
Ocular Health & Nutrition

*The 3 Basic Nutrition Lessons
Every Optometrist Should Know*



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Optometrist & Certified Holistic Nutritional Consultant

Financial Disclosures:

None

Dr. Sebastian does however provide customized nutrition protocols for patients seeking to address the root causes of their health issues.

Lecture Outline:

1. Basic Nutrition Lesson #1: Foie Gras (Insulin Resistance)
 2. Basic Nutrition Lesson #2: Increased Intestinal Permeability (Leaky Gut)
 3. Basic Nutrition Lesson #3: The Standard American Diet causes Standard American Diseases
 4. Insulin Resistance Reversal
 5. Autoimmune Disease Reversal
-

Basic Nutrition Lesson #1

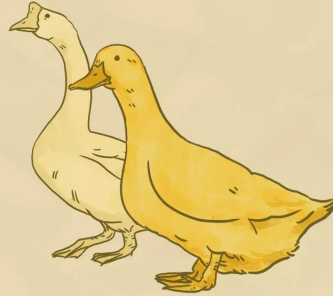
Barnyard Example: Foie Gras

Does anyone know what Foie Gras is?

Fatty Goose or Duck Liver

Foie Gras

- Fattened goose or duck liver
- Production methods include gavage (force-feeding)
- Can be seared or poached
- Store in original vacuum-sealed package up to 3 weeks
- Often made into pâtés and layered terrines



 the spruceEats

<https://www.thespruceeats.com/what-is-foie-gras-995680>



<https://kitchenacademy.es/biblioteca/alimentos/foie-gras>



<https://gourmetwarehouse.ca/foie-gras-on-toasted-brocher/>

Does anyone know what they feed the duck or goose?



<http://mindfulnesstalk.ie/leaders-are-confused/>

It's not butter.

It's not coconut oil.

It's not bacon grease.

It's not lard.

It's not beef tallow.

It's not avocados...

It's corn.



<https://heatherlea.ca/3-steps-to-the-sweetest-juiciest-sweet-corn/>



<https://www.thecountrycook.net/fried-corn/>

But what is corn?...

- It's a grain.
 - It's a refined carb.
 - It's a starch.
 - It converts to sugar fast in the body.
-

Farmers have known for hundreds of years that
grain (not fat) makes animals fat.

Recognize these diseases?

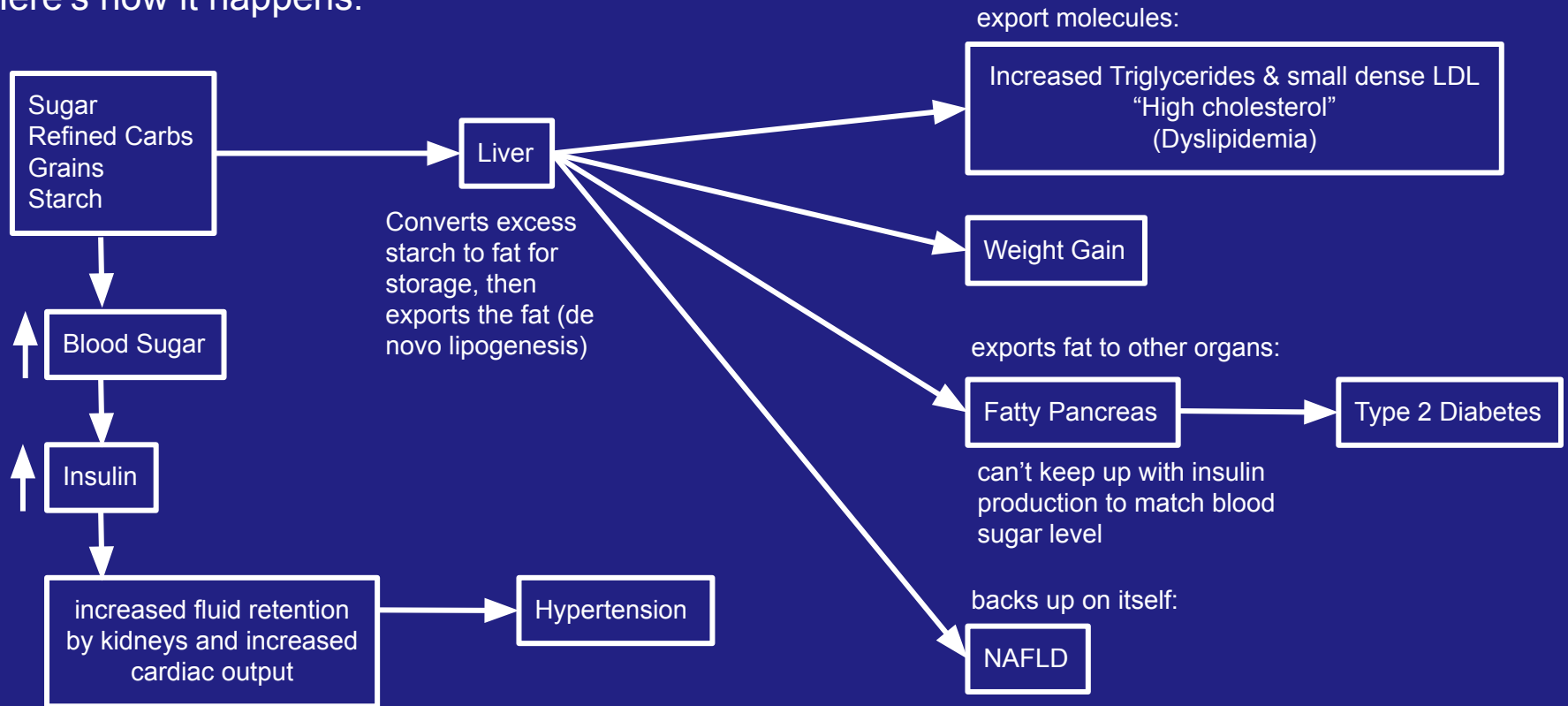
They're actually all the same disease.

Refined Carb/Sugar Poisoning



<https://www.crashpixel.com/stock-photo/sugar-on-table-background-white-5690580.html?>

Here's how it happens:



Do we see these problems as ocular health issues?

You bet...

