

Function vs. Fashion in Eyewear

Eyewear has been used since ancient times, both for practical function, sometimes as a fashion and often a blend of both aspects. Non corrective goggles have been found as a form of eye protection since before recorded history. Spectacles first appeared in written and illustrated history in the 13th century, appearing in both Italy and China. With the invention of magnifying lenses and corrective lenses, the first spectacle wearers were monks and other clerics involved in copying or transcribing religious texts. However, there are instances of spectacle-like devices worn just for fashion. The function of spectacles and their use as a fashion statement seem to intertwine throughout history.

What is function and what is fashion

The true function of spectacles is to correct vision with an apparatus consisting of a frame and lenses worn on the face. Function also includes the protection of the eyes, such as protection from the harms of ultraviolet light or protection of the eye and eye orbit from projectile damage. Spectacles, goggles and other vision apparatus serve these and many other practical functions.

One could argue that early spectacles were created for the function of viewing close up work. Most of the early spectacle frames were made of naturally occurring materials, such as bone, tortoise shell, ivory, and precious metals. In addition to being expensive, these materials were also heavy. Those early spectacles were quite heavy and used primarily for work but not for all day wear. The use of precious and semi-precious metals for frames would somewhat reduce the weight, but again, the expense made these type of frames available only for the learned or the wealthy. Yet, some must have been fashionable, as well, since all of those naturally occurring materials and metals can easily be carved or otherwise embellished with decorations.



In the early 20th century, the invention of plastic and plastic spectacle frames allowed for easy all day wearing of spectacles. One would think that plastic would lead to spectacles being seen as functional items only, but plastic actually enhanced the fashion possibilities.

According to the Vision Council 2015 VisionWatch research, 75 % of respondents who wore prescriptive eye wear were more concerned with the best vision possible. 84% consider eyeglasses as a medical necessity and at least 32% of the respondents had multiple pairs of eyeglasses in case they lose or break their primary pair. Not surprisingly more women than men surveyed were quite concerned with the style or fashion of the eyewear.¹

According to Wikipedia, fashion is defined as “a popular style or practice, especially in clothing, footwear, accessories, makeup, body piercing or furniture. Fashion is a distinctive and often habitual trend in the style in which a person dresses.” As will be seen in this course, fashion in eyeglasses has long matched the importance of function in many ways. In fact, 55% of the VisionWatch participants recognized that eyeglasses are more fashionable now than five years ago.

Although the VisionWatch study could be seen as relying on “either/or” answers, it still revealed that, given the choice, most patients wanted both function and fashion whenever possible. Accordingly, the three most important factors about the choice of spectacles are: durability (26.2%), style (18.6%) and the fit on the individual’s face (21.1%.) Durability and fit relate to function and style relates to fashion.

It is an idealistic goal to sell eye wear to patients the way shoes are sold: a pair for every color, need and style. Realistically, most patients try to satisfy all their needs with one or two pairs of spectacles. It is up to the optical professional to present a pair of eyeglasses that functions for their lifestyle and prescription yet provides fashion at the same time. This is sometimes a daunting task, and according to history, has always been a challenging balance.

Before written history: goggles, the earliest ocular protection

Well before spectacles were invented, humankind needed protection for the eyes. Protective eyewear has been found dating back to prehistoric times as the first instance of appliances created for wear over or in front of the eyes. Of note are protective goggles worn by native or indigenous peoples, such as the Inuit and Yupik peoples of Alaska and the Arctic.² These goggles would restrict the amount of direct and reflected sunlight from entering the eye to prevent corneal or retinal damage. Such goggles fit tightly against the face so that the only light allowed to enter was through the restricting slits. Sometimes soot was also applied to the inside of the goggle to reduce glare. Mostly these goggles were utilitarian, but decoration and ornamentation was an easy addition to anything created of wood, bone, leather, tusk, antler or shell.



Also using snow goggles were the Nenets people, known as the Samoyeds, an indigenous people living in the Russian Arctic. The example shown here is both quite functional and fashionable. Made of metal, it displays fashionable decoration.²



In the early 20th century, early horseless carriages, automobiles and airplanes travelled at higher velocities and in harsh environmental circumstances. Riders in these new vehicles were exposed to dust, wind, bug strikes and other foreign particles that could damage or irritate the eyes. Very quickly, goggles were worn out of the necessity for protection from all of these potentially harmful elements.

Currently, goggles are used in a variety of sports, such as skiing, swimming, bicycling, squash, etc. Many occupations require protective goggles. While these goggles are primarily protective, they can be quite fashionable with popular brand or designer names; and most can be fitted with corrective lenses.

Goggles are often worn as a fashion statement in certain subcultures, such as in today's cybergoth, steampunk and manga styles.



Corrective lenses and spectacles: historical highlights

The first hand held "reading stones" were crafted between 1000 and 1250 AD, and were simple magnifiers consisting of a spherical or semi spherical ground quartz crystal, or rudimentary glass. There are general references regarding reading assists recorded from approximately 1000 to the 14th century, but they do not specifically refer to an eyeglass design. These early references infer that a person needing an eyeglass would most likely be literate and experiencing presbyopia, so was most likely over 40 years of age.

Initially eyeglasses were extremely expensive and first used by clerics for transcribing religious texts; or for the wealthy, where eyeglasses were often seen as a status symbol of wealth and learning. In fact, some 14th century aristocrats wore spectacles without lenses simply to appear more learned and important. The earliest lenses were created with transparent stones and later with glass, both expensive commodities at the time. The earliest examples of eyeglasses were convex in nature, allowing for the reading and writing of fine text. Lenses to correct myopia, concave lenses, did not show up until the 15th century. Temples to keep the eyeglasses in place were first introduced in the 17th century.

Eyeglasses often indicated luxury and wealth. Embellishments such as adding ornaments, jewels and precious materials became the norm. There were even spectacles to accessorize the elaborate wigs of the 18th century known as "wig spectacles," often worn even when vision did not need correction. There is no definite year when eyeglasses became more about fashion than function, they have always been used for both purposes.

13th through the 16th Century

The initial wearers of spectacles were mathematicians, philosophers, clerics, monks and chemists. Friar Roger Bacon was imprisoned for heresy by writing about the merits of eyeglasses. Bacon confirmed the principle and use of the convex (magnifying) lens as originally described by Alhazen, an Arabian mathematician, optician and astronomer who lived from 965 to 1035 AD. Bacon's recognition of this assistance for weak eyes was considered heresy.

Eyeglasses at this time were held in place through the use of a scissor-like design called rivet spectacles, which sat directly on the nose and sometimes needed to be steadied with the hand.³ Another type of spectacle of this era, the pince-nez design, crimped onto the nose and sometimes had additional leather or fabric straps that fitted over the ears. Bow spectacles were very similar to the pince-nez design and also sat directly on the bridge of the nose.

