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Patient education brochures

Abstract

Effective doctor-patient communication can be enhanced by the use of patient education brochures. Patients easily forget what they are told; in order to increase compliance and patient understanding, written instructions and explanations for the patient to take home are invaluable. Brochures may also have protective legal value. When creating brochures, it is important to realize the literacy level of the intended patient population. Understanding some basics in grammar and typography is useful in making a brochure that can be easily read. The use of illustrations is also explored. This thesis offers suggestions as to the types of information which are appropriate for brochures and how to avoid bias in writing. The appendices include instructions on completing a readability analysis, a list of sources which publish brochures, and copies of brochures we have created ("Controlling Your Headaches," "Age-Related Macular Degeneration," "Glaucoma," "Sunglasses for Safety," "Eye Drops/Ointment," and "Soft Contact Lens Wear.")

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PATIENT EDUCATION BROCHURES

By

Jennifer Jo Baer

A thesis submitted to the faculty of the
College of Optometry
Pacific University
Forest Grove, Oregon
for the degree of
Doctor of Optometry
May, 1993

Advisor:

Dennis L. Smith, O.D., M.S.

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SIGNATURE PAGE

Jennifer Jo Baer

A handwritten signature in cursive script, reading "Jennifer Jo Baer", written over a horizontal line.

Dennis L. Smith, O.D., M.S.

A handwritten signature in cursive script, reading "Dennis L. Smith", written over a horizontal line.

BIOGRAPHICAL INFORMATION

Jennifer Baer grew up in Eugene, Oregon where she attended the University of Oregon Honors College and received a BA degree in biology with an emphasis in teaching. She has taught classes in field ornithology, astronomy, plant identification, parasites, dance, and outdoor school. She worked as a medical transcriptionist for an orthopedic surgeon where she learned some of the intricacies of a close-knit, well run practice and how to "get down and party."

She studied for her degree of optometry at Pacific University. There, she was chairperson of the Conference Committee, a nonprofit organization which brainstormed fundraising events in order to send members to national and regional conferences. She was elected to the Preceptorship Committee and the office of Class President. Having received an Air Force scholarship, she will be entering the Air Force upon graduation. Her optometric interests include full-scope optometry, vision training and enhancement, and traumatic brain injuries.

Her favorite leisure activities include hiking, backpacking, bird watching, dancing on the beach, and playing piano.

ABSTRACT

Effective doctor-patient communication can be enhanced by the use of patient education brochures. Patients easily forget what they are told; in order to increase compliance and patient understanding, written instructions and explanations for the patient to take home are invaluable. Brochures may also have protective legal value. When creating brochures, it is important to realize the literacy level of the intended patient population. Understanding some basics in grammar and typography is useful in making a brochure that can be easily read. The use of illustrations is also explored. This thesis offers suggestions as to the types of information which are appropriate for brochures and how to avoid bias in writing.

The appendices include instructions on completing a readability analysis, a list of sources which publish brochures, and copies of brochures we have created ("Controlling Your Headaches," "Age-Related Macular Degeneration," "Glaucoma," "Sunglasses for Safety," "Eye Drops/Ointment," and "Soft Contact Lens Wear.")

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"I am a bear of very Little Brain, and long words Bother me."
A. A. Milne

PURPOSE

Your patients may be nodding their heads in your exam chair, but how much do they understand when they get home and how much do they want to know?

Utilizing brochures can complement your chairside time, increase patients' knowledge, enhance your communication with patients, and offers many other benefits as well.

In this thesis, we examine literature from the health professions concerning the readability, benefits, and drawbacks of brochures. Most importantly, we have compiled suggestions for creating a successful brochure from the literature and we offer our own suggestions for improvement. We have included examples to follow and those to avoid.

The appendices contain 6 brochures which we have created, instructions for analysing readability, and a list of sources for brochures and booklets relating to eye care.

WHY ARE BROCHURES NEEDED?

Increase Patient Knowledge

Written educational materials increase patients' knowledge (Bertakis) and increased patient knowledge has been shown to be the greatest benefit of brochures (Kitching). "Printed materials are the most effective channel for communicating health messages" according to Allensworth & Luke. It must be cautioned, however, that written materials are in no way a substitute for one-on-one patient teaching.

Many patients seem to hear little of what is said once clear vision has been restored or a diagnosis of their chief complaint is made. Providing brochures allows the patients to learn and read at their own ability and/or coping level (Durbach and Nendick, Weinman).

Increase Patient Satisfaction/Enhance Communication

Educating the patient at an appropriate level serves to both enhance doctor-patient communication and increase patient satisfaction (Bertakis).

In their landmark study, Korsch & Negrete state that poor doctor-patient communication is the primary factor leading to patient discontent and the outcome of office visits is more satisfactory when there is an active interchange between the doctor and patient. Brochures can remind the doctor of frequently asked questions, help encourage the patient to ask questions, and get the patients more involved in their own care (Durbach and Nendick). Shank et al. have shown that patients are reluctant to ask for more information but are nearly always agreeable to receiving additional written information.

Research reveals that patient anxiety is reduced by knowing what to expect and brochures are an effective way of conveying that information (Bickford, Merrill and Knox, Weinman). Sass uses brochures to help educate patients on the benefits of dilation and states that education is the best way to change patients' attitudes concerning dilation.

Save Doctor Time

Explaining and diagramming common conditions can be tedious. Health care providers can save time by using brochures as a focal point for discussion (Zion and Aiman, Moore, Durbach and Nendick).

In their research with 800 subjects, Korsch & Negrete found that the amount of time the doctor spent with the patient had no significant correlation to patient satisfaction. Communication is the key to satisfaction and written supplemental materials with diagrams can help facilitate communication.

Increase Patient Compliance

Written instructions increase patient compliance by increasing comprehension and serving as a reminder (Bennett and Weissman, Bertakis, Classe, Kitching, Vincent, Wandless and Davie, Weinman, Zion and Aiman). Take home materials may also help the patient's family understand and become involved in the care required (Ashburn et al.).

Byrne and Edean concluded, after testing 125 patients on medical terminology, that inadequate vocabulary of common medical words could be a significant factor in noncompliance. Written materials can help bridge this gap by explaining terms in easy to understand language.

Shank et al. found that most patients keep brochures rather than throwing them out. If this is true, then brochures can serve as a home reference for health care issues.