NAFLD

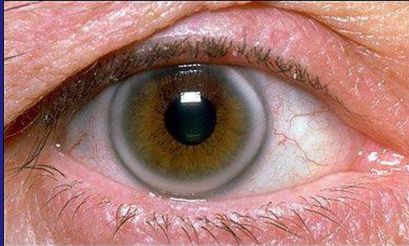
Xanthelasma



<https://www.allaboutvision.com/conditions/xanthelasma/>

Dyslipidemia

Arcus



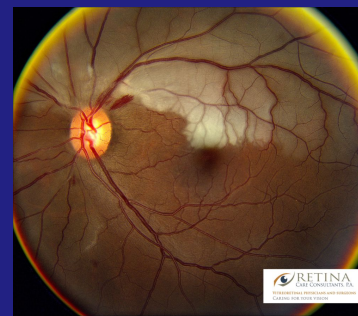
<https://www.arthurhayes.co.uk/expert-eye-care-blog/arcus-senilis-corneal-arcus-what-is-it>

Hollenhorst Plaque (embolus)



https://kellogg.umich.edu/theeyeshave/opticfundus/hollenhorst_plaque.html

Branch Retinal Artery Occlusion (BRAO)



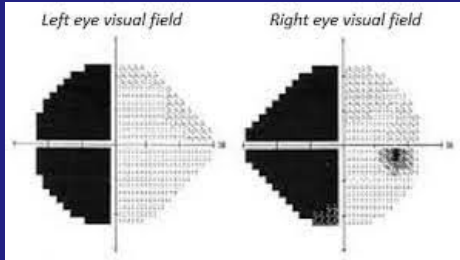
<https://share retina.com/patient-services-education/retinal-artery-occlusion/>

Central Retinal Artery Occlusion (CRAO)



https://en.wikipedia.org/wiki/Central_retinal_artery_occlusion

Stroke



<https://mfl.nhs.uk/app/uploads/sites/2/2020/11/REH-280-living-with-a-hemianopia.pdf>

Meibomian Gland Dysfunction (MGD)



Normal Eyelid (meibomian) Glands:

Meibomian glands produce the oils needed for a healthy tear film

<https://www.eyetink.com/eye-care-services/dry-eye-optometrist/everything-you-need-to-know-about-meibomian-gland-dysfunction/>



Gland (oil) Dropout:

MGD occurs when the meibomian glands become blocked. If this blockage is left untreated the glands will drop out entirely.



<http://www.ckko.com.au/eye-condition/dry-eye-syndrome>

~86% of dry eye cases

"Dyslipideverything"

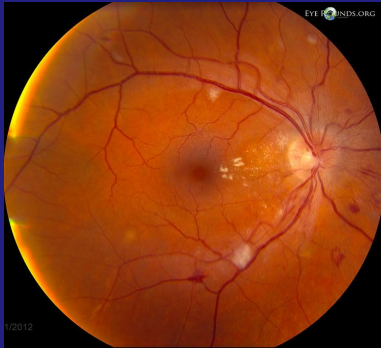
(Kuriakose & Braich, 2018)

(Akowuah et al., 2023)

(Bu et al., 2019)

High Blood Pressure

Hypertensive Retinopathy



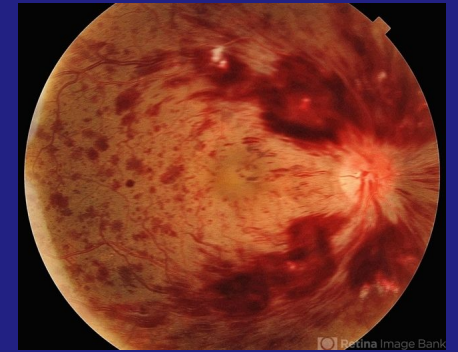
Malignant Hypertension



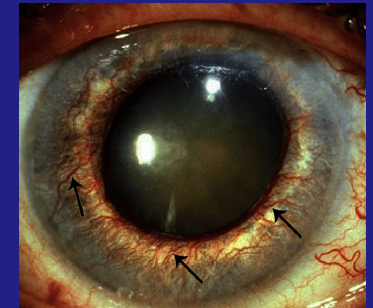
Branch Retinal Vein Occlusion (BRVO)



Central Retinal Vein Occlusion (CRVO)

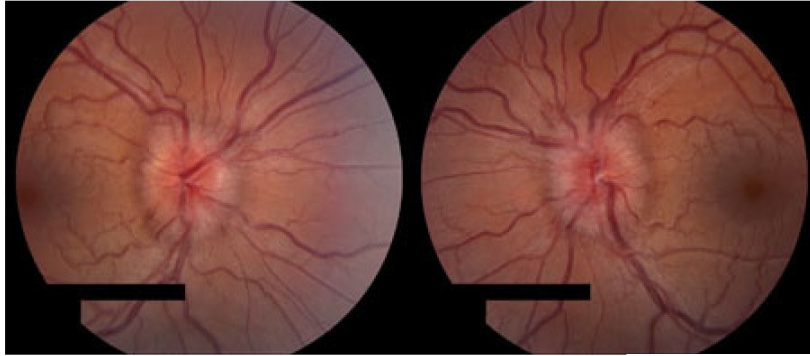


Secondary Neovascular Glaucoma

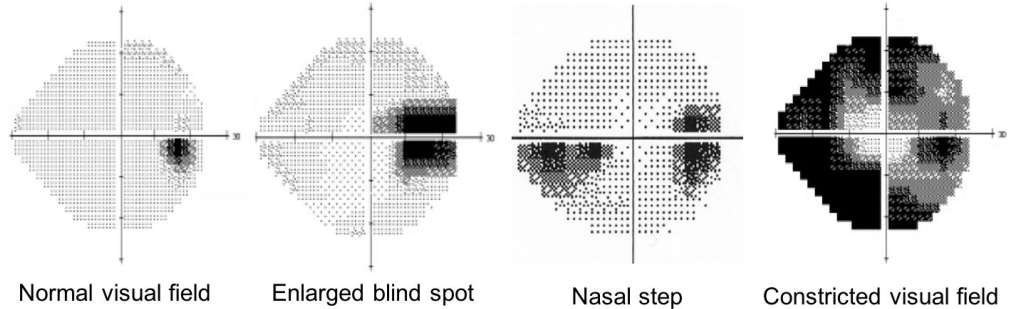


Obesity

Idiopathic Intracranial Hypertension



...and associated progression of visual field defects to vision loss.