Documentation of the use of eyeglasses was recorded on February 23, 1306, by Giordano da Rivalto in a sermon, in which he mentioned "it is not yet twenty years since there was found the art of making eyeglasses which make for good vision, one of the best arts and most necessary that the world has." Giordano coined the term "occiale" meaning eyeglasses in Italian. As early as April, 1300, the guild of glass blowers in Venice, Italy, had adopted the "discs for the eyes" or "vetri da occhi."

By the end of the 14th century, spectacles from Italy were being exported throughout Europe. But it was in the 15th century when Florence, Italy, became the most prestigious region for the manufacture of reliable and readily available spectacles. Dukes in Milan were known to order spectacles in the hundreds and give them away as gifts. A document from this time lists 52 spectacle makers and their locations in Florence between 1413 and 1562. Spectacles made from common materials could be purchased for as little as 1 copper coin, and gold or silver frames for approximately 85 copper coins. The increase in the availability and use of spectacles by the

common wearer coincides with the invention of the Gutenberg Press, which allowed this same populace access to readily produced books, starting with the Bible.



In 1490, Jerome Savonarola suggested attaching spectacles to a cap for hands-free use, which was both a functional and fashionable idea. It never caught on.

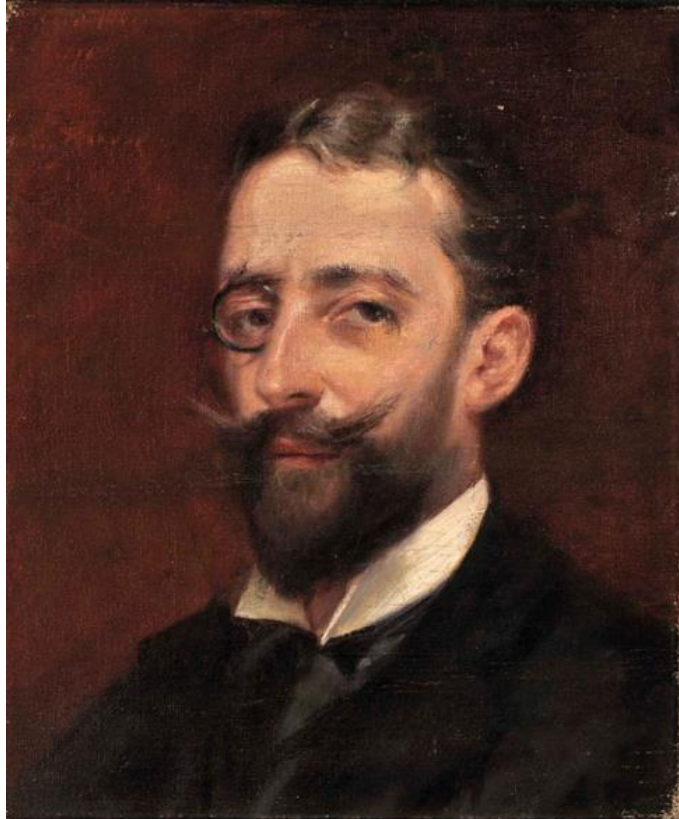
17th Century

LaFayette and Napoleon were both fond of scissors glasses. Some were quite ornate but it is unclear whether this was a fashion statement or to indicate wealth and power. Marie Antoinette used lorgnette glasses, which were scissors glasses with fashionable handles. It is said that she had quite an extensive collection. Lorgnettes remained popular into the Victorian era.



Gentlemen of this same period often used single vision monocles, also known as Les Encroyables in France. Monocles eventually became a status symbol and were eventually used with plano lenses to denote riches or importance. The monocle comes and goes throughout ocular history and prevails even today. More about this old fashioned, single vision device will be covered later in the

course.



Eyeglasses first reached America in 1620, via the Mayflower as a possession of passenger Peter Brown. In England a bit later, Samuel Pepys, who became famous when his diary was published posthumously, wore green tinted lenses created by John Turlington. He wrote on December 24, 1666 "I did buy me a pair of green spectacles, to see whether they will help my eyes." Nothing is mentioned in the diary about vision correction, rather, these glasses were used to alleviate asthenopia (generalized eye discomfort.) Further description indicates they were of the pince-nez or bow variety and might have been very similar to the spectacles below.⁴



18th Century

Lorgnettes continued to be popular, and had become quite ornate, often carried in various ways.

Spectacles, up to this time, were of the hand held variety, such as the aforementioned lorgnettes. These were not comfortable or convenient, especially when one was attempting to hold open a book. This led to the invention of a necessary feature of spectacles: temples. Temple spectacles are credited to London optician, Edward Scarlett. In 1730, Scarlett's trade card was imprinted with the words "Optician to His Majesty George II" and shows an illustration of spectacles with temples. These pressed on the skull, yet were of a straight design that would not interfere with wigs or long hair. The steady pressure on the sides of the head made these early temples uncomfortable. Later, a more comfortable design with a hinge in the middle came about. Temples attached by a hinge to the frame front were not seen until much later in history.



In 1747, David Ayscough invented the double hinge temple and began marketing them in 1750. Ayscough had the theory that lenses would create an "offensive glaring light, very painful and prejudicial to the eyes." So, he recommended the use of green and blue lenses.




**THE ORIGINAL SHOP
FOR
CROWN GLASS SPECTACLES
AYSCOUGH.**


**JAMES AYSCOUGH,
OPTICIAN.**

At the Great **GOLDEN SPECTACLES and QUADRANT,**
 N^o. 33, in *Ludgate-Street*, near **St. PAUL'S, LONDON,**
(The Original Shop for superior CROWN-GLASS SPECTACLES.)

MAKES and Sells (Wholesale and Retail) SPECTACLES and READING-GLASSES, either of *Brass, Peckies, Crown, White, Green, or Blue Glass*, ground after the truest Method, fit to rest and commodious Frames, some of which are so contrived as to press neither upon the Nose nor the Temples.

CONCAVES for Short-sighted Persons.

MICROSCOPES of various Kinds, particularly one of a new Construction, which is used either as a single one or a double one, for magnifying or equal Objects; the Magnifiers of which are adapted for viewing the smallest Objects in Nature, as also those of the Size of a common Flower. It may be used with the Solar Apparatus.

REFLECTING TELESCOPES of all Sizes.

REFRACTING TELESCOPES of various Lengths, some of which are peculiarly adapted to use at Sea, and are so contrived to be adjusted in such a Manner as to fit any Eye, whether short-sighted, or the reverse. To which also is added a Convenience for receiving or excluding more or less Light, according as the Brightness or Opacity of the Atmosphere requires. Which by several late Trials at Sea were found very advantageous. Also, a New-invented Achromatic Telescope, which magnify much more, than those made on the common Principle.

PRISMS for demonstrating the Theory of Light and Colours. *Scoliotic BALLS.*

CAMERA OSCURA'S for delineating Landscapes and Prospects, *Concave and Convex SPECULUMS,* *MAGIC-LANTERNS, OPERA-GLASSES, &c.*

OPTICAL MACHINES for viewing Perspective Pictures.

