BOX MEDICAL SOLUTIONS PROPOSED
DRY EYE FLOW SHEET

The following is only a suggested practice guideline to provide consideration for practitioners, but does not provide medical advice or diagnosis or treatment. The final judgement on the management of a patient solely relies on the practitioner.

Comprehensive eye exam - to be done before dry eye evaluation
- History of present illness: dryness, irritation, grittiness, sandiness, fluctuating vision, watering, burning, tiredness, soreness
- Ocular Surface Disease Index (OSDI)
- Mild-moderate and severe – Moderate to severe schedule follow up
- Recommend at-home therapy: artificial tears 4 times daily OU, warm compresses for 10 minutes BID OU (after removing contact lenses), and starting 2000 mg EPA / 1000 MG DHA omega-3 supplements PO qDaily
- Schedule for baseline dry eye evaluation at 2 weeks. OK to cancel if feeling better on regimen
- Patient to fill out a dry eye packet before they come back (see attached questionnaire)

Dry eye baseline evaluation (at 2 weeks post-comprehensive exam)
- Review Dry Eye Questionnaire:
- Careful evaluation of the eyelids and adnexa
  - Entropion
  - Ectropion
  - Punctal mal-apposition
  - Dermatochalasis
  - Lagophthalmos
  - Distichiasis
  - Scurfs
  - Collarettes
  - Lid margin telangiectasias
- Careful evaluation of the meibomian glands
  - Inspissation
  - Quality of meibum secretion: clear, milky, milky with particulates, toothpaste
  - Meibography (additional cost)
  - Tortuosity
  - Hypertophy
  - Dropout (and location)
  - Presence of cysts
- Measure tear meniscus height
- Careful evaluation of the conjunctiva
  - Bitot’s spots
  - Pinguecula
  - Pterygium
Temporal conjunctival chalasis

- Instill fluorescein
  - Conjunctival staining
  - Corneal staining
  - Tear breakup time (TBUT)
  - Marx line location (through meibomian gland orifices or posterior)

- Instill proparacaine
  - Schirmer score

Conclusion of evaluation

Determine what can be treated and/or changed

- If meibomian gland dysfunction is found:
  - Meibography - $50 out of pocket charge
    - This is a better indicator of whether you need to be placed on long-term medications such as topical steroids and Restasis to help improve your dry eye symptoms.
    - This is also a good marker for change – we can monitor your glands to determine if there is further deterioration in the future
    - If the patient gets meibography and Miboflo treatment, the initial meibography imaging cost is waived/bundled into the cost of Miboflo
  - BlephEx
  - Miboflo
  - Topical steroids
  - Doxycycline / minocycline oral course – 50-100 mg BID PO x 2 weeks depending on severity

- If blepharitis is found:
  - Blephex
  - Avenova
  - Maxitrol ointment at night
  - In office tea-tree oil treatment

- If keratoconjunctivitis sicca is found:
  - Artificial tears
  - Gel artificial tears
  - Ointment at night
  - Increased water intake
  - Topical steroids

If patient defers treatment, send the patient home with information about MGD and Miboflo/Lipiflow and home therapy recommendations

- Follow up in 2 weeks to see if symptoms have improved
- Continue warm compresses, artificial tears, omega-3s

If Miboflo/Lipiflow is done that day, follow up in 1 month
• If the patient gets meibography and Miboflo/Lipiflow treatment, the initial meibography imaging cost is waived/bundled into the cost of Miboflo/Lipiflow
• Continue warm compresses, artificial tears, omega-3s
• If Blephex is done that day, follow up in 1 month
  • Continue warm compresses, Avenova lid scrubs, artificial tears

One-month post-treatment
• Repeat OSDI
• Careful evaluation of the eyelids and adnexa
  • Scurfs
  • Collarettes
  • Lid margin telangiectasias
• If improvement, continue warm compresses, Avenova lid scrubs, artificial tears
  o Stretch out follow up to 3 months
• If no improvement, follow up in another 1 month
• Review history and check for continued stressors
• Matrix metalloprotease-9 evaluation to determine if residual inflammation present
• Tear film osmolarity measurement to determine if continued presence of evaporative stress
• Careful evaluation of the meibomian glands
  • Digital meibomian gland expression
  • Inspissation
  • Quality of meibum secretion: clear, milky, milky with particulates, toothpaste
  • Meibography (additional cost)
  • Tortuosity
  • Hypertophy
  • Dropout (and location)
  • Presence of cysts
• Measure tear meniscus height
• Instill fluorescein
  • Conjunctival staining
  • Corneal staining
  • Tear breakup time (TBUT)
• If no improvement, start a combination of the following:
  • Topical steroids QID OU x 3 weeks
  • Oral doxycycline, azithromycin, or minocycline
  • Continue omega-3s and warm compresses
  • Follow up in 1 month, with discontinuation of steroids 1 week before the appointment
• If improvement: continue omega-3s and warm compresses
  • Stretch out follow up to 3 months

If no improvement at 2 month follow-up, consider:
- Repeat treatment
- Transdermal testosterone cream
- BioD optics/amniotic membrane therapy
- Punctal plugs (after treatment with course of topical steroids)
- Changing type of oral tetracycline
- Start Restasis and/or Xiidra
- Moisture goggles
- Blink rate assessment
- Blink rate training
- Scleral contact lenses
- Reassess initial documentation

**Key points to consider:**
- Repeat meibography every 6-12 months to determine if further deterioration is noticed
- Educate the patient that improvement in meibography is not expected, only prevention of further deterioration

**Dry eye packet**
- Sjogren’s syndrome survey: do you have any of the below:
  - Dry mouth
  - Vaginal and skin dryness
  - Dry nose
  - Debilitating fatigue
- Work and lifestyle environment survey:
  - On average, how many hours do you sleep per night?
  - Do you find yourself waking up often in the middle of the night?
  - How many hours do you spend each day in front of a screen (computer, tablet, phone, e-reader, etc.)?
  - How many hours do you spend each day in the car?
  - Is your dry eye worse towards the end of the day or in the morning?
  - Do you notice any change in dryness between weekdays and weekends?
  - Has anyone told you that you sleep with your eyes open?
  - Has anyone told you that you snore in your sleep?
  - Have you ever been diagnosed with obstructive sleep apnea (OSA)?
  - If so, do you use a CPAP machine?
  - How much fish do you eat per week?
  - Do you use eye makeup?
  - If so, how do you remove your makeup? How often?
  - Do you currently use a humidifier?
  - How much water do you drink a day? Caffeinated beverages (coffee, tea, energy drinks, yerba mate, etc.)?
- Medications
- Diuretics, antihistamines, antipsychotics, hormone replacement therapy, birth control and dosages
- Dietary supplements and dosages
- Do you have any endocrine related conditions such as diabetes or hormonal problems (especially with estrogen or testosterone)?
- Are you peri- or post-menopausal?
- Are you pregnant?
- Have you ever had vision-correcting surgery such as RK, LASIK, or PRK? If so, when?
- Have you ever had chemotherapy or radiation treatment for cancer?
- Do you smoke tobacco, marijuana, and/or e-cigarettes?
- Have you ever had surgery for weight loss?
- Have you been diagnosed with any intestinal issues?
- Do you now or have you ever had an eating disorder (bulimia, anorexia)?