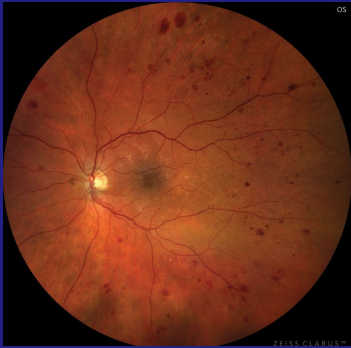


<https://www.semanticscholar.org/paper/Idiopathic-intracranial-hypertension-Rashed>

<https://pressbooks.pub/casebasedneuroophthalmology/chapter/idiopathic-intracranial-hypertension/>

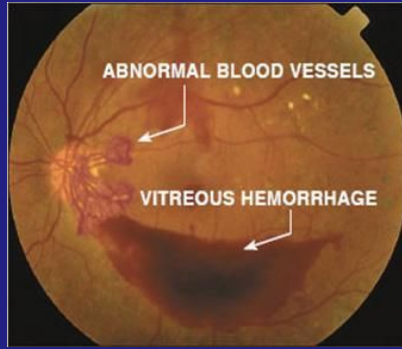
Type 2 Diabetes

Nonproliferative Diabetic Retinopathy (NPDR)



<https://www.revieweducationgroup.com/ce/staging-of-diabetes-and-diabetic-retinopathy>

Proliferative Diabetic Retinopathy (PDR)

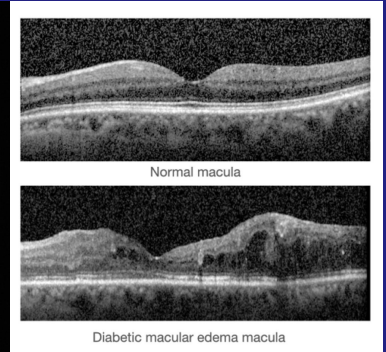


<https://www.refinaeye.com/contents/common-diseases/diabetic-retinopathy/proliferative-diabetic-retinopathy>

Diabetic Macular Edema (DME)



<https://www.eyedoctorpmb.co.za/procedures/diabetic-macular-oedema/>



<https://www.healthcentral.com/condition/diabetic-macular-edema>

Fibrovascular Proliferation



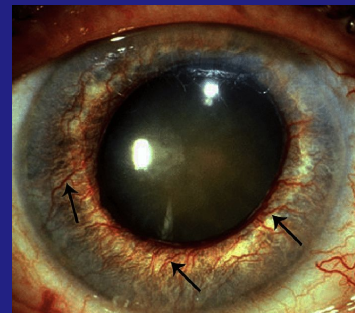
<https://imagebank.asrs.org/file/3584/fibrovascular-proliferation>

Secondary Tractional Retinal Detachment



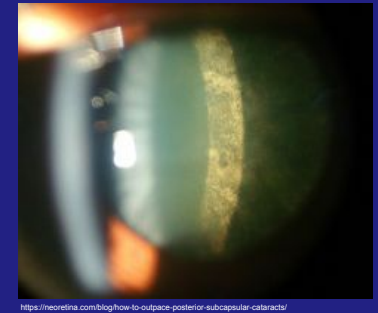
<https://webeye.ophth.uiowa.edu/eyeforum/atlas/pages/tractionRD.html#sc.tab=0>

Secondary Neovascular Glaucoma



<https://www.researchgate.net/figure/Neovascular-glaucoma>

Posterior Subcapsular Cataract

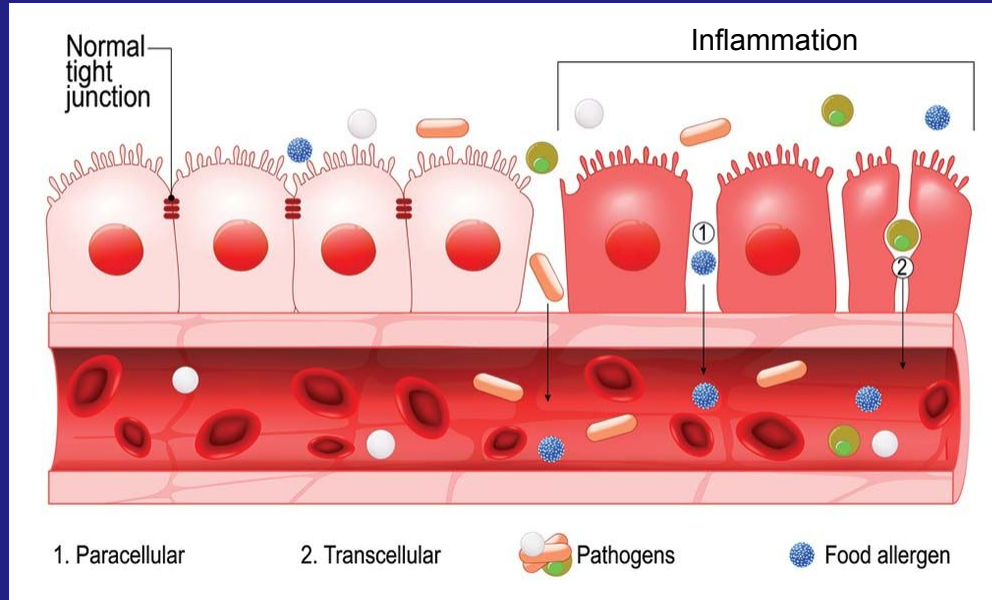


<https://neoretna.com/blog/how-to-oupace-posterior-subcapsular-cataracts/>

These are all ocular health manifestations of human foie gras disease.

Basic Nutrition Lesson #2

Increased Intestinal Permeability (a.k.a. “Leaky Gut”)

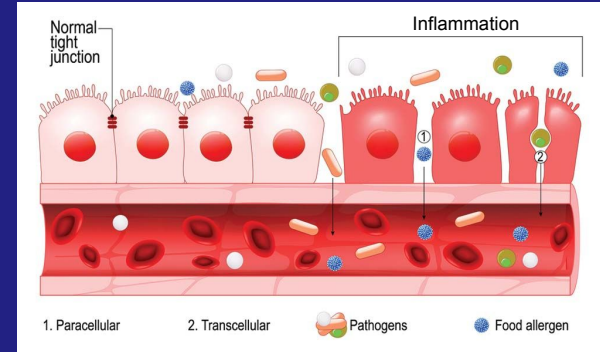


Leaky Gut is the Gateway for Systemic Inflammation

Once foreign substances slip past the defences, the immune system sees these as non-self and attacks.

But the inflammation is now in the bloodstream, so it can go anywhere. (i.e. system wide)

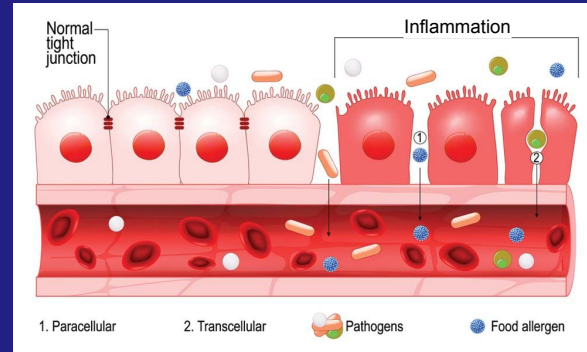
Systemic Inflammation



<https://www.gastroav.com/blog/leaky-gut-what-it-is-and-how-to-heal-it/>

Leaky Gut is ...

