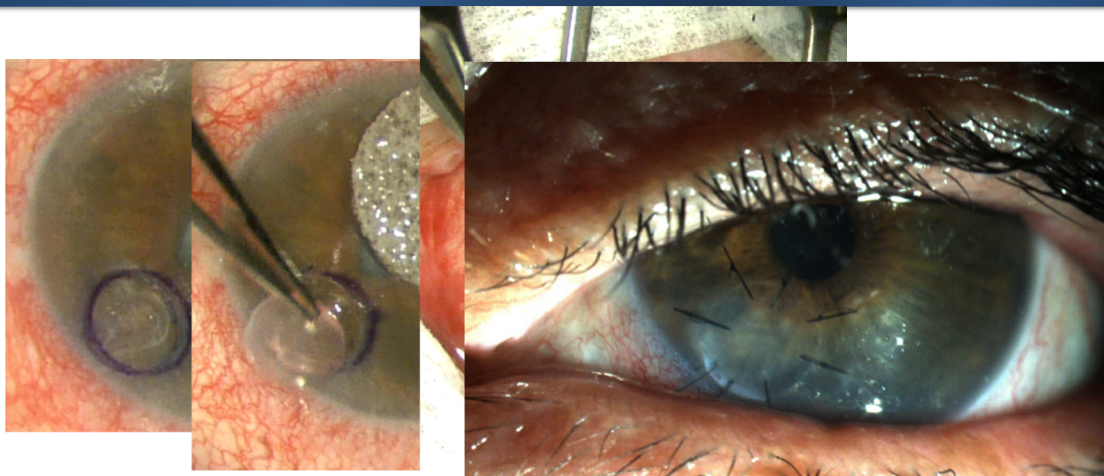
 **Dana-Farber**
Cancer Institute

The surface breaks down when healing is severely compromised




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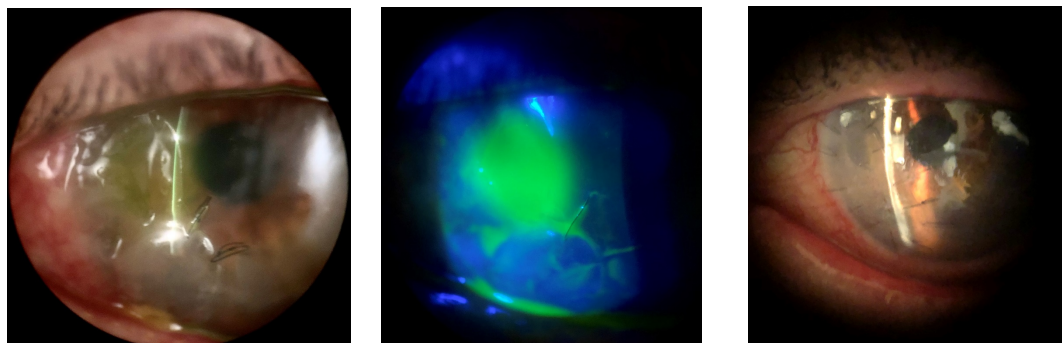
Cornea can perforate in just days



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 **Dana-Farber**
Cancer Institute

Keeps melting



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What can we do about it?

