Is age-related macular degeneration preventable and treatable with ancestral dietary strategy?

Introduction: AMD is the leading cause of irreversible vision loss and blindness in people over the age of 65, in developed nations, estimated to affect 196 million people worldwide, by 2020. However, in the 19th century, there is ample evidence that AMD was a rare disorder. If AMD was once rare, the question is, why? In the field of nutrition, much evidence has correlated processed, nutrient-deficient diets, to the development of heart disease, cancers, type 2 diabetes, metabolic syndrome, obesity, and other chronic, degenerative and metabolic disorders. Could AMD be another of these diseases, induced by ‘Westernized’ diets? In this course, a hypothesis and extensive supportive evidence will be reviewed, correlating AMD development to nutrient-deficient, processed food consumption, individually, nationally, and globally.

Hypothesis: “The ‘Displacing Foods of Modern Commerce’ Are the Primary and Proximate Cause of AMD.”

A corollary to Hypothesis: Ancestral diets prevent and may treat AMD.

Background to the Hypothesis: Nutrition researchers since the 1930s have presented incontrovertible evidence linking processed, nutrient-deficient, Westernized diets, to ‘diseases of civilization,’ including heart disease, epithelial cancers, type 2 diabetes, metabolic syndrome, obesity, abnormal dentition, dental decay, and autoimmune disorders; all such diseases are either rare or virtually absent in hunter-gatherer populations, who consume native, traditional, nutrient-dense diets. Could AMD, likewise, follow processed foods?

Is AMD Prevalence Rising in Developed Nations? Globally? The Evidence is Presented

- Between 1851, when von Helmholtz published the design of the ophthalmoscope, and 1930, much evidence will be reviewed supporting the conclusion that AMD was a rare disorder in the US and UK.
- Beginning around 1930, evidence indicates AMD was rising in prevalence in the US and UK.
- By the 1970’s and beyond, AMD was at epidemic proportions, in the US and UK; many other developed nations comparable; AMD prevalence confirmed to rise many-fold in some nations, in recent decades.

Transition to Processed, Nutrient-Deficient Foods in the US – 1880 to Today – What Happened?

Four refined, nutrient-deficient, processed foods, in the form of refined, white flour, added sugars, vegetable oils, and trans fats, gradually supplanted nutrient-dense foods, such that, by 2009, 63% of the American diet was made up of refined, processed, nutrient-deficient foods. Chronic, degenerative and metabolic diseases, previously confirmed rare, gradually elevated to epidemic proportions.

AMD Prevalence Correlated with Proxy-Markers of Processed Food Consumption–Testing the Hypothesis

- Vegetable oils and added sugars, well-known proxy-markers of processed food consumption, were correlated to AMD prevalence, in 25 nations; examples include the U.S., Japan, New Zealand, Nigeria, and Barbados, where the correlation between increasing processed food and AMD prevalence is strong.
• In the Solomon Islands, Samoa, and Kiribati, Pacific Island nations where processed food consumption is low and native, traditional, non-Westernized diets continue to persist, AMD prevalence is rare.

Nutrient-Deficient Diets Produce Fat-Soluble Vitamin Deficiencies: The Evidence in AMD Studies
• Vitamin D: AMD risk is inversely correlated with vitamin D levels in multiple studies (high Vit D, low risk)
• Vitamin A: Delayed dark adaptation (DA) associated with increased AMD risk; Vitamin A improves DA
• Vitamin K2: Plausible biological mechanism presented; Warfarin, K2 antagonist, increases AMD risk.

CDC Food Consumption Data and Chronic, Degenerative Disease + Severe Vision Loss (~54% AMD) Maps
• Low vegetable, low fruit, high sugar-sweetened beverage consumption = high processed food diets
• U.S. CDC Geographic Data Maps – High processed food counties show positive correlations to heart disease, hypertension, stroke, type 2 diabetes, cancer deaths, obesity, and severe vision loss, by U.S. County (54% of severe vision loss = AMD). Less processed food = less severe vision loss, by county.

Hypothesis Review, Conclusions, Dietary Recommendations, and Future Research
• Is the hypothesis supported by current dietary evidence, biological mechanism, and AMD prevalence?
• Advising AMD patients on benefits of ancestral dietary strategy and avoidance of processed foods.
• Future research: Analyze isolated, traditional living populations; contrast to ‘Westernized’ cohorts.

Course Background Statement: For the first time, a revolutionary, comprehensive hypothesis for the etiology of AMD will be presented, with much supportive research. The implications for prevention and treatment of AMD are vast, potentially affecting millions.

Biography
Chris A Knobbe, MD is Associate Clinical Professor Emeritus, formerly of the University of Texas Southwestern Medical Center, in Dallas, Texas. Dr Knobbe is a general ophthalmologist turned full-time nutrition researcher, dedicating his life's work to the nutritional basis of age-related macular degeneration (AMD). Dr Knobbe is founder and president of Cure AMD Foundation, a nonprofit entity based in Boulder, Colorado, USA, with the goals of prevention and management of AMD through ancestral dietary strategy, advocacy, and scientific research.

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