- the gateway for Systemic Inflammation
- the basis of Autoimmune Disease



<https://www.gastroav.com/blog/leaky-gut-what-it-is-and-how-to-heal-it/>

Do we see these problems as ocular health issues?

You bet...

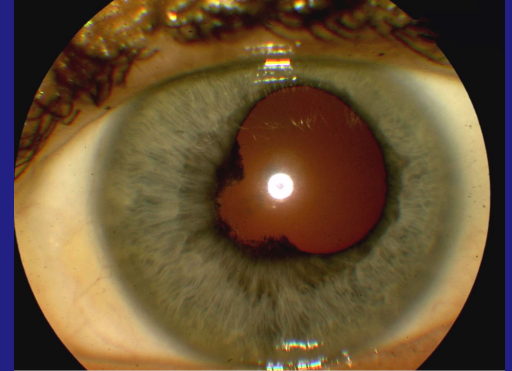
Iritis



<https://step2.medbullets.com/ophthalmology/120501/uvells/>



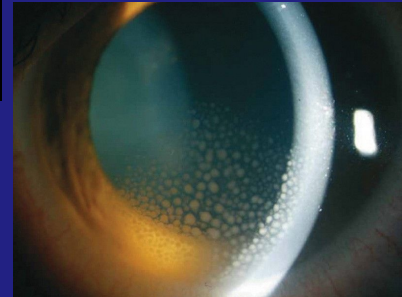
<https://www.sciencedirect.com/science/article/abs/pii/S0780323895411000045>



<https://www.ophthalmologytraining.com/ophthalmology-in-practice/red-eye-diagnosis/iritis>



<https://tanner-eyes.co.uk/glaucoma-and-general/iritis/>



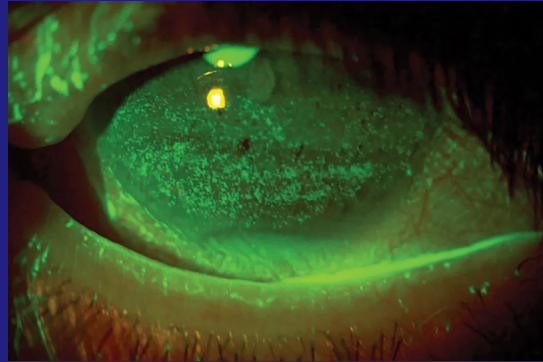
<https://almanakeyehospital.com/eye-conditions/uvells/7tangren>

“Leaky Gut” = “Leaky Eye”

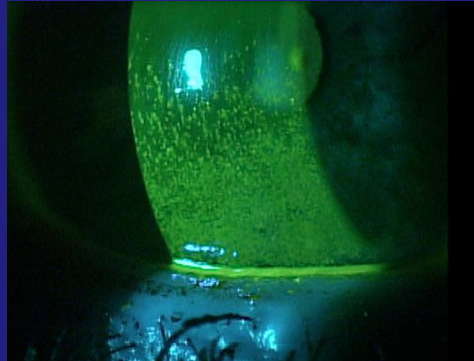
Sjogren's Syndrome



<https://www.miamicontactlens.com/sjogrens-syndrome/>

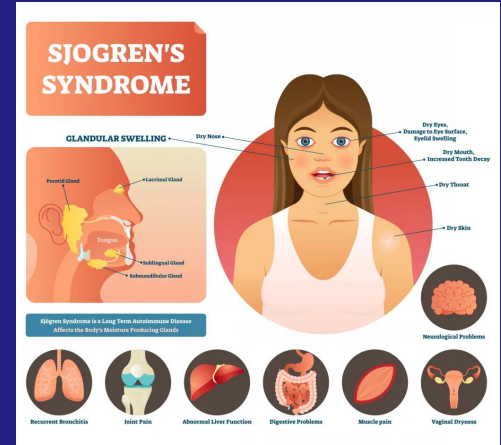


<https://www.comealphysician.com/issues/2024/july/summarizing-at-home-dry-eye-disease-treatments/>

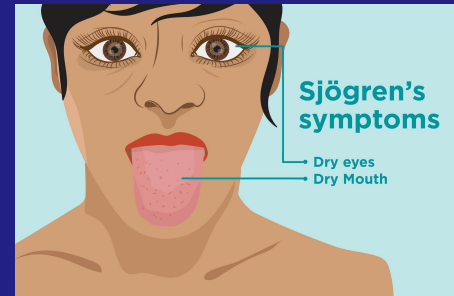


<https://www.reviewofoptometry.com/article/vital-dyes-can-help-detect-sjogren-related-ded>

~10% of dry eye cases



<https://www.tinberlake.com/blog/2018/sjogrens-syndrome/>



<https://crazyjoints.org/news/sjogrens-syndrome-heart-disease-link/>

Grave's Disease & Hashimoto's Thyroiditis

Thyroid Eye Disease



https://en.wikipedia.org/wiki/Graves%27_ophthalmopathy



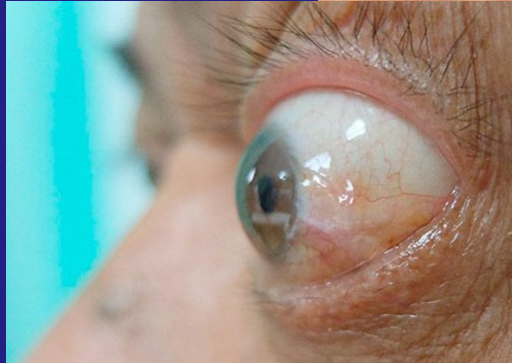
<https://www.danieleozra.co.uk/thyroid-eye-disease>



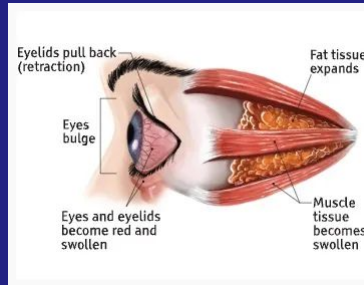
<https://morancore.utah.edu/basic-ophthalmology-reviews/proptosis-graves-disease/>



<https://www.sciencephoto.com/keyword/thyroid-eye-disease?n=2>



<https://www.doctorosh.com/services/functional/thyroid-eye-disease/>



<https://techtavymama.com/2023/07/graves-disease-what-to-know-thyroid-eye-disease.html>



https://www.researchgate.net/figure/CT-of-41-year-old-man-with-Graves-disease-a-Axial-scan-demonstrates-bilateral_fig_12690633

