

KEY STUDIES AND HOW TO USE IT

Study	What it found	What it means to patients	Type of docs or obstacles to use it with
<p>“Macular carotenoid supplementation in subjects with atypical spatial profiles of macular pigment”</p> <p>(Central Dip Study) Nolan, et al Experimental Eye Research, 2012</p>	<p>This 8-week study in subjects deficient of pigment at the very center of the fovea, found that supplementation with all three carotenoids in MacuHealth's unique 10:10:2 formulation not only increased MP centrally, removing the central dip, but increased macular pigment optical density (MPOD) across the entire spatial profile.</p> <p>Other formulations lacking MZ were not effective at rebuilding dip at the center of the macula.</p>	<p>It is known that anywhere from 12-20% of the population lacks the ability to convert retinal lutein into meso-zeaxanthin. There is no way to know if you are a patient with this atypical spatial profile.</p> <p>Other formulations are not effective at increasing levels of macular protective pigment in the very center of the fovea, where MZ tends to accumulate.</p> <p>Because MH contains all 3 carotenoids, patients exhibit 100% response rate in terms of gaining in macular pigment protection, not only in the center, but across the entire macula.</p>	<ul style="list-style-type: none"> • Belief that retinal L converts to provide (adequate) retinal MZ • Skeptical about MZ • Someone new to learning about MZ and needs to hear the reasons why MZ makes MH unique • Dr. using any competitive product
<p>“Studies on the singlet oxygen scavenging mechanism of human macular pigment”</p> <p>Li, et al Archives of Biochemistry & Biophysics, 2010</p>	<p>Meso-Zeaxanthin has the strongest antioxidant action of all three of the carotenoids present in macular pigment (L, M & Z)</p> <p>All three carotenoids combine to provide the most potent antioxidant effect.</p>	<p>MacuHealth is the only product with all three carotenoids in patented 10:10:2 formula. L + M + Z, are shown to have the greatest antioxidant effects in retinal tissue when combined.</p> <p>When fighting an oxidative disease, MH offers the most potent antioxidant defense, why would you choose anything else?</p>	<ul style="list-style-type: none"> • Dr. using any competitive product • Skeptical about MZ • Someone new to learning about MZ and needs to hear the reasons why MZ makes MH unique
<p>“Sustained supplementation and monitored response with differing carotenoid formulations in early age-related macular degeneration”</p>	<p>Most formulations rely on benefits found in AREDS studies. MH does not.</p> <p>This 3-year study in Early AMD patients, demonstrated improved macular pigment volume that directly correlated to improved contrast sensitivity and no</p>	<p>There is not only hope, but proven benefit of recommending MH in your patients diagnosed with Early AMD.</p> <p>Most patients hope not to lose vision after being diagnosed with AMD, in this study, patients saw significant improvements in vision (contrast</p>	<ul style="list-style-type: none"> • Doctors that are only supplementing patients with moderate to advanced-AMD • Doctors don't believe or understand why MH is different • Any doctor unaware of benefits of MH in Early AMD patients

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(MOST) Akuffo, et al Eye, 2015	significant progression of disease in early AMD patients.	sensitivity) and no significant progression of their disease over 3 years. No other product has shown this. Supplement early and supplement with MH.	<ul style="list-style-type: none"> • Retina specialists who tell your OD's patients that MH won't help them • To differentiate MH from other formulations
<p>“The Impact of Formulation on Lutein, Zeaxanthin, and meso-Zeaxanthin Bioavailability: A Randomised Double-Blind Placebo-Controlled Study: (COAST- Carotenoid-Omega Availability Study) Green-Gomez, et al Antioxidants, 2020</p>	<p>Carotenoids L,Z, & MZ in diacetate form, maintain stability without the formation of micro-crystals (which impede absorption).</p> <p>When placed in stabilizing matrix to prevent oxidation, the effects of this new formulation technology lead to greatly improved bioavailability as compared to previous formulation with same carotenoid quantities.</p> <p>The Micro-Micelle formulation produced an average 6x higher blood levels response and 1.5x greater uptake in the macula over a 6-month period.</p>	<p>The best just got better!</p> <p>Our Classic MH formulation has proven the ability to improve levels of macular protective pigment and visual performance in both healthy and patients with AMD.</p> <p>MH MM boosts bioavailability, meaning a more efficient and greater response at the target tissue.</p> <p>Data on visual performance with MM formula to come</p> <p>All formulations: MH, VE, MH Plus now with MM technology!</p>	<ul style="list-style-type: none"> • All doctors! • Current Customers: Reenforce confidence in our continued commitment to research & innovation to bring them formulations that deliver the best outcomes for all patients • Leads/Targets: The above is what differentiates MH as a company and our product line from the competition
<p>“Enrichment of Macular Pigment Enhances Contrast Sensitivity in Subjects Free of Retina Disease: Central Retinal Enrichment Supplementation Trials – Report 1” (CREST Normal) Nolan, et al IOVS, 2016</p>	<p>This randomized, placebo-controlled study found that after 1-year of supplementing with MH, healthy patients with baseline Visual Acuity of 20/20 and low levels of MPOD, demonstrated statistically significant and clinically meaningful improvements in contrast sensitivity.</p>	<p>Many “healthy” patients have low levels of MP and may be experiencing a decline in the quality of their vision that is not identified by a change in Visual Acuity.</p> <p>Reduced contrast sensitivity may sound like: “My vision is just not as sharp or as clear as it used to be, or I have trouble with glare or with seeing at night (while driving) lately.”</p> <p>MH has been shown to improve CS in this patient type in just one year's time</p>	<ul style="list-style-type: none"> • Current doctor to expand patient types (glare, night vision complaints, reduced quality of vision, sports/visual performance demands) • To differentiate MH from other formulations

