OCULAR SURFACE WELLNESS

A New Vision for Eye Care

PART 1 Wellness: The Opportunity

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Ocular Surface Wellness: A New Idea for Eye Care

In recent years, considerable attention has been given to the diagnosis and treatment of ocular surface disease states, but little has been said about preventing those conditions or preserving long-term good health in eyes that are already healthy. There is, however, a proactive approach within medicine that aims to foster both health maintenance and disease prevention. Sometimes referred to as the “wellness movement,” these health-promoting initiatives are gaining currency among both doctors and patients.

This paper is the first in a two-part series that looks at wellness in the context of ocular surface health. In this first installment of a two-part series, I will explore: (1) wellness and how it is approached in a variety of medical specialties; and (2) the opportunity that exists within eye care to proactively maintain ocular surface health and function. The next installment (coming next month) will look at environmental and other challenges to ocular surface health and obstacles facing the ocular surface wellness movement—and how they may be overcome.

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I. Wellness: A Concept Whose Time Has Come

Across medical specialties, the importance of maintaining wellness—preventing disease in addition to diagnosing and treating it—is increasingly recognized. As the population ages and the burden of chronic disease grows, many individuals are embracing lifestyle changes to help preserve long-term health and function; and health care professionals are working to identify and encourage effective primary, secondary, and tertiary preventive measures. What wellness means, and some of the factors influencing individuals and society to adopt wellness-oriented behaviors, will be discussed in this section.

The conventional medical model is based on the diagnosis and management of disease. With few exceptions—such as checkups, screenings, and vaccinations—patients interact with the medical system not to maintain health but to find relief from sickness or injury. The job of staying healthy typically falls to the individual.

According to the US Centers for Disease Control (CDC), chronic disease is the “public health challenge of the twenty-first century.”1 The effect of chronic disease on individuals is enormous in terms of reduced functionality and quality of life and leading causes of disability and death.1 Today in the US, more than 75% of the health care dollars go toward the management of patients with chronic diseases.1

A Public Issue

A growing body of research has linked the chronic disease epidemic with modifiable, lifestyle-related risk factors such as smoking, diet, activity levels, and excessive alcohol consumption.1 A prospective case-control study conducted across 52 countries between 1999 and 2003 (N = 29,972) revealed that the risk for acute myocardial infarction was 90% correlated with potentially modifiable risk factors, including, most importantly, smoking and serum lipid profiles.2 This work also suggested that assuming a healthy lifestyle—including daily consumption of fruits and vegetables, regular exercise, and avoiding smoking—could cut the risk for a heart attack by more than three-quarters.2

The Wellness Movement

In the Western world, the disease-based model of medicine is so entrenched that many find it hard to conceive of anything else. But what are known as “whole medical systems,” rooted in traditions such as Ayurveda and traditional Chinese medicine, have flourished for centuries in other parts of the world. These and newer holistic systems emphasize health maintenance through lifestyle practices and the early correction of minor imbalances. Healthy living and disease prevention are cornerstones of most such systems.

Interest in whole medical systems (and derivatives of such systems) represents only one aspect of a wider phenomenon emerging in the Western world. In response to growing awareness of the lifestyle-related aspects of disease, many are trading in a que sera, sera attitude to health for a more proactive approach.3,4

Defining Wellness

In one dictionary definition of health, “the condition of being well or free from disease,” health is understood only as the absence of disease.5 In contrast, the preamble of the World Health Organization’s constitution describes health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”6

The concept of wellness expands upon the WHO definition, taking into account multiple domains: body, mind, and environment. Appreciation of the mind-body connection (the power of thought and emotion to influence neurologic, immune, and hormonal functions) is implicit in the philosophy of wellness and increasingly demonstrated in the scientific literature.7

Wellness can mean more than simply being healthy; it also connotes active involvement on the part of the individual. Merriam-Webster defines wellness as the “quality or state of being in good health, especially as an actively sought goal.”8 While both health and wellness describe the same physiologic state, health is passive, a
state of being; in contrast, *wellness* is active—a state of being as well as a set of behaviors.