Multiple Sclerosis (MS)

Optic Neuritis



<https://kittyeyecenter.com/our-specialties/neuro-ophthalmological/optic-neuritis/>

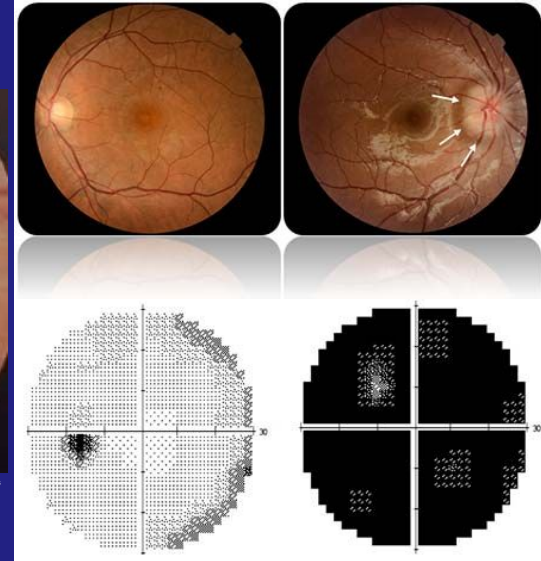
Five Hallmarks of Optic Neuritis

- 1** Loss of visual acuity
- 2** Impaired color vision
- 3** Visual field loss
- 4** Afferent pupil defect
- 5** Optic nerve abnormality
Nerve may be normal at presentation

<https://physicianfocus.mydatagize.org/new-push-for-optic-neuritis-as-the-fifth-lesion-site-in-multiple-sclerosis/>



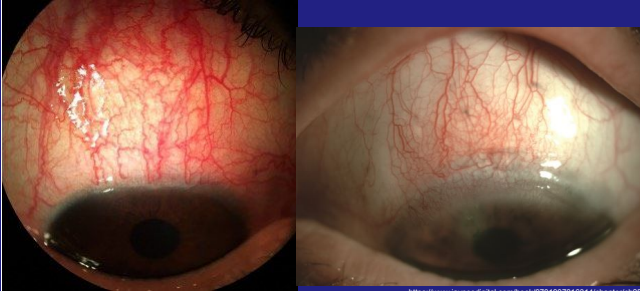
<https://www.aapos.org/glossary/optic-neuritis>



<https://www.retinagochastanesi.com/en/hastalklar-detai/optic-neuritis-and-multiple-sclerosis>

Rheumatoid Arthritis

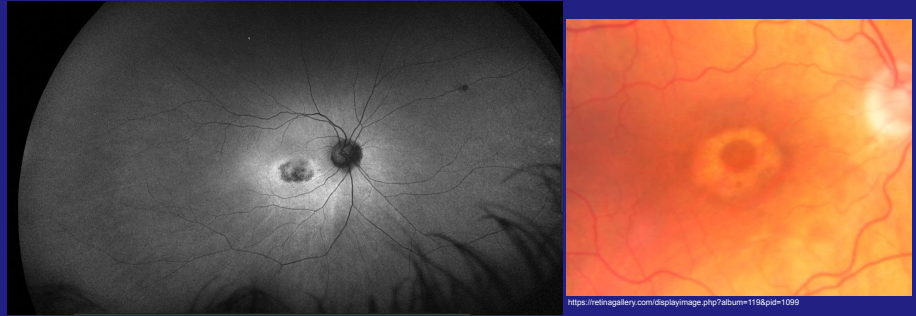
Superior Limbic Keratoconjunctivitis (SLK)



https://www.researchgate.net/figure/Superior-limbic-keratoconjunctivitis-in-a-patient-with-Rheumatoid-arthritis-and-sSS_fig2_356787457

<https://www.jaypeedigital.com/book/9781907816314/chapter/125>

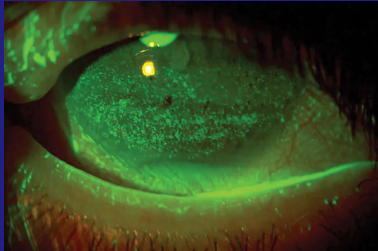
Plaquenil (Hydroxychloroquine) Maculopathy



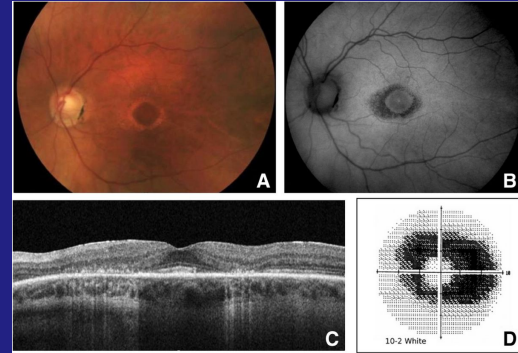
<https://www.reviewofoptometry.com/article/plaquenil-toxicity-how-to-avoid-this-bullseye>

<https://retinagallery.com/displayimage.php?album=115&pic=1099>

Sjogren's Syndrome



<https://www.comealphysician.com/issues/2024/july/summarizing-at-home-dry-eye-disease-treatments/>



<https://link.springer.com/article/10.1007/s40135-024-00321-6>

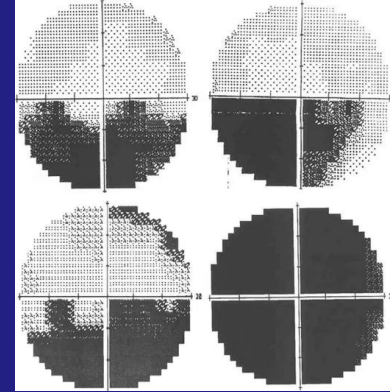
Giant Cell Arteritis (GCA)



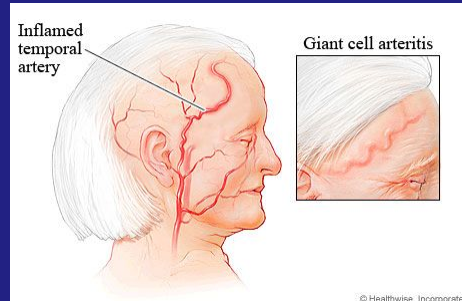
https://www.researchgate.net/figure/Giant-cell-arteritis-A-color-fundus-photo-graph-that-shows-a-pale-superior-artery-fig_885208