BAROMETERS, Diagonal, Standard, or Portable.

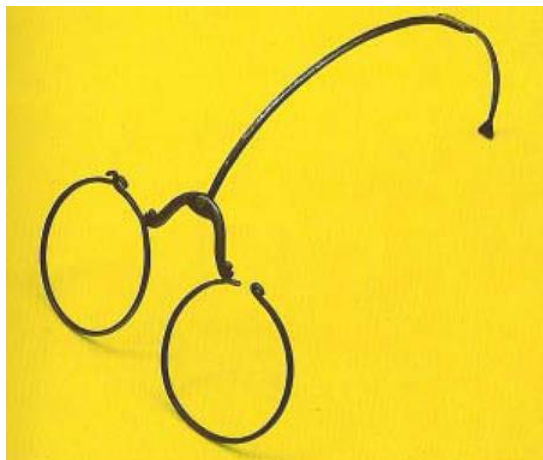
THERMOMETERS, whose Scales are adjusted on the Bore of their respective Tubes; *Hygrometers*, and *Hydrometers*; *Hydrostatical Balances*; *Halley's Quadrants*; *Globes*; *Cases of Drawing Instruments*; *Scales*; *Parallel Rulers*; *Sun-Dials*; *Rules*; *Pencils* with all other Sorts of **optical** Mathematical, or Philosophical Instruments.

Similar to the Ayscough glasses, a type of frame called "D-Spectacles" was patented by Richardson in 1797. It had side lenses hinged to the eye rims that could be swung into position over the main lenses and create a combined lens power. Fashionable and functional, D-spectacles were also adapted to prevent smoke, debris and sparks from entering the eye by using visor like side lenses. Called "Railway spectacles," they were usually were plano and decoratively fashionable.

In 1783 Addison Smith obtained the first spectacles patent. In 1797, Dudley Adams created "drop down spectacles" that rotated another set of lenses into position to offer different pupil distances. Bifocal lenses were formally credited to Benjamin Franklin. Frames were most often round and small allowing for Franklin's idea to work. In Franklin's own words, "I therefore had formerly two pairs of spectacles, which I shifted occasionally, as in travelling I sometimes read, and often wanted to regard the prospects. Finding this change troublesome, and not always sufficiently ready, I had the glasses cut and a half of each kind associated in the same circle. By this means, as I wear my own spectacles constantly, I have only to move my eyes up or down, as I want to see distinctly far or near, the proper glasses being always ready."⁷

The first American optical shop was established in 1799 in Philadelphia by John McAllister, Sr. A design attributed to McAllister had sliding temples with looped ends that helped hold the eyeglasses steady on the face while still accommodating manipulation of the glasses under the wigs popular to the fashion of the time. McAllister carried on as an optician into the 19th century.⁸

As a fashion dictate, another frame had a single piece of metal that would curve over the skull and was specifically created to be worn under the ornate, powdered wig of this time. These strange spectacles disappeared when the popularity of the wigs ceased.⁹



Dudley Adams of England employed a headband upon which the lenses could hang and move, and, according to the patent application "would not hurt the nose or the ears of the wearer." This same idea was reintroduced by Dr. Max Fairclough in the United States in the 1990's. Neither attempt at using this design was successful.¹⁰

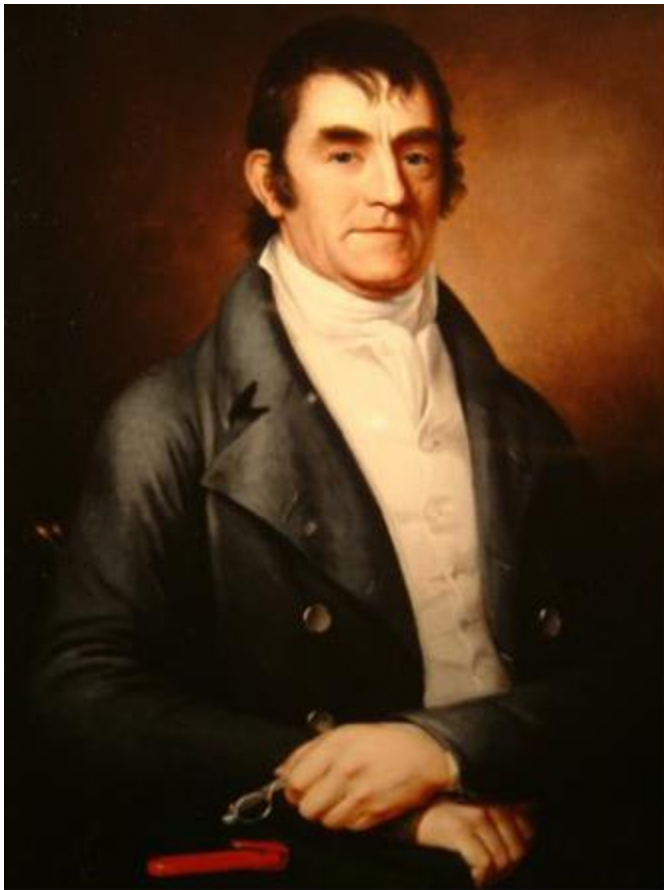
The demand for eyeglasses in the 18th century became greater than ever before due to the accessibility of daily newspapers and function was of utmost importance.

19th Century



John McAllister, Sr., had been importing eyeglass frames; however, the embargo enacted in the War of 1812 forced him find local sources. Not finding any locally crafted frames that met his exacting fashion standards, he began producing his own gold and silver frames in 1815.

McAllister and his son also began to import cylindrical lenses for the correction of astigmatism at this same time. For more than 173 years, the McAllister family smoothly intertwined functional and fashionable spectacles to become what is considered to be the true beginnings of opticianry in America.



In 1826, William Beecher founded an eyeglass manufacturing business in Southbridge, Massachusetts. This business underwent a variety of sales, mergers, partnerships and other changes until it was incorporated as the American Optical Company in 1869. The eventual competitor to the American Optical Company was a firm established by Jacob Bausch in 1853 in Rochester, New York. Bausch needed a capital investment of \$60, and for this small sum, a partnership was formed with his friend Henry Lomb. Bausch & Lomb became well known for hard rubber frames and later expanded their inventory to include microscopes, telescopes, binoculars and even photographic lenses.⁸

The monacle continued to be popular in Germany and Russia, but fell out of favor again after World War I, due to being identified with the defeated

German aristocracy. Monocles would see a mild resurgence in the 20th and 21st centuries.