Wellness can encompass both self-care and professionally delivered care and can pertain to any stage of life, from prenatal to end-of-life. Wellness practices can be incorporated at any stage of health or disease and are often used in conjunction with other therapeutic approaches to help patients cope with illness.\(^9\)

**Prevention**

Central to wellness is the concept of disease prevention. *Prevention* can be used to describe a goal or intervention at any point along the health-disease spectrum. In epidemiologic terms, *primary prevention* refers to preventing a disease and reducing its incidence. Vaccination, maintaining healthy habits, and smoking cessation are examples of primary prevention.

*Secondary prevention* refers to the early detection of an existing disease process, often before symptoms become apparent. Screening practices such as annual physical examinations, mammography, and routine intraocular pressure measurement are examples of secondary preventive efforts.

*Tertiary prevention* is aimed at improving health outcomes after a condition is diagnosed and or symptoms have begun. Many therapeutic interventions could also be considered tertiary preventive measures.\(^10\)

Prevention can be directed toward a disease or injury with a known risk factor that is amenable to some type of intervention. Exercise has been shown to reduce risk for colon cancer among healthy men and women; thus, exercise is a primary preventive measure.\(^11\) Exercise has also been shown to reduce mortality among patients diagnosed with colon cancer, making it a worthwhile tertiary preventive measure as well.\(^12\)

**Changing Behavior**

Shifting from a reactive to a preventive model in health care requires the encouragement of behaviors that promote wellness. For new behaviors to be adopted, both individual and collective attitudes must change.

The barriers to change are many. Individuals are generally reluctant to adopt new behaviors without some sense of urgency and/or a perception that the new behavior has become normal within their society. In populations, behavior change parallels social norms, which are the implicit or explicit rules that govern appropriate behavior and determine what is considered normal, abnormal, or pathologic. Social norms apply to cultural trends (eg, fashion, public decorum) as well as risk-taking or health-related behaviors. For example, teenagers who perceive that heavy drinking is the norm among their peers are more likely to drink heavily. If they come to understand that their behavior is in excess of what is “normal,” they are more likely to change.

**Motivating Individuals**

Motivating people to change behavior requires effective and appropriately targeted messaging. Messages must be frequent and consistent, and they are most likely to be heeded when the source is perceived as credible, familiar, and attractive. Effective messaging can be positive (promising benefits for adopting the behavior), negative (featuring unwanted results if the behavior is ignored), and/or humorous.

The most effective intervention for creating large-scale behavior change is a social policy change. The prospect of being stopped and ticketed is a strong motivator for wearing a seat belt, even among those otherwise reluctant to comply.

For each individual, several factors control the drive to seek a preventive intervention: perceived susceptibility, severity, and benefit. Individuals must feel that they are personally at significant risk, and they must perceive the proposed intervention as effective and worth any associated trouble, discomfort, or cost.

But sensing that an intervention is important does not necessarily translate into behavior change. Individuals must also have a personal intent to change. Intention to change hinges on personal attitudes about the behavior—ie, whether one approves or disapproves—and the perception that the change is within the individual’s control.

In the case of wellness behaviors, clear communication from individual clinicians and their professional organizations can help bridge gaps between patients’ recognizing the importance of behaviors and their intent to change.

**Wellness Success: Dermatology**

Skin cancer is a prime candidate for prevention since the main risk factor—sun exposure—is known and reducing exposure (primary prevention) is readily achievable. Furthermore, early detection of skin cancers (secondary prevention) is associated with excellent clinical outcomes.\(^13\)

Primary prevention messaging around sun exposure began as early as 1932 in the US. Over the decades,
In addition to broader communications efforts, proactively engaging individual patients in conversations about their ocular surface health can help bring them into an active state of awareness and wellness that could lead to better patient outcomes.

REFERENCES


II. The Opportunity: Why Ocular Surface Wellness Matters

Maintaining a healthy ocular surface is essential to overall ocular health and well-being, but patients rarely present to an eye care professional asking how to keep their ocular surface healthy. Patients with healthy eyes generally have no cause to think about their ocular surface; but even patients with ocular surface symptoms may not recognize those symptoms as pointing to a treatable problem. Patients may, for example, believe that a certain level of ocular discomfort is normal at their age or an expectable consequence of contact lens wear. Helping the many patients who have unstated but correctible ocular surface issues represents a significant opportunity.

Ocular surface wellness has two critical aims: (1) protection of ocular surface health to prevent problems (primary prevention); and (2) the early detection and resolution of nascent ocular surface disease (secondary prevention). For eye care practitioners, shifting focus from disease management to wellness maintenance need not involve drastic changes; it does, however, require that doctors initiate and sustain a wellness conversation with their patients.

