


Slide 2



Obesity equals Systemic Disease

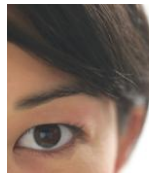
- Systemic Disease Equals Eye Disease
 - Diabetic Retinopathy
 - Cataracts
 - AMD
 - Dry Eye Syndrome

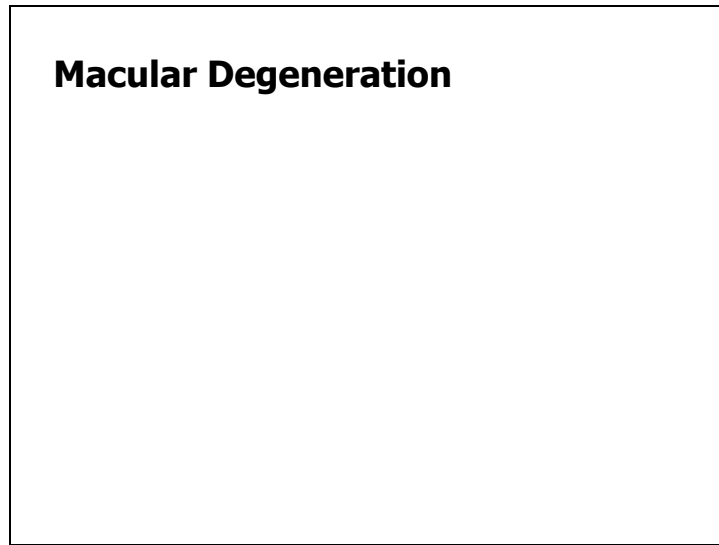


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Vision Related Diseases Affected by Nutrition


- Macular Degeneration
- Cataracts
- Diabetic Retinopathy
- Glaucoma
- Dry Eyes





Diabetic Retinopathy

- Caused by uncontrolled diabetes
- High levels of glucose in the blood damage the eye
- Nonproliferative most common



Medical Nutrition Therapy for Diabetes

- MNT for diabetes is key in preventing Diabetic Retinopathy.
- Encourage optometrist to refer to a Registered Dietitian
- Should be following a controlled carbohydrate diet, high in fiber for prevention.



Diet Can Protect Us



Good Glucose Control

- Diabetes Control and Complications Trial
- Compliance with meds plus lifestyle
- Eye disease in only 1/4 as many people
- Kidney disease in only 1/2 as many people
- Nerve damage in only 1/3 as many people
- Far fewer people who already had some complications got worse



**Sources and Recommended
Amounts of Key Nutrients for
Preventing/Treating Specific
Vision Related
Diseases/Conditions**

Omega-3's improve overall eye health

- Fish Oil
 - Supports ocular development
 - Improves circulation
 - Anti-inflammatory response
 - Protect from free radical damage



Studer M, et al. Effect of Different Antilipidemic Agents and Diets on Mortality, A Systematic Review. Arch Intern 2005;165:725-730

Durrington P, et al. An omega-3 polyunsaturated fatty acid concentrate administered for one year decreased triglycerides in simvastatin treated patients with coronary heart disease. Heart 2001; 85(5):544-548.

Styrofoam Test

Which form is best: **ethyl ester** or **re-esterified triglyceride**?



Fish Oil Quality Counts

- Choosing the right fish oil product for your patients is key
 - Burping/Fish smell due to rancid, poorly manufactured oil
 - Fish Oil can easily oxidize
 - Must process in an oxygen-free nitrogen environment
 - Molecular distillation – removes PCB's and mercury
 - Ask for third party testing results

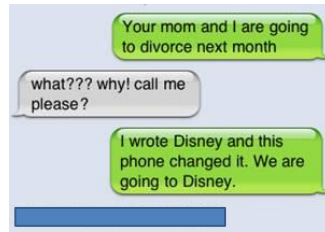
Fish Oil Quality Standards are Voluntary

- ◆ In the United States there are no required manufacturing standards.
- ◆ There are three voluntary guidelines for manufacturers to consider:
 - ◆ Norwegian Medicinal Standards
 - ◆ European Pharmacopoeia
 - ◆ Council of Responsible Nutrition



Standards are related to limits for heavy metals, dioxins, PCBs and measurements of freshness.

Some Things Get Lost in Translation




Lutein and Zeaxanthin

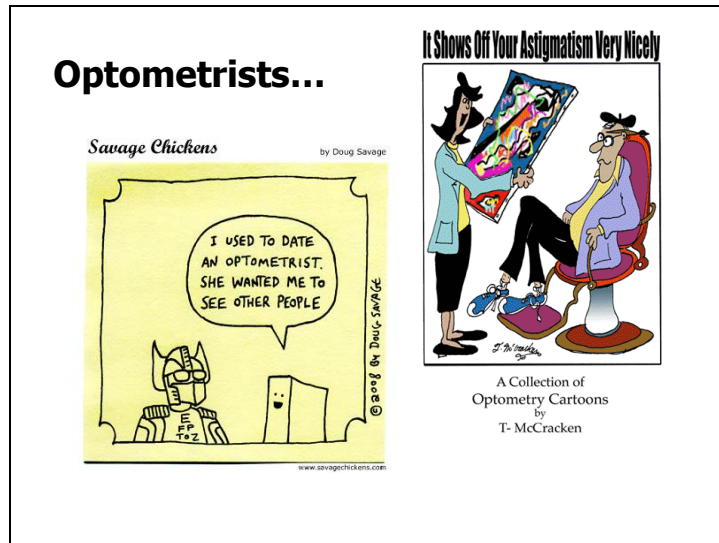
- Lutein and zeaxanthin are compounds called xanthophylls, which are carotenoids related to beta-carotene.
- Give vegetables like carrots their orange color
- Found in large amounts in the lens and retina of our eyes



How much Vitamin A is needed?




- The U.S. RDA for males age 11+ is 1,000 Retinol Equivalents (RE) = 6mg beta carotene
- RDA for females age 11+ is 800 RE.
- Smokers and drinkers should take in extra vitamin A
- AREDS 1: 15mg Vitamin A (as beta carotene)



Optometrists as a Referral Source

- Volunteer to speak at local or state optometry associations on nutrition and vision
- Ask your optometrist, if he/she currently recommends nutraceuticals or nutrition counseling
- Send letters to your current clients' optometrists
- Offer consulting to help Optometrists:
 - identify a high quality product
 - Great taste is key to patient compliance
 - Patient education material
 - Establish Protocols
 - Stock Product



**What you should tell your patients
- prevention starts today**

- We won't know the results of AREDS II for a number of years.
- In the meantime, it makes good sense to recommend to patients:
 - Eat a diet rich in fruits and vegetables for antioxidant nutrients, especially dark green leafy veggies which are good sources of lutein
 - Eat fish at least 2-3 times weekly for their omega-3 fats.
- Recommend supplements as needed

Precautions When Taking Eye Supplements



- Pregnant or nursing or are taking blood thinners (anti-coagulants)
- Dosage
- About Prevention-not a magic pill

Summary

- Omega-3 Fatty Acids: Protect against AMD, Cataracts. Treat DES. (Supplements)
- Lutein and Zeaxanthin: Protect against AMD, Cataracts. Treats light sensitivity. (diet; possibly supplements)
- Beta-Carotene (Vit A): Protect against AMD, Cataracts. (diet; no supplements for smokers)

Questions?

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