In 1834, George Richard Elkington patented "An Improvement or improvements in the construction, making or manufacturing of spectacles (patent 6692)." This design creatively used pantoscopic angle to allow for distance and near viewing with better ease than the Franklin bifocal. The design was quite functional but not very fashionable, which might be the reason it never gained popularity.¹⁰

Pince-nez eyeglasses and monacles were strong influences in the 19th century, continuing right into the 20th century. However, by the 1880's, most spectacle wearers preferred temples that were extended and would curve over the ears to hold the eyeglasses in place. Curl temples similar to today's riding bow temples, were on display at an exhibition in 1851 and again advertised in the R&J Beck trade catalog in 1866.¹⁰



20th Century

More than ever before, eyeglasses became an item of fashion in the 20th century. "Cosmetic styling" was a popular phrase and fitting practice of the 1950's and 1960's. This idea held that eyewear could be both optically beneficial and yet provide a fashion harmony that complimented the face and manner of dress.



Sunglasses had become quite popular beginning in about the 1930's, especially the Ray-Ban aviators. With great military and sports function, aviators never went out of style, and had a rally when worn by Tom Cruise in "Top Gun." In fact, aviators are still quite popular today.



By the 1950's, the versatility of plastic frames brought about a real fashion revolution in eyewear. These eyeglasses are associated with "film rebels" and "rock and roll": cats eye glasses; Rayban Wayfarer; and horn rimmed glasses, especially those of a combination design. These same eyeglass styles have made a recent return due to "time period" movies and television shows, such as "Madmen." Both metal and plastic frames of various designs are seen in wide variety throughout this century.



The 1960's brought a crossover to women's fashion to include bold or thick frames and eyebrow bars, previously only seen with men's eyewear.



The "mod" craze, a fashion in England from the mid to late 1960's, carried over into eyewear. From "granny" glasses, to outsized and boldly colored spectacles to the truly strange, every "mod" fashion designer wanted their spectacles to be the wildest.

Leaders: eyeglasses that make a statement

Many United States presidents and world leaders use eyeglasses. Some did not want to be portrayed in them; yet many others used spectacles as a trademark. Here we highlight just a few:

George Washington purchased a pair of imported spectacles with engraved silver frames for, at that time, the exorbitant amount of \$75. This was a huge fashion statement for a functional item.¹²

Patriot Patrick Henry wears spectacles in a portrait by Asa Powers, creating a fashion statement. James Wilson, a signer of the Declaration of Independence wore spectacles that had short temples and were held in place by a cord tied around the back of his head.¹²

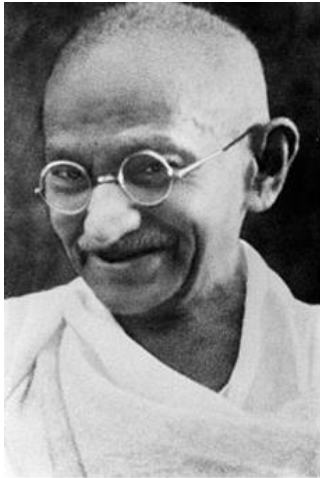
The Optical Heritage Museum in Massachusetts showcases many pairs of eyeglasses of famous leaders, including these worn by John Quincy Adams.¹²



While George Washington purchased extremely extravagant eyewear, Abraham Lincoln bought his first eyeglasses in the 1860's for the economical price of 37 cents. Perhaps not the same eyeglasses, pictured here are glasses auctioned in June of 2013, by the Auction House Nate D. Sanders. The affidavit verifies use by Lincoln.



Theodore Roosevelt routinely wore pince-nez eyeglasses. President Grover Cleveland also wore pince-nez glasses for working. Suffragette Susan B. Anthony was often photographed wearing eyeglasses.¹³



Mahatma Ghandi was most frequently seen and photographed wearing small, round, metal spectacles. He purchased his first spectacles in England in the 1890's. This functional design allows for easy re-use when a new prescription is needed. Additionally, it was a sturdy and long lasting choice for a humble man.¹⁵

For reduced weight and convenience, Harry Truman wore several slightly different types of small, round glasses while serving as president. They appear quite functional, yet have a certain fashion sense.



General Douglas MacArthur often wore RayBan Aviators, as was popular with many military leaders. General George Patton was frequently photographed with a pair of military binoculars.



President John F. Kennedy wore many styles of reading glasses and was photographed numerous times in fashionable Ray-Ban Wayfarers.



President Lyndon B. Johnson wore many styles of eyeglasses throughout his lifetime, but most often was photographed in combination spectacles. His Vice President Hubert Humphrey wore combination frames for his reading glasses.



President Ronald Reagan preferred wearing contact lenses in public, a practice started when he was still a leading actor. President Reagan was always fashion conscious, and when he needed reading glasses he preferred half-eyes.



Beginning in the late 1950's, Queen Elizabeth of England is seen in many of the latest styles of eyeglasses.



While in the White House, President Bill Clinton was rarely seen with eyeglasses. Today, he can be seen sporting very inexpensive, functional readers.



While serving as Secretary of State, Hillary Clinton used a pair of horn rimmed spectacles to accommodate a corrective Fresnel prism needed to correct diplopia after suffering a concussion.

Remember my eyewear, remember me

Needless to say, an entire report could be written about the spectacles and sunglasses worn by celebrities, actors, actresses and other famous persons. Here we will highlight a few.

Eyeglasses can almost disappear or make a bold fashion statement. Some famous actors and politicians used eyeglasses as trademarks, such as Barry Goldwater and Drew Carey. In fact, Drew Carey was so well known for his trademark horn rimmed eyeglasses, that after having LASIK surgery, he had plano lenses inserted into all of his frames, and can still be seen wearing eyeglasses today.



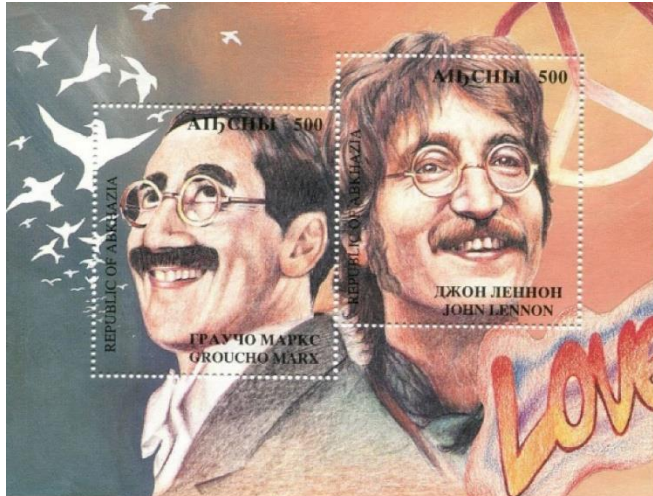
Another bold eyeglass wearer, Elton John became well known for his outlandish eyewear and was rarely seen in the same pair of spectacles twice. At one time he owned over 250,000 pairs.



This whimsical foreign stamp portrays Marx and Lennon with similar glasses to one another, but this is Groucho Marx and John Lennon in their "round" statement glasses. Actually, Groucho chose round glasses, not so much as a statement, but for the

fact that his thick lenses looked better in a small, round frame.