Legal Protection

In a medical-legal context, printed materials can document that informed consent was obtained and that follow-up instructions were provided to patients (Carr). Durbach and Nendick note that brochures are helpful for delivering standard, approved information to all patients in a medical facility. Power cautions, however, that misunderstanding written instructions may lead to legal difficulties for physicians. Lay terminology is thus imperative for increasing patient compliance as well as helping to avoid legal confrontation.

Some doctors note in the patient's chart which brochures were provided as a method of documenting care and as a "type of informed consent" (Gettelfinger). It seems logical to assume that written materials which are consistently given to patients could help a doctor's position in a malpractice claim. Indeed, some practitioners recommend obtaining the patient's signature on a form explaining the benefits of polycarbonate lenses if they decide against purchasing such lenses (personal communication, Reichow).

Personal Touch

Having materials available to patients conveys a caring attitude. Baron feels that giving the patient a brochure and explaining the findings demonstrates the doctor's interest in the patient.

Health Promotion and Patient Rights

Today, patients are consumers of the health care system (Bickford). Accordingly, there is a growing interest in health knowledge and self-care (Bertakis). As

Bickford states, "patients and their families have the right to manage their own health and be active participants in the educational process."

There is a national drive towards each individual playing a more active role in maintaining his/her wellness. The Surgeon General's Report on health promotion and disease prevention, entitled "Healthy People", defines health promotion in part as developing lifestyles which maintain and improve well-being (Garber).

If patients would become more active in maintaining their health, it is logical that such health prevention could help decrease the enormous costs of medical care in this country (Bertakis, Garber).

Patient brochures which include options for self-care and lifestyle modifications can help accomplish these goals. We have found that most brochures available commercially offer few suggestions for self-care other than seeing the doctor regularly. We have included a self-help section in every brochure. For example, our headache brochure has a large section titled "Lifestyle Suggestions" and our ARMD brochure has a section called "Help Yourself" (see Appendix B).

Economical

Although several authors recommend professional printing at a cost of about \$500 for 250 copies of a booklet (Lohr et al.), others advocate the more economical solution of forming brochures yourself. The most appropriate use of professional printing would probably be for brochures describing the members and specialties of a practice. These brochures reach a variety of health professionals and potential patients and serve as a valuable first impression of a practice. It is useful if the first impression of a practice is as professional as possible and then as the doctor-patient relationship develops, more relaxed forms of communication are appropriate.

Patient Recall

In his experience with recall methods, West found that mailing educational brochures to patients is a successful method for recalling patients when reminder notices have failed. Hayes, too, advocates using brochures for direct mail sales. Additionally, he has found success in mailing brochures to potential contact lens patients who call his office "shopping" for prices. Although telephone shoppers start out looking for the least expensive way to get into contact lenses, his brochures emphasize quality care and convert bargain hunters into new patients.

Contract Requirement

Some insurance agencies (such as Family Health Service Authorities) may require doctors to provide practice information leaflets to their patients (Moore). If such

requirements are to become a trend in national health care, doctors would be wise to create a brochure which describes the scope of care in their practices.

HOW TO PRESENT INFORMATION

Realizing the general population's limitations in reading ability will help you create a product that can be more easily understood. Following below are suggestions on how to improve the readability of written materials. We have also included a simple way to determine the approximate reading level of any written material (see Appendix A).

Reading Level

Many specialists in a wide array of health disciplines have commented on the level of reading difficulty found in patient education materials (Jackson, McNeal, Meade, Powers, Streiff, Vivian, Zion and Aiman, Doak, Ice). It is a distressing fact that 20% of Americans are functionally illiterate (Dixon and Park, Doak and Doak) and this obviously necessitates educational tools other than the brochure such as videos or cassette tapes.

Doak and Doak report that 50% of their patient population had serious problems reading materials at the 5th grade level. Streiff found that 55% of 106 subjects were at a reading level where they could not understand any of the 28 brochures in his study.

Of the hundreds of brochures evaluated by various readability formulae, many authors have concluded that the reading level is too high. Doak and Doak found the average reading level among written materials they examined to be at the 10th grade; indeed the "standard surgical consent form used by most hospitals, which is issued by the government printing office" was rated at 16th grade.

The general consensus is that material should be written at an 8th grade level or below (Doak and Doak, Lange, Walker, Zion and Aiman). For medication instruction Morrow et al. recommend a 4th grade reading level.

Several researchers have found that grade level completed in school does not correspond to reading ability (Meade, Jackson, McNeal et al.). In fact, reading scores tend to lag three grades below the highest grade level completed (Streiff).

It is important to realize that readability formulae consider only limited aspects of comprehension facility. Formulae take into account one or more of the following: the number of syllables in words, length of sentences, sentence simplicity, and vocabulary (Streiff). Not included in formulae analysis are: content, format, imagery, technical accuracy, organization, illustrations, concept density, visual appeal, patient interests and motivation, relevance of content to the

reader, and typographical and graphic layout (Allensworth and Luther, McNeal et al., Meade et al., Walmsley et al., Zion and Aiman).

Vivian notes that health literature vocabulary is by nature different and more difficult than what is usually found in adult reading material. This may present validity problems when using readability formulae.

One of the most popular readability analysis methods is the SMOG formula because of its ease of calculation and accuracy. The SMOG formula is based on a comprehension rate of near 100% while other formulae are based on 50-75% comprehension (Spadero). This is a major reason why SMOG levels tend to be two grade levels above other formulae (Spadero). However, there tends to be poor correlation among formulae, regardless of what the comprehension rate is assumed to be (Vivian).

See appendix A for instructions on completing a readability analysis using the SMOG formulae.

SIMPLIFYING READABILITY

In a study with 52 participants age 60 and over, Walmsley et al. tested comprehension of original booklets and simplified versions. They found that readability, as measured by formulae or subjectively by skilled writers, was a "poor indicator of comprehensibility." Meade et al., however, found in a study involving 129 subjects that adjusting the reading level of an educational booklet from 10th to 5th grade level did improve comprehension.

Most authors agree, however, that there are specific areas to consider when attempting to improve readability for the lay public. These areas are discussed below.

Vocabulary

Medical terms should be defined within the text, in a glossary, or with an illustration (Allensworth and Luther, Byrne and Edean, Zion and Aiman). Even the simplest terms may require explanation.

Where a common word will do, use it! Use one to two syllable words where possible (Vivian and Robertson).