<https://www.sciencedirect.com/science/article/pii/S131943341400116>

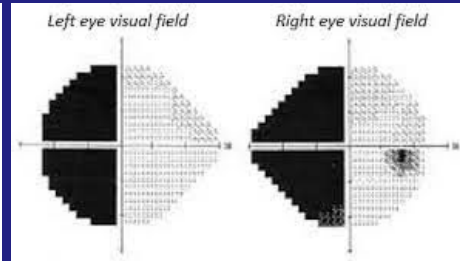


<https://enbokey.com/giant-cell-arteris-2/>



<https://hahermiston.com/patient-education/healthwise/700CHWD?m=231>

© Healthwise, Incorporated

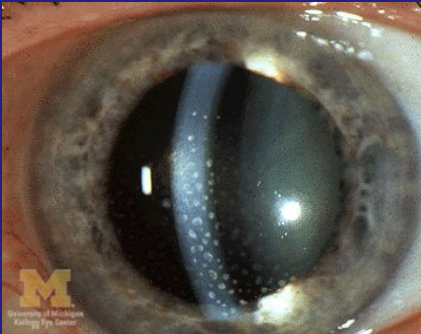


<https://mf.rhls.uk/app/uploads/sites/2/2020/11/REH-280-living-with-a-hemianopia.pdf>

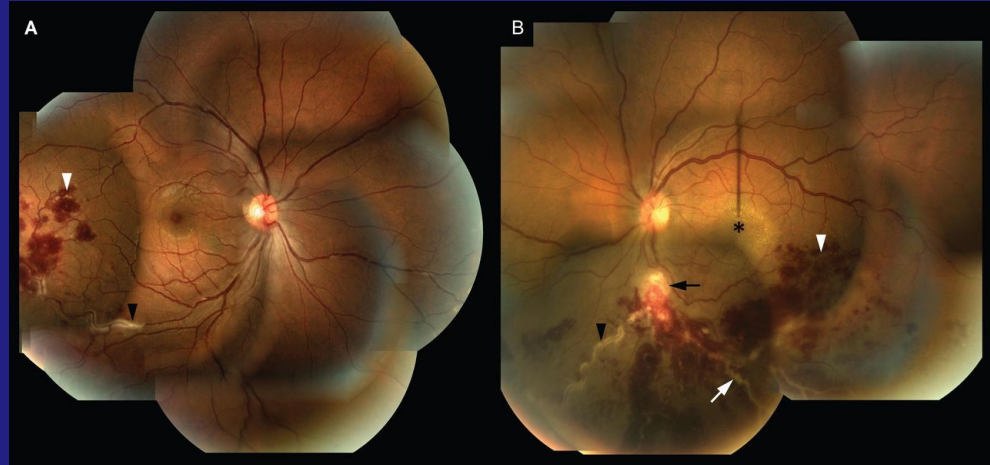
Sarcoidosis



https://link.springer.com/chapter/10.1007/978-3-030-03140-4_2



<https://kelllogg.umich.edu/theeyesaveit/system/sarcoidosis.html>



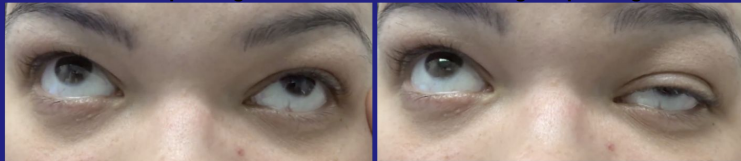
<https://www.jrheum.org/content/45/4/680>

Myasthenia Gravis



Initial upward gaze

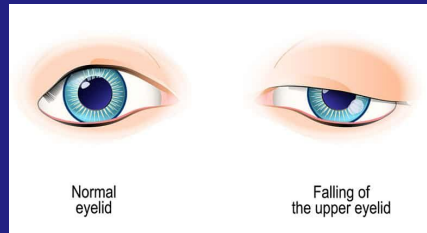
Prolonged upward gaze



<https://pressbooks.pub/casebasedneuroophthalmology/chapter/myasthenia-gravis/>



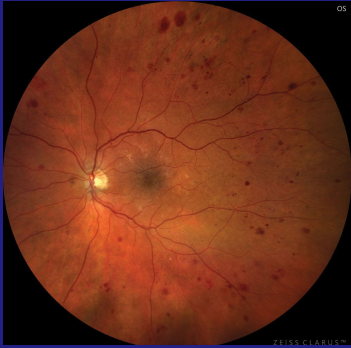
<https://www.allaboutvision.com/conditions/related/ocular-myasthenia-gravis/>



<https://www.icta.com.sg/myasthenia-gravis/>

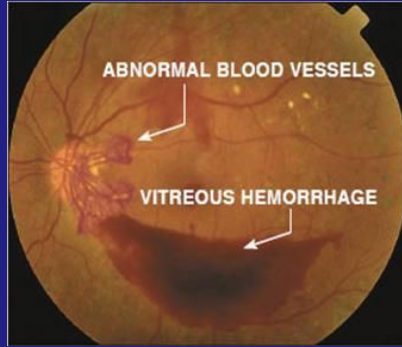
Type 1 Diabetes

Nonproliferative Diabetic Retinopathy (NPDR)



<https://www.revieweducationgroup.com/ce/staging-of-diabetes-and-diabetic-retinopathy>

Proliferative Diabetic Retinopathy (PDR)

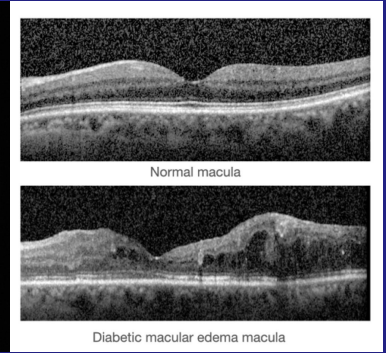


<https://www.retnaeye.com/contents/common-diseases/diabetic-retinopathy/proliferative-diabetic-retinopathy>

Diabetic Macular Edema (DME)



<https://www.eyedoctormb.co.za/procedures/diabetic-macular-oedema/>



Normal macula

Diabetic macular edema macula

<https://www.healthcentral.com/condition/diabetic-macular-edema/>

Fibrovascular Proliferation



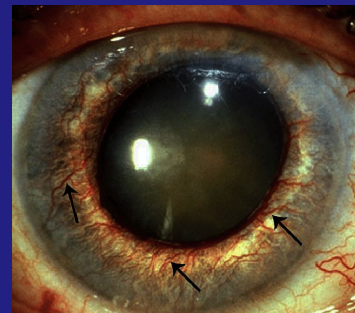
<https://imagebank.asrs.org/file/3584/fibrovascular-proliferation>