When John Lennon played a character in "How I Won the War" his character wore the small, round "tea shade" glasses that eventually came to be known as "John Lennon" glasses. He decided to continue wearing them after the movie, as he had stopped using contact lenses. Recent generations look upon this same round eyeglass style as "Harry Potter" glasses.



Although never meant to be a fashion statement, over the years Groucho Marx has been honored with an odd fashion still popular. By adding fake noses and mustaches, "Groucho glasses" are sold by novelty and costume shops around the world.



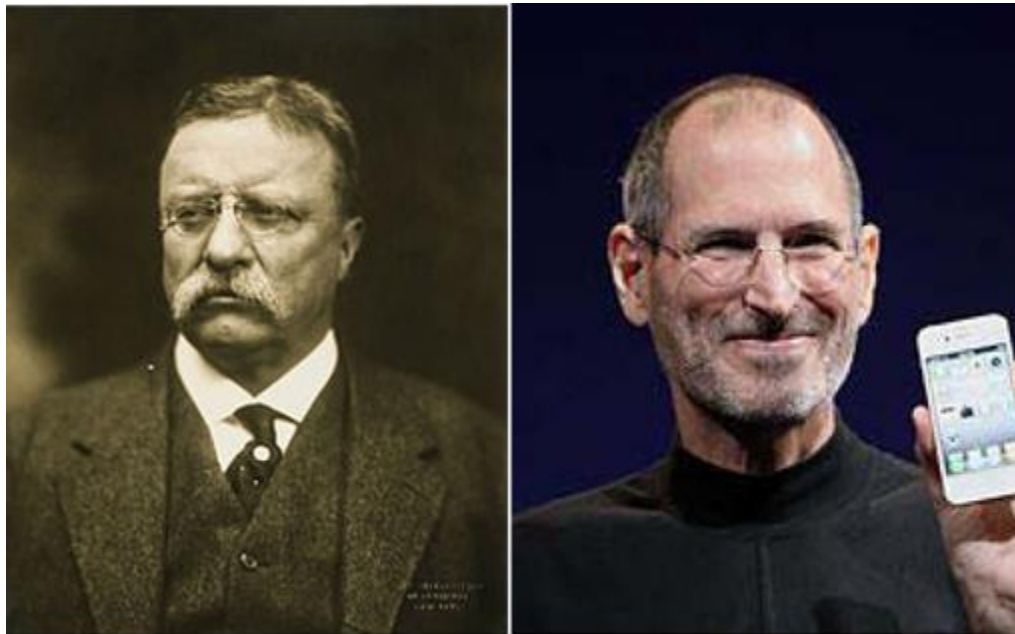
Another public figure who made a bold statement, even while trying to use eyeglasses and sunglasses to hide her identity, was Jacqueline Kennedy Onassis. In fact, Wikipedia has a separate entry for "Jackie O Style glasses."¹⁶



Remember me as a minimalist

Some spectacle wearers prefer to have their eyewear almost disappear. Rimless and semi-rimless spectacles are the go-to frame for patients desiring a minimalist or a no-frame look. Often the frame is so subtle that the observer must be quite close to notice the eyeglasses. Some consider this type of eyewear to be utilitarian or not fashionable. But some people have actually taken the subtle look and made it their own fashion statement.

Two famous rimless eyeglass wearers, who preferred this minimalist look, were President Teddy Roosevelt and Steve Jobs.



Reading glasses

Many patients remember their parents or grandparents with reading glasses perched on the nose. This out of date impression of reading glasses is being replaced by fashionable choices. Once upon a time, ready readers were a quick and cheap answer for the patient who did not care to visit an eye care professional for the simple correction of presbyopia. Today, reading glasses are well accepted for their function and also as a fashion accessory.

The ready availability of economical frames and mass produced glass and plastic lenses has led to ready readers becoming available in virtually every drug store and department store. Most displays have a "find your strength" chart to guide the consumer to their correct diopter power for the correction of presbyopia.

Ready readers are created by using a common pupillary distance that will work for 90 to 95% of wearers without inducing prism.

However, some patients can experience headaches and discomfort if they are outside of this norm, or who use the higher plus powers approaching +3.00 diopters.

The optical industry has risen to the challenge by creating fashionable, designer brand reading glasses, with celebrities such as Brooke Shields promoting them. In order to be certain that patients receive true optical quality lenses in a fashionable frame, almost every medical and optical dispensary carries at least one line of ready readers for easy purchase.

	FOCUS	DIOPTER	
If this line is difficult to read, use	32	+1.25	WEAKER
If this line is difficult to read, use	26	+1.50	
If this line is difficult to read, use	22	+1.75	
If this line is difficult to read, use	20	+2.00	
If this line is difficult to read, use	18	+2.25	
If this line is difficult to read, use	16	+2.50	STRONGER
If this line is difficult to read, use	14	+2.75	
If this line is difficult to read, use	12	+3.00	
If this line is difficult to read, use	10	+3.50	

26

Sunglasses: ultimate function with fashion

Optical professionals know that the essential function of sunglasses is to protect the wearer from harmful UV rays. 71.4% of the VisionWatch respondents use sunglasses for protection against the glare of the sun but only about 50% wore sunglasses to protect their eyes from the danger of UV rays. About 19.6% wore plano sunglasses primarily for fashion.

As early as the mid to late 1700's, green tinted lenses were used by the inhabitants of Venice to reduce the reflection of the sun on the canal water. This became quite fashionable when an Italian actor of the time wore these green spectacles and his fans wanted to copy his fashion. Thus, fans wearing the sunglasses that their favorite celebrity wears is not a modern concept.

Celebrities often use sunglasses to avoid recognition, yet others wear flamboyant or high-fashion designer sunglasses to draw attention to their style. Some celebrities serve as brand ambassadors for the sunglass company, providing paid endorsements and photos to promote a specific company or style.

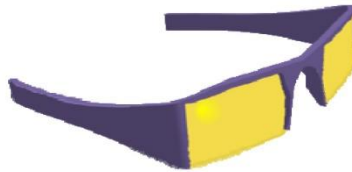


Sun wear has always been synonymous with fashion from the original RayBan aviators to today's vast array of sun fashions. In addition to being fashionable, the tint of the lenses can functionally restrict or eliminate parts of the visible spectrum to enhance functional vision, such as Blue-blockers that enhance outlines and reduce fogginess.

Wraparound sunglasses give the maximum protection from UV rays and make a fashion statement in various ways, from the shape to the ornamentation.

Actually invented in the early 20th century, clip on sunglasses were mostly seen as functional, as their design and the extra eyebrow bar could detract from the design of the spectacle. However, in recent years, the clip on became much more fashionable and could sometimes add to the overall design of the eyewear. Always cheaper and more convenient than a complete additional pair of eyeglasses, sun clips remain a popular choice.