Ocular Surface Wellness and Vision

It is well known that vision quality impacts quality of life. Visual performance affects the academic and social lives of young people, the professional success of adults, and the vitality and mobility of the elderly. Care for the ocular surface is important because fluctuating vision and decrease in vision quality are common sequelae of tear film dysfunction and ocular surface disease. Any irregularity of the precorneal tear film—for example, if it breaks up between blinks—can affect the clarity of the retinal image, causing clinically significant optical disturbances. Patients with dry eye, particularly those with punctate epithelial keratopathy, show decreased performance on contrast sensitivity testing and score significantly lower on functional visual acuity testing than normal controls.

Despite normal visual acuity on conventional testing, patients with dry eye often complain of glare and fluctuating, blurry, or foggy vision. This translates to challenges with activities like reading, computer use, driving, and television viewing—indeed, dry eye may increase the difficulty of any activity that requires prolonged visual attention.

Evolving Challenges and Expectations

The digital screens that have become ubiquitous on our desks, on our laps, in our pockets, on restaurant and classroom walls, and embedded into an ever-increasing number of devices challenge the contemporary visual system in ways that previous generations never knew. Blink rate has been shown to slow while reading or using a computer or other digital display; and when one concentrates on a display mounted at or above eye level, a larger area of the interpalpebral surface is exposed to tear evaporation.

At the same time, the availability of products such as high-definition and 3D televisions, computers, game systems, phones, and tablets has the associated effect of elevating individuals’ visual expectations. As patients come to expect more from their eyes and their vision, eye care practitioners have an opening to provide added value: maximizing vision by promoting and maintaining ocular surface health.

Vision in Contact Lenses

A sizeable fraction of the population requires vision correction. For many, particularly those between childhood and early middle age, vision correction means contact lenses. In the US, more than 30 million people wear contact lenses, and half of them are between the ages of 25 and 44. As patients get older, we see a very significant drop in the number of contact lens wearers; decline begins in the late twenties (Figure 1). While there are many reasons to discontinue lens wear, survey after survey has found dryness and discomfort to be the...
primary motivators for contact lens dropout.

Ocular dryness isn’t the only reason for declining rates of lens wear as patients enter middle age. Presbyopia requires different optical solutions such as multifocal lenses, yet many patients are not provided this option by their eye care professional. However, even when presbyopic patients are given the opportunity to wear multifocal contact lenses, the tear film, as well as the optics, may play a role in contact lens success or failure. This is true for spectacle lenses as well, but in contact lens wear, the integrity of the tear film is further challenged by presence of the lens itself.

Of course, issues with tear film quality and contact lens performance are not limited to presbyopes: contact lens wearers at all ages may have problems with ocular dryness. And as younger patients are fit, it is critical to remain aware of the long-term importance of the tear film. Imagine a 12-year-old girl starting contact lens wear today. If she is like many wearers, she will want to continue wearing her lenses for life. Now imagine that she does not require cataract surgery until the age of 75. What can we do today to give her the best chance of having an ocular surface that will support comfortable contact lens wear 60+ years from now?

Tear Film, Vision, and Ocular Surgery

As noted, contact lens patients who experience dryness may be motivated to discontinue contact lens wear; and these patients often turn to refractive surgery. However, LASIK surgery can be a cause of ocular dryness, and the patients most at risk for post-LASIK dry eye are those with signs and symptoms of dryness prior to surgery.

Studies of the influence of preexisting dry eye on the safety and outcomes of keratorefractive procedures have produced conflicting data, but some conclusions can be drawn. For example, regression of effect for myopic LASIK has been found to occur in a greater proportion of patients with preexisting dry eye than in those without. And because tear film instability can affect the accuracy of wavefront, topographic, and keratometric measurements, dry eye can negatively affect preoperative biometry, which in turn can diminish refractive outcomes and patient satisfaction.

With respect to cataract surgery, patients’ refractive expectations have never been higher. As with keratorefractive surgery, tear film health is essential for accurate biometry and intraocular lens (IOL) power calculation. Patients who wish to reduce their dependence on spectacles by opting for a multifocal IOL will need a healthy tear film if the lens is to perform optimally. Aggressive pretreatment, as well as thorough counseling, prepares patients with ocular surface conditions to obtain the best possible surgical outcome.