Grammar

1. Use short, simple sentences. Sentences should not contain more than two ideas (Kitching).
2. Use relative pronouns (which, that, who) as needed for comprehension (Wright).
3. Aim for a readability level of 8th grade (see Appendix A) or below without oversimplifying or adopting a condescending tone (Consumer Advisory Board Report).
4. Use the active voice. This helps establish a more personal message (Kitching).
5. Spoken sentences and questions can be used to help focus attention (Allensworth and Luther, Dixon and Park, Kitching). For example, the heading "My vision just isn't what it used to be" is a spoken sentence (quote from Walker).
6. Keep materials short in length, but don't condense to the point of ambiguity. Consider writing a series of brochures for different ability levels if there are numerous ideas to cover.
7. Use repetition for emphasis and transitions (Lange, Zion and Aiman).
8. Use affirmative sentences. Avoid negative and double negative construction. Kitching advises using negative sentences only when emphasizing actions to be avoided.
9. Use positive comparative adjectives like heavier, longer, brighter rather than their negative counterparts (lighter, shorter, darker) (Wright).
10. Avoid using the words "unless" and "accept" as these words tend to confuse people (Kitching)
11. Avoid using too many participle phrases (Kitching). For example, instead of saying "Plunging hundreds of feet into the gorge, we saw Yosemite Falls" say "We saw Yosemite Falls plunging hundreds of feet into the gorge." In the latter, it is clear that the Falls are plunging, not the people. (Random House Dictionary of the English Language, 2nd ed., unabridged).
12. Avoid interrupting one clause with another clause. This is called an "embedded clause" and tends to create confusion (Wright).
13. Use topic sentences at the beginning of every paragraph.

Sequence

1. The most important information should be presented at the beginning or the end as the patient will retain that better (Ice, Lange, Morrow et al.).
2. Instructions should follow temporal order (Doak and Doak, Kitching, Morrow et al., Wright). This enables the patient to establish an order while reading and enhances the visualization process.

Studies have shown that integrating medical regimens with patients' daily routines increases compliance (Ice, Ashburn et al.). For this reason, in our ARMD brochure we ask that patients post the Amsler grid on their refrigerators and coordinate testing with the most consistent meal time of the day.

Miscellaneous

1. Headings improve reading speed and helps the conciseness of presentation. Headings must be informative. Catchy phrases are sometimes used to attract attention; however, Wright argues that they are inappropriate for technical writing as a captive audience is already present. Most health topics are of serious concern and patients may interpret catchy phrases as being corny or unfeeling.
2. Avoid abbreviations as they cause frustration when the reader must search through the text to decipher the initials (Wright).
3. Numbers are best written as numbers rather than spelled out or in Roman numeral form (Kitching).
4. Captions should clearly identify illustrations.

ILLUSTRATIONS

Illustrations can save space by conveying a large amount of information into a small space. Booher notes that pictures are easier for the brain to process than words; additionally, pictures are stored and retrieved more easily in long-term memory. Reed et al. suggest illustrating key points in order to reinforce instructions and improve recall. In studies with older adults, Park et al. found that pictures were easier to recognize and recall than words. Booher concluded from his research that procedural information was the most efficiently understood when pictures were used as the primary communication tool and words were used only to clarify the pictures. He also noted that although pictures increase the rate of learning, words are essential for accuracy.

Diagrams are especially useful when instructing how to do something (e.g., instilling eye drops) (Kitching). Ideally, a reader should be able to glance over diagrams and be able to recall and perform the activity described.

Morrow et al. state that illustrations are very helpful for people with poor reading ability or reduced visual acuities. Moll found that patients scored higher on comprehension tests after reading illustrated booklets and that 70% of patients prefer reading information that is accompanied by illustrations. Streiff,

however, states that pictures will not aid understanding if the text readability is above the patient's ability.

It has been said that a picture is worth a thousand words. This should be kept in mind when creating concise brochures.

Types of Illustrations

1. **Photographs**
Lange advises against using photographs in educational brochures because photographs show too much detail. Superfluous detail distracts from the topic at hand. Kitching found that "simple, labeled line drawings resulted in the most learning".
2. **Color**
Readers prefer black and white illustrations (Kitching, Lohr et al.). Kitching warns that color may be inappropriate, although no reason is provided.
3. **Cartoons**
Moll found that cartoons were the preferred type of illustration in osteoarthritis booklets, however, Kitching notes that cartoons may be a "distraction".
4. **Symbols**
Symbols should be avoided because they are so often misinterpreted (Kitching).

USING TYPOGRAPHY TO IMPROVE LEGIBILITY

The following are recommendations from the literature concerning how to use typography in order to improve the legibility of patient education materials.

Lay-Out

1. Single space
2. Unadjusted right margin (Kitching, Lohr et al.) and adjusted left margin. Hyphenation should be avoided as it reduces reading flow.
3. Spacing
 - a) At least 1/3 inch between paragraphs (Allensworth and Luther)
 - b) 1/2 inch below subtitles (Lohr et al.)
4. Leave plenty of white space as this allows the reader to scan (Allensworth and Luther).
5. Use captions, headings, and subheadings (Allensworth and Luther, Dixon and Park). To emphasize these, use consistent font and spacing.
6. A box format can be useful for emphasis (Doak and Doak), but does not work well for warning messages (Kitching).

7. Indenting the first line of a paragraph increases reading speed (Kitching). An empty line between paragraphs, however, is more effective than indentation alone (Wright).

Typography

1. Size of type (point size)

Recommendations range from 14 pt type for medication instructions (Morrow et al.), 12 point for older adults (Allensworth and Luther), and 8 or 10 point type as the best overall (Dixon and Park). Other studies have shown that 11-point type is read the fastest and readers prefer it over other sizes (Knowles, Tinker). Wright cautions that 12 point type and larger decreases reading speed. Regardless of reading speed, large type is recommended for the sight impaired (Allensworth and Luther, Doak and Doak).

2. Font

Italics reduce comprehension rate and should not be used (Kitching, Tinker). Serif is recommended because the variation among letters helps readers identify letters more rapidly. (Tinker, Allensworth and Luther, Kitching). Serif refers to the added minute lines on letters, for example the lines that distinguish the number one from the small letter "l". A common serif type is Times; Geneva and Helvetica are sans serif type and require more time to read.

Font spacing also influences reading speed. Monospaced fonts, such as Courier and Monaco, have characters all of the same width. Thus a letter with many strokes such as "m" occupies the same amount of space as the letter "i". Monospaced fonts should be avoided as they require more time to read and more space to print.(Knowles).