A fit-over frame for sun protection was all about function until just recently. The manufacturers of these devices have streamlined the designs to look more like plano, fashion sunglasses while still fitting over prescriptive spectacles. One brand has recently developed a line with Swarovski® crystals to enhance the style.



It's a material thing

Tortoise shell

Tortoise shell was originally created from the actual shell of a tortoise. It was used from ancient times until the inhumane sourcing was banned in the 1970s. Among the many uses were: combs, frames, furniture inlays, and spectacle frames, just to name a few items. Expensive and durable, the mottled color and variation became quite popular. The Chinese considered the tortoise to be a sacred animal, so glasses made of the shell were meant to bring good fortune. The Spanish of the 18th century considered tortoise shell to be of extremely high fashion, and at one time all the ladies of Queen Maria Luisa's court wore tortoise shell frames along with tortoise shell hair adornments. Today, tortoise shell frames are made from simulated plastic or painted on as an overlay for a metal frame.

Horn rimmed: a material that became a style

At one time, horn rimmed glasses were actually made from the horn of an animal, so were most often dark brown or black. Horn rimmed glasses have been especially popular in the 20th century, notably in the 1920s-1930s and again in the 1950s-1960s. Harold Lloyd began wearing a round pair of horn rimmed glasses in his films. Today horn rimmed glasses are a popular retro

fashion, possibly as a reaction to television shows such as "Mad Men" and "Heroes." Some famous horn rimmed wearers were: Harold Lloyd, Buddy Holly, Steve Allen and Jack Nicholson, among many others. Even Superman wore horn rimmed glasses when disguised as Clark Kent.



Metal frames

Metals were sometimes the only choice in ophthalmic frames, depending on where and when the patient lived. Available in almost every type of metal at some point in time, wire rim glasses are generally light in weight yet very sturdy in construction. For functionality, metal frames were originally created small and round due to the relative cost. Metal frames can be found today in virtually any shape and size. Nickel came into popular use in the 1920's, followed by aluminum in the 1960's and 70's, and titanium in the late 20th century. Gold and silver have always been "go

to" choices, if rather expensive. While silver can be used to create an entire frame, gold is usually too soft and malleable to retain a good shape; so most gold frames are gold plated or gold filled. Metal frames have also served as a fashion statement throughout the ages.

Plastic: fashionably functional

Plastic became a choice for ophthalmic frames in approximately the mid-1900's. Xylonite (spelled with an "x") was the name for cellulose nitrate. This early plastic was literally too hot to handle as a material. Although this material was hard and durable in most other ways, it was highly flammable. Factory fires and fires related to the individual use of cellulose nitrate frames eventually caused the material to be banished. Since many young persons are re-purposing frames and fashions from bygone eras, the optician must be very wary of working with any frame that might be suspected to contain cellulose nitrate. Additionally, if a frame is found to contain cellulose nitrate, it is our duty to warn of the danger and discourage the use of such a frame by a patient. There are a few states that will require you to confiscate glasses containing cellulose nitrate, and then dispose of them according to that state's hazardous materials laws.

Although available as a material since 1891, cellulose acetate or zylonite (spelled with a "z") came into use as a spectacle frame material in the early 1900's. Zylonite frames were listed for sale in the April 1, 1916 Bausch and Lomb catalog. Both functional and fashionable, zyl is still the most popular plastic ophthalmic frame material in use today. According to the second edition of Webster's New International Dictionary in 1959, zylonite is given as the original name for celluloid.

Other materials that are available today related to plastic are optyl, nylon, rubber and rubberized materials.

A recent trend has shown a return to using natural materials such as bone and wood for custom designed frames. These specialty, high-end materials are always well represented at optical trade gatherings, such as Vision Expo East and West.

Lifestyles

It's a man thing, it's a woman thing

Advertisement firms sometimes use this general philosophy: men look for value and women look for brand name. Today's eyewear consumer will look for function and value, yet want the fashion of a brand name or certain design. In eyewear, value could be determined by any combination of price, brand, design, materials and overall quality. Branding and fashion relies on name or design recognition. While the designer should consult with a professional regarding the viability of a spectacle design, this does not always happen. This can mean a design that is nearly impossible to edge, adjust or keep in alignment. In women's designs, there are sometimes sharp angles that make lens edging and insertion extremely difficult. In oversize frames, decentration and the availability of a lens blank of sufficient size can become problematic. Fashionable eye wear must always have correct function.

It's a generational thing

Your grandparents glasses gave way to new styles and now the millennial generation generally desires a blend of function with fashion for the ultimate in eyewear. Yet that millennial “ultimate” is like a moving target, everything new is out of date rapidly and sometimes everything old is new again. How can the average dispensary keep pace with the generations that expect “immediate” results? Some methods are to keep a diverse inventory that can be changed quickly; subscribing to a purchasing group with overnight or same day delivery of frames not in stock; and allying with other independent dispensaries, among other techniques. Another option to be covered later is 3-D printing.

Regardless of the generation, many patients will be active in sports and fitness, from the serious athlete to that patient participating in a “fun run” for the first time. Outdoor activities will usually indicate the need for good sunglasses and that might mean prescriptive lenses. Some activities, such as paintball and color runs, necessitate goggles or shields that give wider protection. Whatever the activity or lifestyle, many patients will be keenly aware of sports gear and clothing sponsors they have seen, so they may want the matching or featured fashion eyewear.

Other optical choices

It isn't always spectacles: some unusual optical inventions over time have come about as a result of need, while others were invented strictly for fashion. Let's take a look at a few of the more unusual optical devices.

Spy Glasses, jealousy glasses, opera glasses, binoculars

In the 18th and 19th centuries a primary source of entertainment was live theatre. The first attempts at bringing the play or opera closer to the viewer were with the use of small, hand-held monocular spyglasses. These were either made with a fixed tube length or a telescoping tube, later to be called a telescope.



In 1823, Johann Friedrich Voigtlander of Vienna, fixed two frames together with identical ivory and gilt barrels, each having the ability to be adjusted via the draw length. In 1825, Lemiére of Paris placed a focusing wheel between the two barrels and joined the eyepieces together with a third bridge allowing the two eyepieces to give better single vision. Opera glasses became quite popular and fashionable, using ornate decorations, mother of pearl and even precious and semi-precious metals or gems for extra importance. Often the quality of the optical eyepiece took a backseat to the external appearance, with fashion outweighing function. Sometimes the opera glasses were attached to a lorgnette style handle, which could also be quite ornate.¹⁸

A spy glass, used to "spy" on a distant subject, or opera glasses and binoculars were a popular way to check out the audience as well as the stage. For those

participants wishing to be more discreet, "jealousy" glasses were invented. Designed to look like a simple spyglass, either internal mirrors or prisms were used so that the viewer was actually seeing what was off to the side instead of straight ahead.



Even more creatively disguised, jealousy glasses could be incorporated into many fashion accessories, such as a ladies fan, proving to be quite functional as well as a vanity fashion statement.