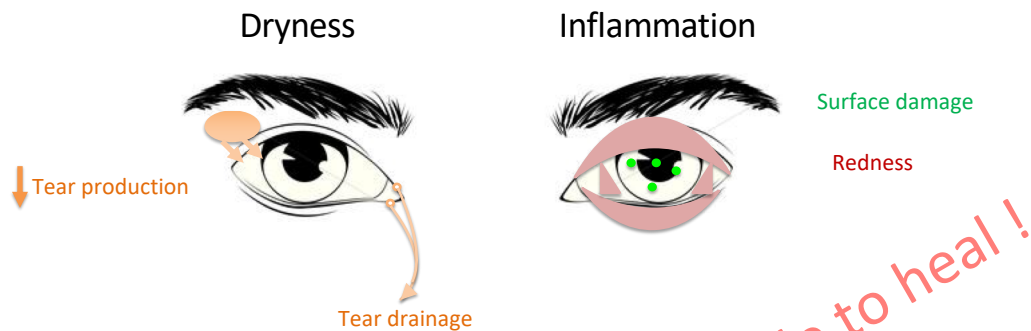
First, understand the problems

Second, avoid preventable damage

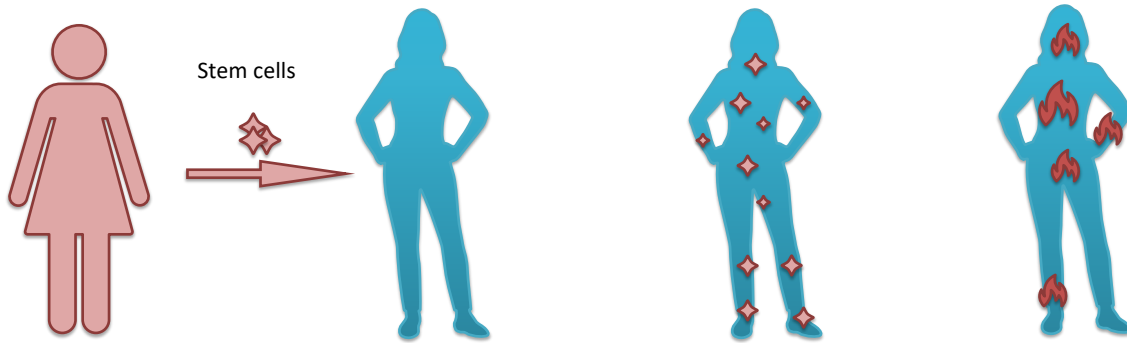
Third, invest (your commitment) in management



Imbalance between damage and repair



Will it go away? the most common question I get

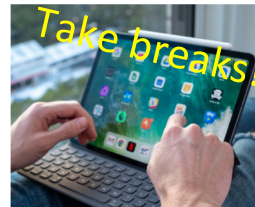


So far, we can manage, but can't get rid of it.



Avoid harm

- Avoid harmful behavior
 - Do not wear regular contact lens
 - Do not rub your eyes (this is for everybody!)
 - Do not dig for mucous or scratch the crusting with nails
 - Do not use redness reliever such as Visine, Opcon A, Naphcon A, Cleareyes
 - Do not use allergy eye drop such as Allaway, Zaditor
 - No contact lens wear
- Decrease screen time, take breaks
- Be very careful with make up and make up removal



The eye is red because it's in pain

- Not infectious conjunctivitis
- Erythromycin doesn't really work
- Visine is TOXIC!



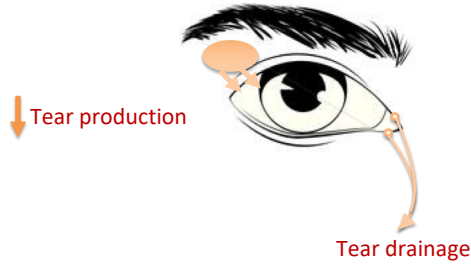
Control the environment

- Modify environmental factors
 - Point air vents in the car away from your face
 - Humidifier ON! all the time when heat is on
 - Wear sunglasses
 - Sports goggles (for motorcycling) available to create “moisture chambers”
- Warm compress (without lid scrubs)