Use both upper and lower case letters as all capitals are more difficult to read (Knowles, Tinker). Bold print is useful for emphasis, but if it is used too often decreases reading speed (Tinker).

3. Line Length

Readers dislike very long or very short lines of print. Most brochures utilize a two column approach on an 8-1/2" paper orientation or three columns on an 11" paper orientation.

4. Ink/paper color

The best contrast is obtained by utilizing black ink on off-white paper (Allensworth and Luther). Hayes, however, recommends using pastel colored paper such as beige, blue, and green. Colored paper can add an artistic flavor and a distinctive look to brochures.

Variation in ink color can add emphasis and is appropriate for headings, but color interpretation varies. Red is associated with "blood" and "illness," whereas blue is interpreted as being "soothing" (Consumer Advisory Board Report). Lange suggests using red, yellow, and black for emphasis but cautions against using combinations of violet, blue, and green as these are more difficult for older patients to distinguish.

5. Texture

A matte finish is recommended for glare reduction as it allows quicker and more comfortable reading (Lohr et al.). Heavier paper is recommended for a more professional image; 50#, 60#, and 70# have all been suggested in the literature (Hayes, Lohr et al., Walker). Small details, such as paper quality and texture, can help distinguish one product from another and create a more professional image.

MARKETABILITY

The aesthetic quality of a brochure should be considered. Thinking in terms of brochures as ideas to be "sold" may help a professional to create an attractive product. Hayes suggests borrowing ideas, layouts, and designs from junk mail such as travel brochures.

WHAT TO INCLUDE IN BROCHURES

Before creating a brochure, the writer must first identify who the potential readers will be, their approximate education level, and what motivation they will have for reading the material. Appropriate topics are conditions frequently encountered in practice or topics in which patients have expressed interest.

Goal

A specific behavioral outcome should be the goal of every brochure. (Doak and Doak, Morrow et al.). The brochure should explain to the patients the benefits they will acquire from the information in the brochure.

Suggestions and patient expectations should be specific and quantitative; for example say "lose 10 pounds" instead of "you should lose weight" (Ice, Kitching).

Date

The date of printing should be printed on all brochures. This allows outdated material to be identified more easily and may be useful in legal situations.

Carr advocates keeping a record of when materials were updated and retaining older materials at least five years after an updated version has taken its place. This may offer some legal protection.

Practice Information

The doctor's name, address, and phone number should be on all brochures. They may be stamped onto commercial brochures or printed onto brochure originals. A map showing how to locate the office is helpful and most appropriately placed on the back of brochures so it can be referred to easily without having to open the brochure and look for it.

Content

An appropriate outline for a disease-oriented brochure is as follows:

1. Introduction--why is the topic important?
2. Nature of the disease/diagnosis, with minimal physiology discussed,
3. Symptoms,
4. Relevant diagrams,
5. Cause and risk factors,
6. Treatment,
7. Prognosis and what to expect, and
8. A self help section including when/why/how to seek further advice. It is helpful to outline available options for the patient.

The self help section is one which we have devised in order to get the patient more involved in his/her own care and to emphasize behavioral outcomes. We believe this will increase patient compliance and give the patient a feeling of more control over his/her well-being.

Reader Interest

Although difficult to test for, the interest value of educational materials will influence their comprehensibility. A brochure can be made more interesting by the addition of pictures, a question-answer format, or fascinating facts. The level of perceived interest will vary depending upon the intended reader population.

Offering positive reinforcement to the reader can add to the material's interest value. There are many ways to accomplish this (Allensworth & Luther, Wright):

1. Give the reader opportunities to use new concepts,
2. Offer summaries at appropriate intervals,
3. Provide questions which encourage review/reflection,
4. Provide pre-test and post-test sections, and
5. Include accurate and simple illustrations.

Personal Touches

A brochure's content should be appropriate to the intended patient population. References to community activities, honors, and goals can add a personal touch.

Add boxes that can be checked off for each patient's needs and empty lines which can be filled in at the office visit with patient specific instructions. For example, in our headache brochure, we have provided boxes which the doctor can check and a headache record which the patient can fill in on a daily basis. Empty lines can be useful for writing in a patient's name, date, return appointment time, as well as instructions specific to the patient such as contact lens wearing time and contact lens solutions to be used.

Leaving plenty of empty space not only allows easier scanning of the material but also allows the doctor to add personal comments during the office visit.

Reading Level

The concerns about readability are so widespread in the literature that Streiff recommends the reading level be printed on all brochures. This will allow the practitioner to more appropriately select material for each patient.

Practice Promotion

Brochures can be used for more than education and instruction. A promotional brochure describing a practice can be useful to share with other professionals as well as prospective or current patients.

A promotional brochure can describe a doctor's specialties, involvement in the community, honors, awards, facilities available (including those for disabled people), office hours, telephone numbers, and staff information. It is advisable to place a map on the back of brochures so that patients can easily find the practice. Photographs of doctors and staff members may also be included.

TRAPS TO AVOID

Using Preprinted Materials

Depending on professional affiliations and the community setting, practitioners need to determine how to present themselves and their profession. Using brochures marketed by organizations (such as AOA, OEP, AAO) may be inexpensive, time saving, lend credibility to a practice and offer the patient a national network referral source, however, there are some precautions. For example, practitioners should also consider if the material agrees with their professional philosophy, the appropriateness of the information to the community, and organization specific information. Phrases such as "an ophthalmologist is the only doctor who provides total eye care" (HA brochure, AAO) would be inappropriate in an interdisciplinary practice.

Commercial Interests

It is desirable not to be influenced by commercial interests in your promotional and educational materials (Moore) as this may be construed as unprofessional behavior. Patients want to believe their doctor has no ulterior motive in recommending a particular product or brand. They would prefer that the recommendation be made because the doctor believes the medication/product would best take care of their condition.

Equal Opportunity

Avoid phrases that could be interpreted as being sexist. Comments should be non-sexist, pronouns should be an equal mix of he/she where appropriate, and illustrations should represent both sexes and all races where applicable (Allensworth and Luther).

Judgemental Statements/Stereotypes

Beware of generalizations such as, "Contact lenses make your eyes look lovely. Eye make-up makes your whole face prettier" (Cosmetics and Contact Lenses brochure, Cheldaro Enterprises, Stayton OR). This is a biased opinion and is irrelevant to the topic of eye health. It could also be interpreted as being sexist.

Coercion

Scare tactics are generally not successful in improving compliance with ocular therapy (Ashburn et al.). Patients may become so fearful of outcomes that they fail to take their medications. A patient may feel less vulnerable by ignoring a disease.