Even for patients who are not surgical candidates, inconsistency and intermittent blurring on the manifest refraction should be a signal to look closely at the tear film and ocular surface. When discussion with the patient uncovers visual fluctuation and fatigue, ergonomic, environmental, or lifestyle adjustments can be recommended to mitigate these symptoms. A conversation about these changes not only equips patients to overcome their immediate discomfort, it also plants a seed, reminding them to think—and ask—about their ocular surface health in the future.

Uncovering Discomfort

One need not look far to find patients with ocular discomfort. In addition to the ever-increasing visual demands of modern life, the use of systemic or topical ophthalmic medications can cause ocular surface dryness. Keeping a comprehensive list of each patient’s medications can help identify these potential contributors to dryness.

Since contact lens wearers may not disclose their symptoms unless asked, it can help to ask patients to rank their comfort (from 1 to 10) on lens insertion and on removal; this can begin a conversation about how and when comfort changes over the course of a day. Contact lens discomfort is a signal that should prompt a more thorough ocular surface evaluation as well as a frank
discussion about lens care and lifestyle choices that can improve and sustain wearing comfort.

Before fitting even a young patient in contact lenses, a few questions about ocular comfort throughout the day and a complete ocular surface evaluation can help identify and address (or at least flag) any potential issues, optimize lens selection, and create a baseline against which to compare findings at future visits.

Ocular Surface Wellness and Appearance

Looking good is often as important to patients as feeling good. We know from medical specialties like dentistry and dermatology that a cosmetic approach to wellness counseling can be persuasive. One study of teenagers found that promoting sunscreen as a way to prevent skin cancer would be more persuasive than promoting sunscreen as a way to prevent skin cancer.16

Patients who wear makeup, especially contact lens wearers, can be helped by a brief discussion of ocular hygiene, beginning with the questions: Do you wear makeup daily? And how (or how frequently) do you remove eye makeup? Recent laboratory work has shown that exposure to cosmetic products—including mascara, eye makeup remover, and hand cream—can cause shape, wettability, and optical performance changes in silicone hydrogel contact lenses.17,18 The most significant optical changes were induced by mascara; and while cleaning with hydrogen peroxide was quite effective, it could not completely remove all cosmetic deposits from lenses.17,18

To minimize the contamination of beauty products, patients can be directed to insert contact lenses before applying eye makeup and to take out the lenses prior to removing eye makeup. With or without contact lens wearers, can be helped by a brief discussion of ocular hygiene, beginning with the questions: Do you wear makeup daily? And how (or how frequently) do you remove eye makeup? Recent laboratory work has shown that exposure to cosmetic products—including mascara, eye makeup remover, and hand cream—can cause shape, wettability, and optical performance changes in silicone hydrogel contact lenses.17,18 The most significant optical changes were induced by mascara; and while cleaning with hydrogen peroxide was quite effective, it could not completely remove all cosmetic deposits from lenses.17,18

To minimize the contamination of beauty products, patients can be directed to insert contact lenses before applying eye makeup and to take out the lenses prior to using an eye makeup remover. With or without a contact lens, ocular cosmetics can enter the tear film and cause irritation; particular attention should be paid to the tarsal conjunctiva and lid margins in patients who make heavy use of eye cosmetics.17,19

Conveying the “Why”

Ocular comfort and visual stability are hardly noticed until they are threatened. So what will motivate patients to take steps to maintain their ocular surface health before it is compromised? One approach is to educate patients that suboptimal ocular surface health can mean less comfortable contact lens wear. Poor ocular surface health can manifest as unwanted redness and epiphora. If the patient becomes a candidate for refractive or cataract surgery, untreated ocular surface disease can diminish postoperative vision and comfort.

Maintaining ocular surface wellness represents an opportunity for virtually every sighted individual to enjoy a better chance at a lifetime of clear, comfortable vision and healthy-looking eyes. An orientation toward ocular surface wellness can pay long-term dividends to the practice in the form of loyal patients who refer their friends and family members.

Most patients desire and take to heart their eye care provider’s advice, and in this lies an essential part of the ocular surface wellness opportunity. Listening to patients, offering clear advice and recommendations, and following up to gauge results can help patients stay motivated and proactive with their eye health.

REFERENCES