Keep the eyes wet

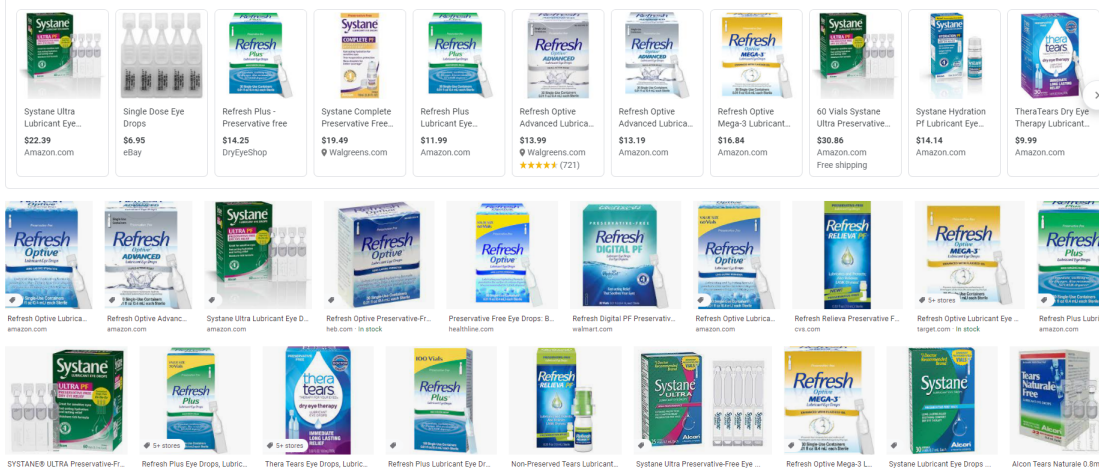
Dryness



1. Lubrication very frequently
2. Make more tears (hard to do)
3. Control the environment humidity
4. Punctal occlusion



Preservative-free lubricant

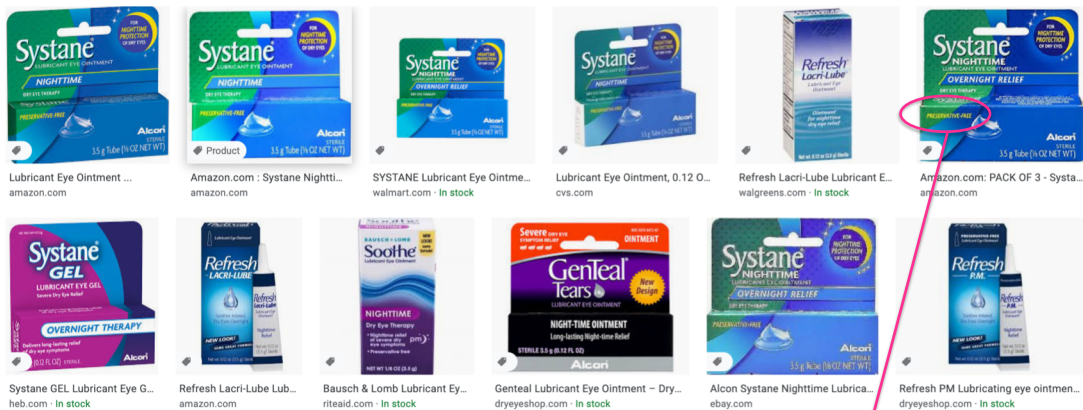


Preservative-free lubricant

- The correct frequency is to keep symptoms at minimum in between the drops
- One drop at a time is enough
- Recapping or not



Lubricant ointment at night



preservative-free

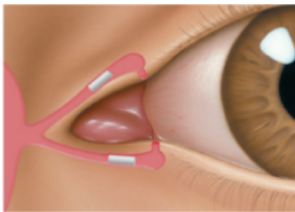
Make more tears

- Artificial tears (*preservative-free*)
- ReStasis and/or Xiidra
 - seem to work only in very mild cases
 - early start (prior to transplant) may have some benefit
 - not helpful in late stages
- Oral Pilocarpine (Salagen) or Cevimeline (Evoxac)
 - Often Rx for dry mouth
 - Induce tear production as well
 - Side effects can be moderated by careful titration in many cases



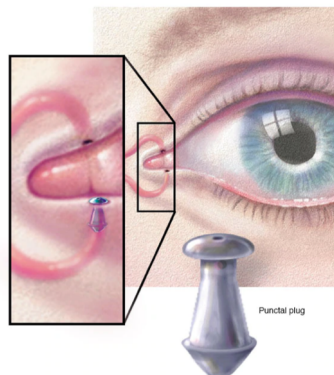
Punctal occlusion - close the drain

Dissolvable or non-dissolvable



Jehangir N et al. Journal of Ophthalmology 2016

Permanent - silicone



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Punctal cautery

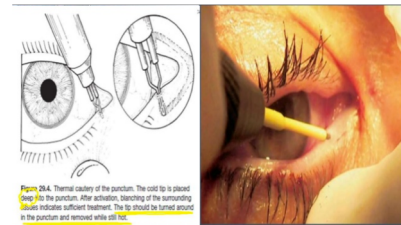


Figure 20.4. Thermal cautery of the punctum. The coil tip is placed into the punctum. After activation, sloughing of the surrounding tissues indicates sufficient treatment. The tip should be turned around in the punctum and removed while still hot.

Marjan Mazouchi. Health & Medicine 2019



Control the inflammation

- Systemic immunosuppression and GvHD treatment
 - oral steroids, tacrolimus and many other systemic treatment
 - Managed by your transplant doctor, works on the whole body
 - watch out during taper!
- Topical steroids (appropriate taper and close monitoring)
 - If a steroid eye medication is prescribed, follow-up is a must
 - Steroid strength
 - Effects on eye pressure