PLANNING FOR THE FUTURE

Pretest

Brochures may be pretested on a trial group of patients to determine if further simplification is warranted. Questionnaires can be mailed to patients who have received brochures or questionnaires can be presented on follow-up visits.

Appropriate questions to include are:

1. Were there any words which you did not understand; if so which ones?
2. Did you find the topic interesting, why?
3. Did the brochure help you remember to follow your doctor's instructions?
4. How often did you use the brochure as a reference?
5. What suggestions would you have for improving this brochure?

Revisions

Whatever the final format and content, one should plan on revising brochures periodically in order to respond to patients' needs and interests, and as new information becomes available.

Copyrighting

Copyrighted work must contain the copyright notice which consists of (Patton):

1. The letter C in a circle (©), the work "Copyright," or the abbreviation "Copr.,"
2. The first year of publication of the work, and
3. The owner's name who is taking out the copyright.

To obtain a copyright, one may file a Federal Department of Copyright and Liscensure form along with two copies of the material and a \$25 fee (Walker). The appropriate form for brochures and other textual material is "Form TX." Forms may be obtained by writing to:

Copyright Office
Library of Congress
Washington, D.C. 20559

Each application form should relate to a single work. It is possible to use one application form for a "collection" if (Johnston):

1. All parts of the collection are presented in an orderly format,
2. A single title identifies the collection as a whole, and
3. Each part is authored by the same individual.

For further details on completing copyright forms, Johnston's book offers comprehensive information.

APPENDIX A

SMOG Readability Formula

The SMOG formula is used for determining readability of material. It is considered to be one of the easiest and most accurate formulae (Spadero). It is based on 100% comprehension. To analyze written material using this formula, follow these steps (from Spadero):

1. Select 10 consecutive sentences from the beginning, middle, and end of the passage. One sentence is considered to be an independent thought which grammatically stands alone. Therefore, for these purposes a "sentence" may end with a period, semicolon, colon, question mark, or exclamation point.
2. Count every word of 3 or more syllables. Do not count "ed" and "es" endings on verbs that make the word have a third syllable. Any string of letters or numbers beginning or ending with a space is counted if you can identify at least 3 syllables can be identified when read aloud in context.
3. Take the square root of the number found in Step #2 and round to the nearest perfect square. If the count lies near the middle of two perfect squares, take the lower square root. For example, if the count is 110, the square root would be calculated as 10.
4. Add 3 to the calculated square root. This number represents the estimated SMOG grade level.

APPENDIX B
Six Original Brochures

Controlling Your Headaches
Age-Related Macular Degeneration
Glaucoma
Soft Contact Lens Wear
Eyedrops/Ointment
Sunglasses for Safety

HEADACHE RECORD

DATE	TIME BEGIN/END	SYMPTOMS	INTENSITY *	POSSIBLE SOURCES **	PRIOR ACTIVITY	WHAT HELPED

***INTENSITY:**

Rate on scale of 1-5, where 1 can easily be forgotten and 5 disables you from concentrating.

****SOURCES:**

- | | |
|------------------|--|
| 1. Emotions | 5. Food sensitivity (within last 24 hrs) |
| 2. Poor posture | 6. Eye strain |
| 3. Lack of sleep | 7. Pills, medication |
| 4. Hunger | 8. Illness |

CONTROLLING YOUR HEADACHES

There are many different types of headaches. This brochure presents four of the most common types.

You can help yourself control situations which lead to headaches by reading the "lifestyle **suggestions**" inside this brochure.

Keeping a **headache record** (see back of brochure) will help you and your doctor pinpoint possible causes of your headaches.

Frequent headaches can be dangerous and should not be ignored.

HEADACHE TYPES



MUSCLE
TENSION



EYE STRAIN



MIGRAINE/
VASCULAR



SINUS

Symptoms	Constant pain. Onset: late morning or early afternoon.	Arrives with eye use; disappears with rest. Hatlike pattern of pain.	Throbbing. Nausea. Vision: shimmering at sides; holes/lightning bolts.	Pain at brows/near eyes. Runny nose. Better as day passes. Worse with bending.
Cause(s)	Physical Emotional Environmental	Inefficient use of eyes when working up close.	Genetic. Stress. Blood flow changes in head.	Allergies Infection
Comments	Most common headache.	Close work may worsen any type of headache.	Often starts on one side of head.	Needs medical attention.

LIFESTYLE

(for tension, eyestrain, and

SUGGESTIONS

migraine headache types)

POSTURE

1. Sit up straight.
2. Feet flat on floor or elevated to an even level.
3. Shoulders, back, and head should be straight up and down.
4. Stretch during periods of prolonged sitting.
5. Sleeping: the spine, neck and head should be in a straight line; on side, hips should be kept square by placing small pillow between knees.

CLOSE WORK

1. Use good light.
2. Use a glare shield at the computer.
3. Elbows and wrists: keep in line with computer keyboard.
4. After 15 minutes of close work, take 15 seconds to look out the window or as far away as possible.

DIET

1. Eat nutritious meals on a regular schedule.
2. Foods linked to headaches are: cheeses, caffeine, chocolate, alcoholic beverages, nitrites, MSG (monosodium glutamate).

RELAXATION TECHNIQUES

1. Deep breathing through abdomen. Inhale and exhale slowly.
2. Exercise regularly
3. Whatever works for you--hot bath, soft music . . .
4. Massage to release muscle tightness.
5. Biofeedback to train relaxation
6. Acupressure

PART-TIME LENS WEAR

1. Clean/disinfect immediately upon removal.
2. Store lenses in a tight case using fresh, sterile saline and refrigerate.
3. Repeat cleaning/disinfecting process at least once per week AND within 24 hours of reapplication of lenses.
4. If you own multiple pairs of lenses, mark each case for easy identification. Cases should remain sealed at all times when not in use.

THINGS YOU SHOULD KNOW

Proper care of your lenses is the largest factor in maintaining healthy eyes.

Mixing different brands of solutions may result in discolored lenses, chemical reactions, uncomfortable eyes, and decreased lens life. Please consult with us before changing solutions.

Complications may occur with contact lens wear. It is very important for you to keep follow-up appointments in order to maintain healthy eyes.

Never wear your contact lenses when your eye is red, when you have an eye infection, cold, allergic reaction, or an unusual eye discharge. An up-to-date spectacle prescription is a must for occasions when contacts cannot be worn.