It's downright odd

Victorian Odd

If you couldn't decide which optical device to use, or needed to carry too many other items around with you, a Victorian inventor had just the thing for you. This colored print, by J. Netherclift in 1830, shows two men with top hats featuring drop-down lenses and spectacles. As the inscription says: 'LIVING MADE EASY. REVOLVING HAT which by a slight touch presents its wearer with, Eye-Glass, Cegar, Scent-Box, spectacles, Hearing-Trumpet, &c &c. without the intolerable trouble of holding them'. ¹⁰



20th Century Odd

There are a lot of innovations and styles that could be considered odd in the 20th century. Just one example was ColourChange, a flash in the pan frame choice in the 1980's. The eyewear had tubular channels embedded into the eye wires, and plastic cords of different colors that could be inserted to create new color combinations. Here is the author's own pair, with a red and green Christmas theme, plus a sample of the other colored wires. The special case had places for the frame and the colored wires. Was it strictly a fashion statement or did it also fulfill that functional need for one pair of eyeglasses to do it all? Whatever the answer to that question, it did not last very long.



Today, tomorrow and beyond

From the late 1990's right through to today, the unprecedented variety of thousands of styles, brands, materials, designs and features can leave the optician dizzy. Worse still, patients are exposed to this same overwhelming amount of choices and can be confounded or confused. Access to online services and other non-traditional resources for eyewear has created an industry wide challenge. Additionally, the truly fashion minded patient will walk away from your dispensary of hundreds of choices in search for one specific frame they saw, regardless of whether that frame is suitable to their prescription or face.

Beauty expert, Bobbi Brown, sees spectacles as a natural extension of makeup. Acknowledging the need to be beautiful at every age, the 'millennial generation demands brands that offer maximum convenience at the lowest cost.' ¹⁹

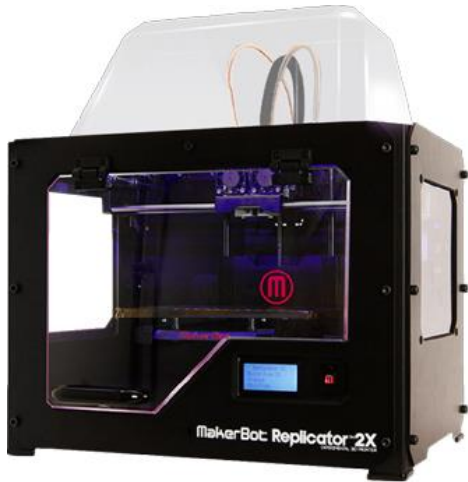
Adlens is yet another choice that so far is primarily functional and has begun to address fashion needs. This frame has lenses that are adjustable from - 6.00 to +3.00. Adlens is advertised as 'instant eyewear.' This new spectacle can be purchased outside of the optical professional's purview, and can be adjusted by the patient as his or her vision changes. Some optical professionals are using the versatility of these spectacles to be sold as handy "second pairs" or as "fill in" glasses that will serve the patient who is waiting for lost or broken spectacles to be remade. As this type of ready to wear spectacle becomes more fashionable and when it is adapted for the astigmat, it will likely continue to be good choice in some instances and unfavorable in others.

Computer Assisted Design

Digital design is already the standard of the industry, giving many manufacturers the ability to bring together diverse elements that were once difficult to combine. Computer assisted design (CAD) programs for ophthalmic frames are used industry wide.

Materials in the research stage will expand the idea of optical practicality. Certainly these new materials will expand the fashion aspect, too. In development are materials that provide new, more vibrant colors; new textures; metals with higher strength for even thinner eye wires; plastics that are more resilient and less allergenic; and materials that easily lend themselves to create eyewear with interchangeable parts so that the customer can mix and match looks at will. Adaptations and improvements to ultra-strong carbon fiber, titanium, processed wood and even leather are taking classic looks into the future.

3d printing: your office as designer and manufacturer



With 3-D printing, your office could truly offer one of a kind spectacles, including a large choice of materials, colors and personalized features; every frame to be designed for each individual patient. In addition, you would not have to carry a huge physical inventory, and the frames could be ready in approximately eight hours. The patient could make design choices in the morning and pick up their eyewear in the afternoon. With a Computer Assisted Device (CAD) and a modestly priced 3D printer, the norm will be to purchase the newest eye wear using only computer patterns. The displays will have the ability to integrate an actual picture taken of the patient appearing to "wear" the spectacles to be built. This technology is already being used by companies such as Sneaking Duck of Australia, Kobrin sunglasses

and other companies. Soon your office could reduce the need for physical inventory in favor of computerized inventory.

Creative patients have even resurrected their own eyeglasses by using a home-based 3-d printer to create a frame around their salvaged, but useable, lenses.

3-D technology for eyewear depends on capable computer based designers working with optically trained professionals to ensure that the eyewear looks great and is fully functional.²¹

There may come a time when an optical professional will be able to show spectacle frames to a patient from an online catalog, immediately pay an access fee to download the pattern from the manufacturer and then create the frame in a 3-D printer for same day service.



The ability to instantly customize eye wear may help the independent optician to more capably combat online services. Patients find monetary value and expedience on the internet. 3-D printing will keep the patient satisfied by offering the best price and a quicker turn around right in your office. Additionally, this burgeoning technology will satisfy consumers who desire one-of-a-kind fashion eyeglasses to compliment their own self-expression.

Before you go: a case for fashion

Eyeglass cases share a history with spectacles. Originally eyeglass cases were highly ornamental, often hand crafted and lasting the user for many decades since the size and design of the glasses did not change very much. Then came a time when eyeglass cases seemed to be only functional, often imprinted with business information as a promotional tool. Both soft sided and hard shell cases were purchased cheaply and distributed with every pair of glasses to protect the eyewear.

With the advent of fashion designed eyewear, the matching case is now seen as a fashion statement and even a status symbol. Some famous handbag and clothing manufacturers have designed and marketed cases as fashion accessories and sold them independently of eyewear. Eyeglass cases are a new collectors passion.





Summary

It appears that the function of eyeglasses and the sheer fashion aspects have always worked together to present the patient with the best possible lifestyle choices. Although the fashion aspect of eye wear literally boomed in the 20th century, and brand names and designers of eyewear continue to multiply today, the overall function of eyeglasses is equally important for any eye wear to gain popularity. For those optical professionals attending trade shows routinely to keep up on the latest in eye wear, brands and ideas have come and gone rapidly. However, the truly innovative eyeglass designs that are both functional and stylish remain with us for decades, and even, centuries.

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Test Questions

1) According to the report, VisionWatch, what percentage of the respondents see eyewear as a medical necessity?

- a) 32%
- b) 50%
- c) 84%
- d) 100%

2) What type of eyewear was most likely used when flying airplanes in the early 1900's?