Secondary Tractional Retinal Detachment



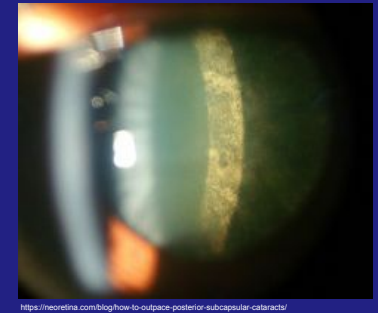
<https://webeye.ophth.uiowa.edu/eyeforum/atlas/pages/tractionRD.html#sc.tab=0>

Secondary Neovascular Glaucoma



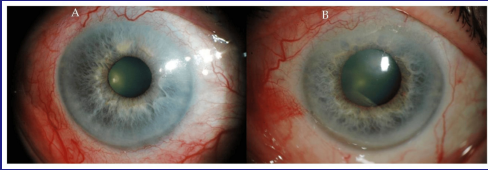
<https://www.researchgate.net/figure/Neovascular-glaucoma>

Posterior Subcapsular Cataract

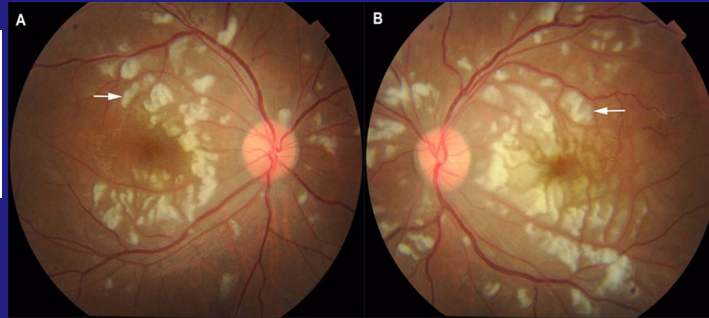


<https://neoretna.com/blog/how-to-oupace-posterior-subcapsular-cataracts/>

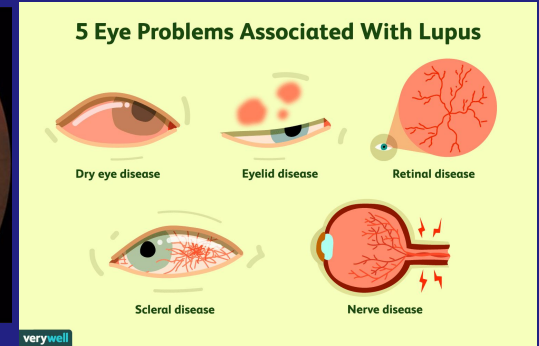
Lupus



<https://www.mdpi.com/1422-0067/23/20/12284>



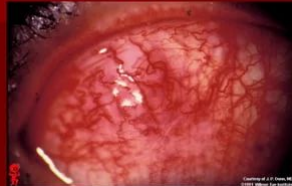
<https://www.bmj.com/content/360/bmj.g551>



verywell

<https://www.verywellhealth.com/lupus-and-the-eyes-3422110>

Scleritis



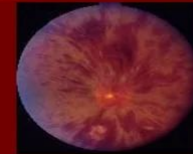
Scleritis



Branch Retinal Artery Occlusion



Central Retinal Vein Occlusion



<https://www.slideshare.net/slideshow/lupus-and-your-eyes/5384553>

These are all ocular health manifestations of leaky gut complications.

And all of the diseases mentioned thus far are chronic diseases.

Chronic diseases are all inflammatory diseases...
so where is the inflammation coming from?



Basic Nutrition Lesson #3

The
STANDARD AMERICAN DIET
causes
STANDARD AMERICAN DISEASES.

- To successfully address and heal these chronic diseases (that affect the body and the eyes), we have to deal with food.
-

There are only 2 types of food:

- Inflammatory Food
- Anti-Inflammatory Food



Inflammatory Food (Don't Eat)

- **Sugar**

- i.e. — juice, pop, cookies, cake, pastries, donuts, candy, milk chocolate

- **Gluten**

- i.e. — wheat, flour, bread, cereal, pasta, pizza, barley, rye, soy sauce, oats*

- **GMO/Pesticide-ridden foods**

- i.e. — wheat, corn, soy, canola, alfalfa, sorghum, oats, chickpeas, EWG's "Dirty Dozen"***

- **Processed/Refined Carbohydrates**

- i.e. — chips, fries, rice, potatoes, corn, oats

- **Artificial Sweeteners**

- i.e. — NutraSweet (aspartame), Splenda (sucralose), Equal, Sweet 'N Low, diet products, diet pop, coffee sweetener

- **Bad Fats**

- i.e. — trans fat (margarine), canola oil, vegetable oil, corn oil, soybean oil, sunflower oil, safflower oil, seed oils (grapeseed oil, rapeseed oil, cotton seed oil, sesame seed oil, etc.), omega 6, peanut oil

- **Inflammatory Proteins**

- i.e. — conventional beef raised on animal feedlots, regular soy

- **Alcohol**

*Can be processed in gluten-containing facilities

**Check the Environmental Working Group's website (ewg.org) for produce containing the most pesticides (i.e. the Dirty Dozen)

Anti-Inflammatory Food (Eat)

- **Good Fats**

- i.e. — omega 3, olive oil, grass-fed butter, ghee, coconut oil, MCT oil, cod liver oil, avocado oil, avocado, organic bacon, seafood, nuts, grass-fed beef tallow, organic pork lard

- **Vegetables/Fruits**

- i.e. — sweet potatoes, squash, bell peppers, cantaloupe, spinach, carrots, avocados, organic blueberries, organic strawberries, raspberries, broccoli, leafy greens, cabbage, asparagus, seaweed, etc.

- **Probiotics**

- i.e. — plain kefir, plain organic full fat yogurt, coconut kefir, sauerkraut, kimchi

- **Protein**

- i.e. — wild-caught fish (salmon, sardines, trout, cod, etc.), shellfish, chicken (organic is best), pork (organic is best), grass-fed beef, lentils & legumes

- **Drinks**

- i.e. — water, tea, coffee, coconut milk, coconut water

- **Desserts**

- i.e. — dark chocolate (80% or more), honey, stevia, monkfruit sweetener

Foods That Depend On The Person

- Dairy
 - i.e. — organic grass-fed antibiotic-free full fat dairy
- Eggs



Not recommended if there's a sensitivity or autoimmune condition.

Organic or not?

“The Dirty Dozen”



ewg.org

“The Clean Fifteen”



The Standard American Diseases (which have ocular manifestations as seen here today) are preventable and in many cases reversible.