Do NOT wear torn lenses.

Do NOT sleep with lenses on.

Wait 1 hour after swimming to wear lenses.

Do NOT reuse solutions.

Do NOT use any eye medicines or drops while wearing your lenses without first consulting with us.

NAME: _____

Maximum wearing time: _____

Follow-up appointments: _____

Lens Care System:

Clean with _____

Disinfect with _____

Soak in _____

Rewetting drops _____

Enzyme with _____

How often? _____

Your lenses should be replaced every

SOFT CONTACT LENS WEAR

INSERTION

1. Wash hands
 - a) Use mild soap without lotions, creams, or deodorant (Ivory, or one of contact lens soaps).
 - b) Rinse well.
 - c) Dry with lint-free towel.
2. Always remove the right lens first.
3. Touch lenses with fingertips only; nails should be short and smooth.
4. Check orientation of lens
 - a) Gently squeeze lens between thumb and index finger.
 - b) Edges should appear as in Figure I and resemble a taco.
5. Rinse lens with sterile saline until free of debris.
6. Place lens on tip of DRY index finger.
7. Grab upper lid with middle and index fingers of opposite hand.
8. Pull down lower lid using middle finger of placing hand.
9. Insert as you were shown in the clinic.
10. Slowly look up, right, left, and down.
11. Gently close eyes.
12. Lightly massage closed lids to eliminate any bubbles.
13. Verify that the lens is on the eye by covering the other eye and checking vision.

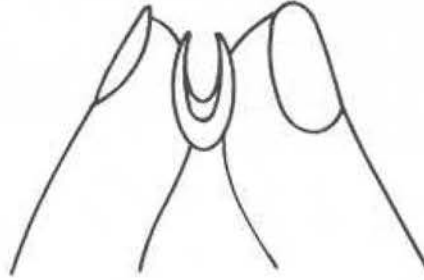


Figure I
The Taco Test

REMOVAL

1. Wash hands.
2. Place rewetting drop or sterile saline in eye before taking lenses off (dry lenses tear easily).
3. Look up.
4. Pull down lower lid with middle finger.
5. Place DRY index finger gently on the lens' center and slide lens down onto white of eye.
6. Pinch lens off with thumb and index finger, making sure that fingernails do not touch the eye.

CLEANING AND STORING

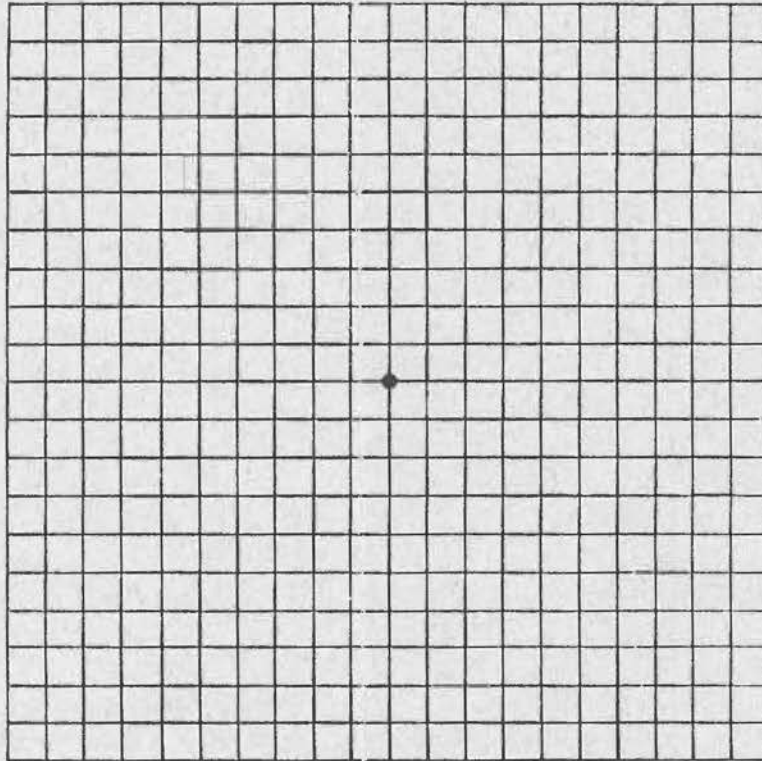
1. Place lens in palm of hand (see Figure II).
2. Add several drops cleaner onto lens.
3. Rub lens with pad of little finger for 20 seconds (see Figure II).
4. Rinse thoroughly with saline.
5. Place lens in storage container.
6. Fill each compartment with fresh disinfecting solution.
7. Follow manufacturers guidelines for length of disinfection cycle.
8. Keep solutions tightly capped.
9. Avoid touching dropper tips to anything.



Figure II
Placement of Lens for Cleaning

CASES

1. a) Rinse with sterile saline or disinfection solution daily
OR
b) Boil case once a week.
2. AIR dry case on clean surface.
3. Replace case yearly.



AGE-RELATED MACULAR DEGENERATION

AMSLER GRID

Post on refrigerator. Monitor yourself **DAILY** at the most consistent meal time of the day.

1. Look through reading portion of glasses.
2. Hold grid 12" away.
3. Cover one eye.
4. Look at center dot.
5. Be aware of entire grid. Don't let bifocal edge interfere with grid.
6. Repeat for other eye.
7. Report any changes immediately to your doctor.

Definition: Macular degeneration affects the macula, that portion of the retina producing sharp, central vision (see Figure I). Peripheral vision is not affected.

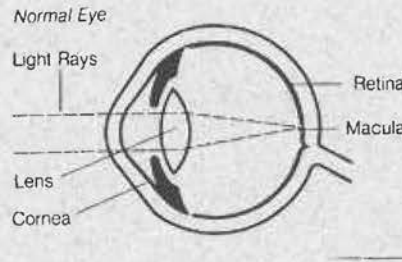


Figure I
Light Focusing on Macula

Prevalence:

- 1). Affects one third of those 65 and over.
- 2). A common cause of vision loss.
- 3). One or both eyes may be affected.

Symptoms:

- 1). Straight lines appear wavy (see Figure II).
- 2). Blurred areas of type on a page of print (see Figure III).
- 3). Dark or empty spaces in center of vision (see Figure III).

Cause: Deterioration of light-sensing area of retina.

Risk Factors: Age, hardening of the arteries, heredity, trauma, exposure to UV light.