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		and can help them achieve their best vision, reduce complaints.	
<p>“The Impact of Supplemental Antioxidants on Visual Function in Nonadvanced Age-Related Macular Degeneration : A Head-to-Head Randomized Clinical Trial” Akuffo, et al IOVS, 2017 (CREST AMD)</p>	<p>Supplementation with MH Plus in patients with non-advanced AMD over 2 years, resulted in not only in increased levels of MP, but also improvement in 75% of visual performance measures, including contrast sensitivity, glare disability, photostress recovery, and retinal straylight, etc.</p>	<p>For patients diagnosed with non-advanced macular degeneration, supplementation with MH Plus has shown to not only improve levels of macula protective pigment, but also to improve numerous aspects of visual performance over 2 years.</p> <p>Also this study compared MH Plus to a formulation without MZ (AREDS 2 with low zinc) and found it to be as effective.</p>	<ul style="list-style-type: none"> • Doctor who is skeptical about benefits of AREDS 2 or supplementation in general • Someone who is nervous or uncomfortable about using MH Plus vs. AREDS 2 • Someone interested in visual performance benefits of MH Plus in patients with non-advanced AMD
<p>“Lutein, Zeaxanthin & Meso-Zeaxanthin Supplementation Associated with Macular Pigment Optical Density” (a meta-analysis) Ma, et al Nutrients, 2016</p>	<p>A meta-analysis of 938 AMD patients and 836 healthy patients in 20 clinical trials conducted around the world, found a greater increase in MPOD in patients supplemented with Meso-Zeaxanthin than patients taking supplements without MZ, concluding that Meso-Zeaxanthin should be encouraged when providing supplementation to enrich MPOD.</p>	<p>We know the many benefits macular pigment provides to patients.</p> <p>If the goal is to improve levels of protective pigment across the entire macular for nourishment and protection in your healthy and AMD patients, a formula providing all the carotenoids, as only MacuHealth does, has been found best to achieve this.</p>	<ul style="list-style-type: none"> • EyePromise Dr. (pg 9) • Someone new to learning about MZ and needs to hear the reasons why MZ makes MH unique • Dr. using any competitive product
<p>“Macular Carotenoid Supplementation Improves Visual Performance, Sleep Quality, and Adverse Physical Symptoms in Those with High Screen Time Exposure” (MH Blue Light study) Stringham, et al</p>	<p>In 48 young healthy subjects with at least 6 daily hours of screen time, who supplemented with LMZ for 6 months, saw significant improvement in MPOD, overall sleep quality, headache frequency, eye strain, eye fatigue, and all visual performance measures versus placebo.</p>	<p>Patients concerned with negative effects of screen time can take MacuHealth in hopes of reducing the impact of blue light, based on this study.</p>	<ul style="list-style-type: none"> • Current doctor to expand patient types (blue light concerns, healthy, younger patients including children) • To differentiate MH from other formulations

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Foods, 2017			
<p>“Supplemental Retinal Carotenoids Enhance Memory in Healthy Individuals with Low Levels of Macular Pigment in A Randomized, Double-Blind, Placebo-Controlled Trial” Power, et al Journal of Alzheimer’s Disease, 2017</p>	<p>Same patient group as CREST Normal: 1-year study in healthy patients (no AD) and low MP levels supplementing with MacuHealth vs. placebo.</p> <p>Healthy patients (with no cognitive impairment) showed statistically significant improvements in memory compared to placebo after one year taking MacuHealth.</p>	<p>This study, in addition to Alzheimer’s study adds further benefit in terms of nourishing the brain, to those taking MacuHealth for ocular protection and visual performance benefits.</p> <p>Just as omegas have demonstrated systemic benefits which adds value to taking, the carotenoids, LM&Z; have demonstrated not only macular protective and visual performance improvement benefits, but also have demonstrate benefits for brain health.</p>	<ul style="list-style-type: none"> • This is not information to lead with or necessarily a selling benefit to non-MH customers. Optometrists do not treat AD • Best used with current MacuHealth customers to expand value and benefit that MH can bring to all patients taking the supplement for macular health & visual performance • Be careful not to over-sell study results and be accurate in your sharing of info