Foie Gras Reversal

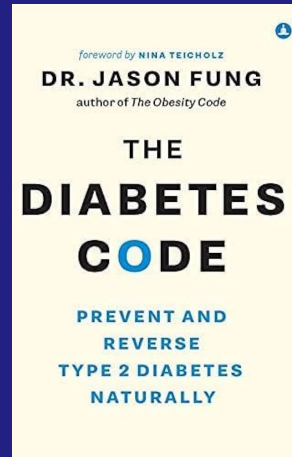
Foie Gras/Insulin Resistance/Metabolic Syndrome and all its variations

- NAFLD
- Hypertension
- Dyslipidemia
- MGD
- Obesity
- Type 2 Diabetes
- Increased Cancer Risk

are due to both high blood sugar and high insulin.

So, obviously we must reduce both high blood sugar and high insulin.

The blueprint of which was outlined in a book written by a previous keynote speaker: Dr. Jason Fung



2 Ways to Reduce Insulin (and High Blood Sugar):

1) WHAT you eat

- Don't eat foods that stimulate insulin release.
- Eat low carb, high fat (LCHF) and moderate protein.

2) WHEN you eat

- Allow time for insulin levels to drop naturally.
- Insulin is the hormonal signal to store energy. When its levels are low, this is the stimulus to USE energy (autophagy).
- Accomplished through intermittent fasting.

OHIP covered program already doing this for patients online: Lifestyle Rx

The screenshot shows the LifestyleRx website with a navigation bar at the top containing 'Diabetes', 'All Programs', 'For Providers', 'Our Team', a Canadian flag, 'Login', and a 'Join Now' button. The main content area features a large heading 'Take Control of Type 2 Diabetes' and a sub-heading 'Lifestyle First, Improvement Inevitable, Remission Possible'. A green badge indicates 'Covered in BC, AB, and ON'. A paragraph describes the program as a Canadian, physician-led program. A large circular image shows a hand holding a smartphone displaying the app interface with sections like 'Fill with Fibre', 'Eat Smarter', 'Walk More Often', and 'Be Active Most Days'. Two smaller circular images show a person walking and a doctor with a patient.

LifestyleRx Diabetes All Programs For Providers Our Team Login Join Now

Take Control of Type 2 Diabetes

Lifestyle First, Improvement Inevitable, Remission Possible

Covered in BC, AB, and ON

Get the Lifestyle Prescription to reverse Type 2 Diabetes. Our Canadian, physician-led program guides you to safe and sustainable changes, allowing you to take control of your health.

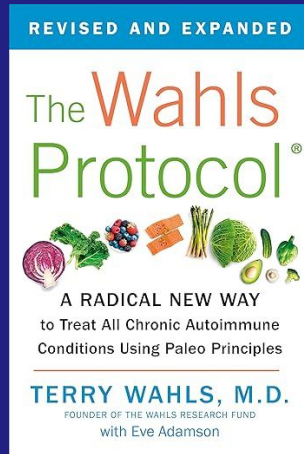
OUR PROGRAM

- Physician-Led**
You will work with a Canadian physician from your province to learn and adopt sustainable lifestyle changes.
- Safe & Supervised**
Lowering your blood sugar can result in some medications being reduced or eliminated. Our physicians work with you to make these changes when needed while keeping your
- 100% Virtual**
All group medical sessions and consultations with your team are conducted through video calls. No travel or sitting in waiting rooms is required.¹

<https://lifestylerrx.io/>

Autoimmune Disease Reversal

Dr. Terry Wahls reversed her MS and her principles apply to all autoimmune diseases.



YouTube: Minding Your Mitochondria

Principles for Autoimmune Disease Reversal

- 1) Re-establish Gut Integrity, Reducing Leaky Gut
 - Probiotic bacteria (their byproducts heal gut lining)
 - Beta carotene and healthy fats (i.e. butyric acid in ghee)
 - Collagen
 - Stress reduction
 - 2) Reduce Systemic Inflammation
 - 3) Ensure Adequate Stomach Acid
 - To prevent incomplete digestion and food polypeptides that are potentially antigenic from entering the bloodstream through a leaky gut
 - 4) Fuel Your Mitochondria
-

The Wahls Protocol:

- 1) Leafy Green Vegetables (3 cups/day)
 - i.e. bok choy, kale, chard, collard, parsley, etc.
- 2) Sulphur Containing Vegetables (3 cups/day)
 - i.e. cruciferous vegetables, the onion family, mushrooms
- 3) Colourful Fruits & Vegetables (3 cups/day)
 - i.e. avocado, broccoli, beets, red cabbage, blackberries, sweet potato, purple yam, carrots, lemon, turmeric, etc.
- 4) Grass-fed/wild caught meat & fish
- 5) Organ meats (liver, heart, kidney)
- 6) Probiotic foods
- 7) Seaweed

The way to reverse chronic disease... is to make the person healthy.

“Let food be thy medicine and medicine by thy food”

- Hippocrates

STAY HEALTHY



ONTARIO

Thank you.

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 @drmike.eyes.gut.nutrition

References:

- 1) Fung, J. (2018). *The Diabetes Code*. Greystone Books.
 - 2) Wahls, T. (2014, 2020). *The Wahls Protocol*. Avery.
 - 3) Perlmutter, D. (2015). *Brain Maker*. Little, Brown and Company.
 - 4) Kuriakose, R. K., & Braich, P. S. (2018). Dyslipidemia and its Association with Meibomian Gland Dysfunction: A Systematic Review. *Int Ophthalmol, Aug;38(4)*, 1809-1816.
 - 5) Akowuah, P. K., et al. (2023). Association between Dyslipidemia and Meibomian Gland Dysfunction: A Systematic Review and Meta-Analysis. *Optom Vis Sci, Mar 1;100(3)*, 211-217.
 - 6) Bu, J., et al. (2019). Hyperlipidemia induces meibomian gland dysfunction. *Ocul Surf, Oct;17(4)*, 777-786.
 - 7) Braich, P. S., et al. (2016). Dyslipidemia and its association with meibomian gland dysfunction. *Int Ophthalmol, Aug;36(4)*, 469-476.
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Recommended Reading:

- 1) The Diabetes Code - Dr. Jason Fung
 - 2) The Obesity Code - Dr. Jason Fung
 - 3) The Complete Guide To Fasting - Dr. Jason Fung
 - 4) The Wahls Protocol - Dr. Terry Wahls
 - 5) Cholesterol Clarity - Jimmy Moore with Eric C. Westman, MD
 - 6) Grain Brain - David Perlmutter, MD
 - 7) Brain Maker - David Perlmutter, MD
 - 8) How To Make Disease Disappear - Dr. Rangan Chatterjee
 - 9) The Allergy Solution - Leo Galland, MD
 - 10) Good Calories, Bad Calories - Gary Taubes
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