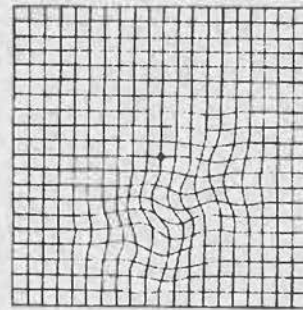


Figure II
Wavy or Crooked Lines

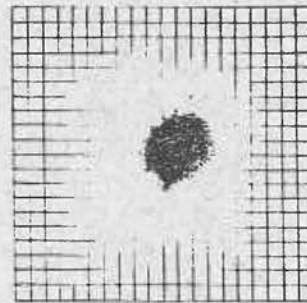


Figure III
Blurred Areas, Dark Spaces

Prognosis: Not reversible once vision has been lost. Immediate medical assessment of any changes may determine how much sight is saved. Every hour counts!

HELP YOURSELF:

- 1). Return to your eye doctor in _____ months or immediately if home monitoring shows any change.
- 2). Home monitoring (see back of brochure)
- 3). **Special Aids:**
Magnifiers
Bright light
Large print books and Newspapers

Treatment: Frequent follow-up is essential; notify your eye doctor immediately if you notice any changes. Laser surgery is beneficial in the early stage of some forms of the disease.

HELP YOURSELF

1. Get regular eye health exams.
2. Use medications as directed by your eye doctor.
3. Keep a list of medications used and how often; provide this information to any health care professional who is treating you.
4. Ask your doctor about potential side effects of medications.
5. Check with your eye doctor before taking any prescription or off the shelf drugs.
6. Inform your eye doctor of any eye symptoms.
7. Reduce stress.
8. Regular exercise has been shown to decrease intraocular pressure. However, consult your physician before starting a strenuous exercise program.
9. Share feelings with other glaucoma patients; make contacts through the
*** Foundation for Glaucoma Research, 490 Post, Suite 1042, San Francisco CA 94102.
10. Continue with life--don't let the diagnosis of glaucoma interfere with your life.

RETURN TO CLINIC

MEDICATIONS PRESCRIBED

GLAUCOMA

DEFINITION

Fluid within the eye is continually produced and drained (see Figure 1). If too much intraocular fluid is produced or outflow is limited, high intraocular pressure results.

Glaucoma occurs when the elevated internal pressure causes damage to the nerves, suffocating them and eventually killing them.

Glaucoma may also be caused by or associated with eye injury, inflammation or tumor, and advanced cataracts or diabetes.

PREVALENCE

1. Often affects both eyes.
2. 2/100 Americans over age 35 are at risk for glaucoma.
3. Is the second leading cause of blindness in the U.S.

SYMPTOMS

1. Gradual vision changes, usually beginning in the periphery. If untreated, progresses to loss of vision.
2. In most types of glaucoma there is no pain and central acuity is not affected until late in the disease process. The peripheral vision loss often goes undetected by the patient.

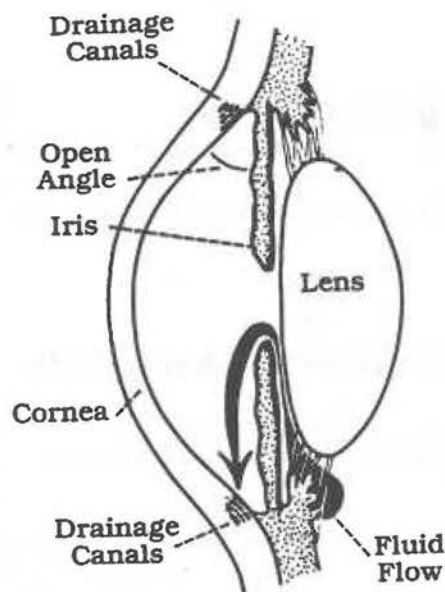


Figure 1
Eye Fluid Dynamics

PROGNOSIS

1. Once vision is lost, it is rarely recoverable.
2. Early diagnosis and treatment delay progression of the disease.

RISK FACTORS

1. Elevated intraocular pressure increases risk.
2. Increased risk with advancing age.
3. Greater risk in people of African ancestry.
4. Family history of glaucoma increases an individual's risk.
5. Highly near-sighted eyes have structural differences creating greater risk.
6. Long term use of corticosteroids increases intraocular pressure.
7. Previous ocular trauma or surgery increases risk.

TREATMENT

1. Drops, ointment, eye inserts, pills. Must be taken daily, as directed.
2. Lifelong treatment with regular follow-up.
3. It is common to change medications over the course of years.
4. Laser surgery to enhance drainage. May require more than one surgery.

EYEDROPS/OINTMENT

USE YOUR DROPS/OINTMENT FOR



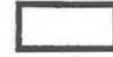
dry eye



glaucoma



infection

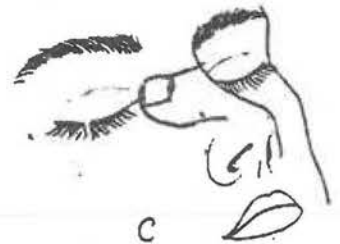
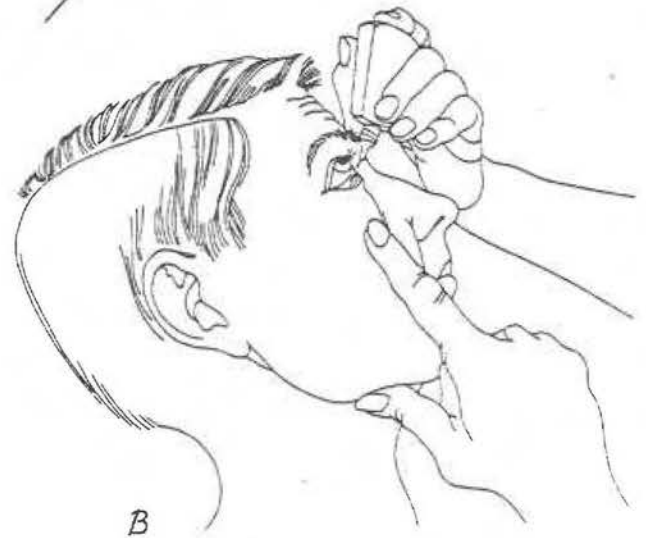
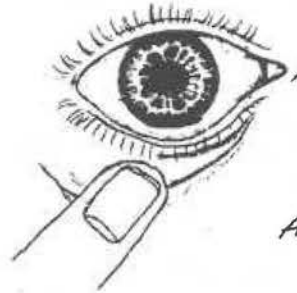


other

RETURN DATE _____

INSTILLATION

1. Wash hands.
2. Tilt head back or lie down.
3. With index finger, pull lower lid down (Drawing A).
4. To steady the dropper bottle, rest palm of hand on nose or thumb on forehead (Drawing B). Tip should be about 2 cm from eye.
5. Look way up.
6. Squeeze drop (or 1.5 cm ribbon of ointment) in the pocket between the eye and lower lid. Do NOT touch tip of bottle to eye or eyelashes.
7. Close eyes gently.
8. Gently dab any tears from cheeks.
9. Prescription drops:
 - a) Hold inner corners of nose for one minute after instillation (Drawing C).
 - b) Wait 5 minutes between drops.