- a) Polarized lenses
- b) Goggles
- c) Ray-Bans
- d) Prescriptive

3) What were the consequences when Roger Bacon wrote about the merits of eyeglasses?

- a) More jewelers began producing eyeglasses
- b) His vision became worse
- c) He got tired of holding them for use
- d) He was imprisoned

4) What is a reading stone?

- a) A special frame material
- b) A rudimentary glass or crystal magnifier
- c) An eyewear specific to the Nenet people
- d) A fashion of eyewear worn over one eye only

5) What is true about pince-nez eyeglasses?

- a) They are popular today
- b) They are held in place with cloth or leather strapping
- c) They are held in place by crimping onto the nose
- d) They were worn by President Lyndon Johnson

6) According to VisionWatch, what percentage of respondents used sunglasses primarily for fashion?

- a) 80%
- b) 19.6%
- c) 50%
- d) 71.4%

7) What are Groucho glasses?

- a) Small, round metal eye wear
- b) Green lens glasses
- c) Non-optical glasses created as a novelty item
- d) Popular sunglasses

8) When did Giordano da Rivalto first document the use of eyeglasses?

- a) In 1000 A.D.
- b) In the 12th century
- c) In 1306 A.D.
- d) In 965 A.D.

9) What might account for the increase in the availability of spectacles in the 1400's?

- a) A general increase in wealth
- b) The need for additional fashion
- c) The invention of the monocle
- d) The invention of the Gutenberg press

10) What type of eye wear was suggested by Jerome Savonarola?

- a) Under the wig glasses
- b) Spectacles that attached to a cap
- c) Hand held rivet glasses
- d) Spectacles with folding temples

11) Who in history had an extensive collection of lorgnettes?

- a) Jacqueline Kennedy Onassis
- b) Samuel Pepys
- c) Marie Antoinette
- d) His Majesty George II

12) For whom did John Turlington create a pair of eyeglasses with green lenses?

- a) Napoleon Bonaparte
- b) Samuel Pepys
- c) LaFayette
- d) George Washington

13) What is asthenopia?

- a) The early stage of presbyopia
- b) A type of astigmatism
- c) Eyes that are crossed
- d) Generalized eye discomfort

14) Who is credited with the invention of temples?

- a) Benjamin Franklin
- b) Vickris Hyam
- c) Edward Scarlett
- d) David Ayscough

15) Why did David Ayscough recommend green or blue lenses?

- a) As a fashion statement
- b) To prevent offensive, glaring light
- c) The glass was easy to obtain from Venice
- d) This was his personal preference

16) What spectacles prevented smoke, debris and sparks from entering the eye?

- a) Decorative lorgnettes
- b) Bow spectacles
- c) D-spectacles
- d) Drop down spectacles

17) When was the first optical shop in America established?

- a) 1677
- b) 1776
- c) 1868
- d) 1799

18) Two inventors proposed spectacles that would employ a headband. Who were they?

- a) Dudley Adams and Benjamin Franklin
- b) Ayscough and McAllister
- c) Adams and Fairclough
- d) This type of eye wear was never created

19) What historical event likely forced John McAllister, Sr. to begin creating his own fashionable gold and silver frames in 1815?

- a) The introduction of newspapers
- b) The discovery of the Rosetta Stone
- c) Napoleon's exile
- d) The War of 1812

20) What is the functional but less fashionable design that used pantoscopic angle for bifocal viewing?

- a) The Franklin spectacles
- b) Elkington spectacles Patent 6692
- c) Clustered half-eyes
- d) Double monocle

21) What is the special feature of spectacles as advertised in the R&J Beck catalog?

- a) Plastic frames
- b) Choice of fashionable colors
- c) Curl temples
- d) Jeweled embellishments

22) Which of these eyeglasses is considered to be a fashion of the 1950's?

- a) Fitovers
- b) Lorgnettes
- c) Snow goggles
- d) Wayfarers

23) What English fashion style was popular in the 1960's?

- a) Pince-nez

- b) Plastics
- c) Mod
- d) Asymmetric

24) Which US President purchased eyeglasses for 37 cents, indicating a primary need for function?

- a) George Washington
- b) Bill Clinton
- c) Theodore Roosevelt
- d) Abraham Lincoln

25) Which spectacle design allows for easy re-use when a new prescription is needed?

- a) Aviators
- b) Mod glasses
- c) Small, round, metal
- d) Wayfarers

26) Why did Harry Truman often choose small, round frames?

- a) Reduced weight and convenience
- b) This style was readily available in his time
- c) This type of eye wear was provided by his medical coverage
- d) His wife preferred this fashion on him

27) Which president preferred the fashion of contact lenses, yet was sometimes portrayed with eyeglasses?

- a) Bill Clinton
- b) Lyndon B. Johnson
- c) John F. Kennedy
- d) Ronald Reagan

28) What popular celebrity continued wearing eyeglasses as a fashion statement after LASIK surgery?

- a) Elton John
- b) Jim Carrey
- c) Drew Carey
- d) Steve Jobs

29) Why do ready readers work for the majority of wearers?

- a) The patient doesn't wear them for very long in a day
- b) A common pupillary distance is used
- c) The patient just adapts eventually
- d) The plus powers are insignificant

30) Sunglasses have often been desired by the fans of celebrities as early as _____?

- a) The 1700's
- b) The 1950's
- c) The 1960's
- d) The 1800's

31) Why were horn rimmed glasses usually a brown or black color?

- a) The fashion was meant for gentlemen
- b) They were actually made of animal horn
- c) Harold Lloyd looked best in those colors
- d) To simulate more expensive materials

32) Which frame material must be confiscated in certain states?

- a) Gold
- b) Zylonite
- c) Cellulose acetate
- d) Cellulose nitrate

33) Which of these phrases is part of a general advertising philosophy:

- a) Men look for value
- b) Women look for color choices
- c) Men prefer not to wear glasses at all
- d) Women prefer contact lenses

34) Who sees spectacles as an extension of make up?

- a) The advertising industry
- b) The optical industry
- c) Bobbi Brown
- d) Most women

35) What eye wear can be adjusted from a -6.00 to a +3.00 diopter?

- a) A spy lens
- b) Clipons
- c) Adlens
- d) Aviators

36) How are most eye styles designed today?

- a) By individuals not associated with a manufacturer
- b) With CAD
- c) On paper
- d) By a designer with no input from an optician

37) What type of technology is being employed by companies such as "Sneaking Duck"?
a) Memory metal crafting
b) Online ordering
c) Interchangeable lenses
d) 3-D printing

38) What eye wear related product has a vintage collector following?
a) Fitovers
b) Unique temples
c) Eyeglass cases
d) Chain eyeglass holders

39) What material is specifically cited in Webster's New International dictionary in 1959?
a) Cellulose nitrate
b) Memory metal
c) Optyl
d) Zylonite

40) Where is a good site to look at high-end or specialty materials and frames?
a) Vision Expo East and West
b) Google
c) Etsy
d) E-Bay