Inflammation



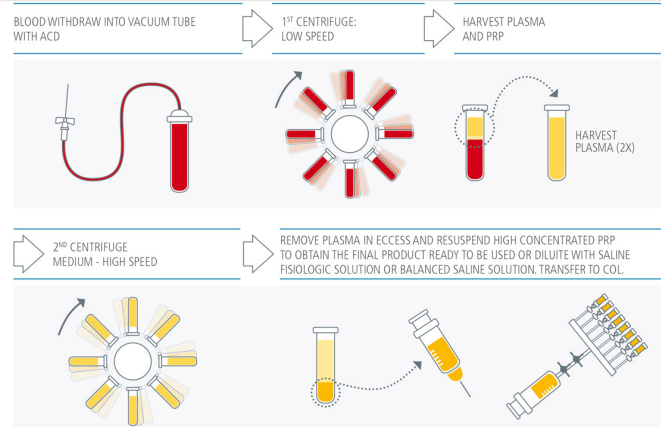
Surface damage

Redness



Give the eyes nutrition

- Serum tears (from your own blood)
 - Labor intensive but often works well
 - Blood draw every couple of months



The entire process of PRP preparation should be carried out in a clean and sterile place with aseptic technique.



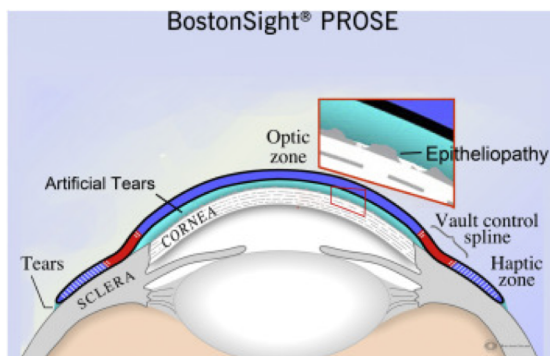
<http://www.biomeddevice.it/index.php/en/ophthalmology>

Therapeutic scleral lens

1. These are **NOT** regular soft or hard contact lens
2. They are fitted only by an optometrist who had special residency training
3. Your transplant doctor or GvHD eye doctor's referral is needed
4. High cost, poor insurance coverage, steep learning curve, but life-changing result for many
5. Major ones are:
 - Boston Sight (www.bostonsight.org)
 - GP lens Institute (www.gpli.info)
 - EyePrintPro (www.eyeprintpro.com)



BostonSight PROSE



Surgical treatments

1. The goal is to avoid having to do surgery if possible
 - corneal patch or transplant is **NOT** curative and is harder to take care of in the long run
 - amniotic membrane helps with healing but will not melt in days or weeks
 - none is comfortable
2. Avoid cosmetic eyelid surgery, eyeliner tattoo, lash extension, or laser vision correction
 - any tissue damage can increase inflammation
 - lid surgery and LASIK worsen dry eyes
3. Cataract surgery is an **exception**, it is necessary but needs to be done with extreme care
 - go to a surgeon with experience in oGvHD
 - pre-op and post-op care different from general population



Support the research effort

- 16 other trials in the US to date
- 12 completed/terminated/withdrawn - recruitment issue
- None FDA approved



What you can and should do?

- Recognize eye symptoms
 - **You are overwhelmed, tired, hurt and fed up!**
 - However, nobody knows how your eyes feel before and after
 - Remember early diagnosis and treatment make a difference in outcome
 - Avoid getting to the point of no return



What you and your family can do?

- Advocate for diagnosis and treatment
 - request inpatient consult if needed
 - volunteer information to you transplant doctor about your eyes
 - ask for referral to **eye doctor experienced in GvHD** before and after transplant
 - discuss any **eye treatment or procedure**, and **systemic treatment change** with the specialist



What your eye doctors can do?

- Look for signs of ocular GvHD vs. other eye problems
- If you have a local eye doctor (general ophthalmologist or optometrist)
 - co-manage with **specialist** experienced in oGvHD
 - It is **NOT** just dry eyes!
 - It can **rapidly** progress into **serious** and **irreversible** situations!
- Initiate treatments as discussed earlier
- Promote the communication between all your doctors
 - Transplant service, dermatology, oral medicine, oncologist, PCP, everybody!



It is “we” and “us” working together!

First, understand the problems

Second, avoid preventable damage

Third, invest (commit) in management

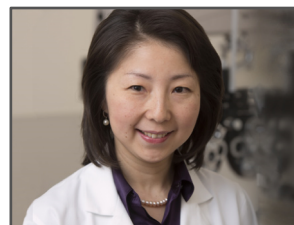


Thank you!



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Questions?



Zhonghui Katie Luo MD, PhD

Celebrating a Second Chance at Life Survivorship Symposium 2022

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