CAUTIONS:

1. Always **double check** label before putting drops in eye.
2. **Throw out** bottles which have been open for more than 3 months.
3. For your safety, **ask your doctor** before putting **ANY additional product** into your eyes.
4. **Cap** bottle when not in use.

SUNGLASSES FOR SAFETY

Sunglasses are vital for individuals spending time outdoors or anytime when glare is present.

WHAT KIND OF LIGHT IS HARMFUL?

Light is a small part of a continuum called the electromagnetic spectrum (see Figure I).

Ultraviolet light, which has a shorter wavelength than visible light, is invisible to us but can have many damaging affects on the eyes over a lifetime.

WHERE DOES UV LIGHT COME FROM?

Sunlight, sunlamps, and welding arcs all contain UV light.

HOW CAN THE UV LIGHT DAMAGE MY EYES?

1. Cornea and White of the Eye

The cornea is the transparent tissue in front of the iris (see Figure II). UV light can cause a "sunburn" to the eye resulting in pain and cell loss. UV light also contributes to pterygium formation.

A pterygium is a benign yellowish mass which develops on the white of the eye and can grow over the cornea.

2. Lens

The lens is that part of the eye which focuses light to form an image on the back of the eye (see Figure II). The lens absorbs much of the UV light that enters an eye. This absorption can lead to or accelerate cataract formation.

3. Retina

The retina is the light-sensitive nerve layer in the back of the eye. UV light is thought to contribute to a disease process called "macular degeneration," which is a deterioration of that portion of the retina responsible for central vision. This is a leading cause of vision loss in the elderly population.

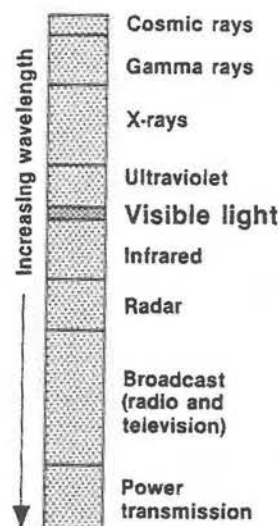


Figure I:
Electromagnetic Spectrum

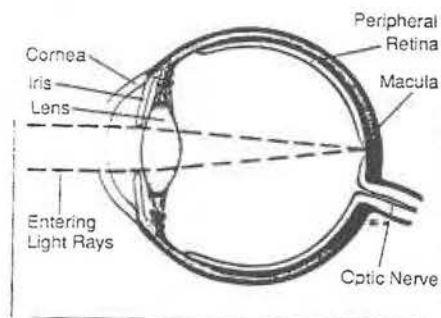


Figure II:
Cross-section of Eye

SUNGLASSES FOR SAFETY

RECOMMENDATIONS

1. Never look directly into the sun.
2. Sunglasses should block 100% of UV light. Sunglasses without UV protection cause the pupils to get larger, allowing more damaging UV rays to enter the eyes than if no sunglasses were worn at all.
3. Wraparound glasses are most effective in keeping light from shining around the frames.
4. Sunglasses should be polarized to provide protection from light reflection. Polarization decreases the glare while allowing optimum contrast (discrimination between light and dark).
5. UV blockers and polarized protection is available in prescription and nonprescription glasses.
6. Sunglasses are especially important for people with light-colored eyes and of fair complexion.
3. Mirror lenses: These reflect some light but do not necessarily offer UV protection.
4. Gradient lenses: A permanent tint which varies from the top to the bottom of the lenses and generally do not provide UV protection. Gradient lenses which are dark on top and clear on the bottom can help reduce the effects of overhead fluorescent light flickering. Unless you have specific indoor requirements, gradient lenses are not recommended for either indoor or outdoor use.
5. Photochromic lenses darken under bright conditions and lighten in low light. They are available in glass or plastic. The colder the environment, the more glass lenses darken. Glass lenses require five minutes to lighten; they never lighten completely and as they age they become darker.
6. Judging quality of nonprescription sunglasses: Hold the lens 12" from your eyes and rotate the glasses while viewing both a vertical and horizontal object. The object should not be distorted as the lens is rotated. Next move the glasses side to side or up and down--the objects should not bend or lose their shape.

CONSUMER TIPS

1. Colored sunglasses often distort the colors that you see. Grey lenses offer the least color distortion.
2. Blue blocking yellow: Yellow colored lenses absorb blue light and make the world appear yellow. They decrease glare, especially from water, and are popular with fishermen and boaters. No scientific evidence exists that these lenses can improve vision.
7. Scratch resistant coatings protect against minor scratches. It is highly recommended that all plastic lenses be treated with a scratch resistant coating.
8. High cost is not necessarily a good indicator of sunglass quality.

APPENDIX C
Selected Sources For Brochures

- AOA "Answers to Your Questions" series
"Healthy Eyes Fact Sheet" series
- OEP Vision training
Visual hygiene
- National Institutes of Health
Brochures and booklets
"ARMD," "Diabetic Retinopathy"
- American Foundation for the Blind
Booklets
- Gimbel Eye Foundation (Canada)
"Insight on Eyesight" pamphlets
"Diabetic Retinopathy"
- Contact lens companies
Pharmaceutical companies
Advil--"Headaches"
Alcon--"Conjunctivitis in Children"
- Channing L. Bete Co.
"About Cataracts"
- Krames Communications
"Macular Degeneration"
- American Academy of Ophthalmology
"Eye Fact" sheets
Brochures
- American College of Surgeons
"Emergency Care Eye Injuries"
- Cheldaro Enterprises
Pamphlets compiled by an optometrist in Stayton, OR
- Individual clinics
"Eye Care Notes" from Good Samaritan Hospital in
Portland, OR
"Eye Facts" from Ophthalmology Department,
University of Illinois at Chicago

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