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## A survey of contact lens popularity in Hawaii

### Abstract

The types of contact lenses fitted in Hawaii were surveyed. The survey polled optometrists in private practice who had been in practice longer than two years. Previous contact lens surveys are discussed and summarized. The literature here predicts the continued growth in popularity of both hard gas permeable lenses and soft contact lenses. The practitioners responding to the survey are defined in terms of size of practice and specialization. Each doctor was asked to list his/her preferred lens(es) with respect to brand. Overwhelmingly, the lens type of choice was the soft lens, the Bausch and Lomb lens was most popular, and the most popular hard gas permeable lens was Polycon.

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James Peterson

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A SURVEY OF  
CONTACT LENS POPULARITY  
IN HAWAII

BY

JAY HONDA

ADVISOR: JAMES PETERSON, O.D.

A THESIS PRESENTED TO THE FACULTY  
OF PACIFIC UNIVERSITY IN PARTIAL FULFILLMENT OF  
THE REQUIREMENT FOR THE DEGREE  
DOCTOR OF OPTOMETRY

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## ABSTRACT

The types of contact lenses fitted in Hawaii were surveyed. The survey polled optometrists in private practice who had been in practice longer than two years.

Previous contact lens surveys are discussed and summarized. The literature here predicts the continued growth in popularity of both hard gas permeable lenses and soft contact lenses.

The practitioners responding to the survey are defined in terms of size of practice and specialization. Each doctor was asked to list his/her preferred lens(es) with respect to brand. Overwhelmingly, the lens type of choice was the soft lens, the Bausch and Lomb lens was most popular, and the most popular hard gas permeable lens was Polycon.

## INTRODUCTION

Contact lenses are in a constant state of flux. New lens materials affect structural design, water content, lens flexibility, oxygen transmissibility, and fitting philosophy. This created a multitude of lens choices for the practitioner. This survey attempted to clarify these choices. Optometrists in Hawaii were asked to list those lens types and brands most frequently prescribed. Previous surveys revealed the following:

- 1- soft contact lenses were the lenses of choice among optometrists who fitted first time wearers<sup>3</sup>,
- 2- hard gas permeable lenses have established a market share at the expense of both PMMA lenses and soft lenses<sup>2</sup>.

A nation-wide survey concluded, "A developing trend in most world areas indicates, whereas the decade of the seventies belonged to soft contact lenses, the eighties will belong to gas permeable lenses."<sup>2</sup> This survey, conducted by Arthur D. Little, Inc. in 1980 presented a brief overview of the present and future status of PMMA, hard gas permeable, and soft contact lenses. Table 1 is a summary from the survey.

The literature listed three main reasons for the increased utilization of hard gas permeable lenses. First, contact lenses as a whole are being increasingly fit as an alternative to spectacles as the primary vision correction<sup>3</sup>. Second, the continued growth of the contact lens field has rendered PMMA lenses almost obsolete<sup>3</sup>. Finally, new gas permeable lenses offer better vision, easier care, and longer life than soft lenses and have considerable



physiological advantages over PMMA lenses<sup>1</sup>.

Research has shown that soft contact lens use has also increased<sup>3</sup>. Soft contact lenses designed as spherical, toric, bifocal, or extended wear lenses meet the visual demands of the majority of contact lens patients. The ease of patient adaptibility and comfort aided in making soft lenses the lens of first choice among optometrists<sup>3</sup>.

TABLE 1 Source: Arthur D. Little, Inc., Cambridge, Massachusetts, U.S.A.

THE OUTLOOK FOR CONTACT LENSES IN THE 1980s

% New Fits

	<u>North America</u>		<u>Europe</u>			<u>Asia</u>
	U.S.	Canada	England	France	Germany	Japan
	1980					
HARD	20	20	50	30	20	60
GAS PERM.	10	30	15	10	30	5
SOFT	70	50	35	60	50	35
	1985					
HARD	5	15	30	15	10	35
GAS PERM.	25	55	30	10	35	20
SOFT	70	30	40	75	55	45

## METHODOLOGY

The goals of the survey were threefold-

- 1- to measure any trends toward greater usage of either hard gas permeable lenses, soft lenses, or both;
- 2- to summarize lens brand preference and utilization among local optometrists;
- 3- to reveal the extent of bifocal and extended wear lens use.

Additional questions were geared toward defining the type of practice responding to the survey. Information obtained concerned the number of patients seen per month by the doctor(s), the percentage of those visits which were contact lens related, the number of new lens fits performed per month, and the percentage of patients within each practice that utilized spectacles versus contact lenses as their primary vision aid. These questions were included to create an over-all picture of the practices in terms of size and specialization.

There are one hundred and ten practicing optometrists in the state of Hawaii. Of these, seventy-five met the criteria of having been in private practice for two years or longer. Those excluded were doctors with less than two years work experience in the private sector, military doctors, and doctors in health maintenance organization. Each survey packet included a cover letter explaining the purpose of the survey, a one page questionnaire, and an addressed envelope with postage affixed.

## DATA

Of the seventy-five doctors included in the survey, twenty-five replied for a 33% return rate. Three of these surveys were incomplete for varying reasons.

The typical single doctor practice saw approximately 135 patients per month; of which 33.8% of the visits were contact lens related. On the average, the doctor performed 17 new lens fits per month, 31.5% of these were gas permeable hard lens fits, and 68.5% were soft lens fits. In the typical practice, 61.4% of the patients utilized spectacles as their primary vision correction, 11.4% hard contact lenses, and 27.2% soft contact lenses.

The majority of hard lens wearers (63.3%) wore hard gas permeable lenses as compared to hard (PMMA) lenses (36.7%); these figures include both new and old lens wearers. The hard gas permeable lens brand of choice among Hawaii's optometrists was Polycon with both Boston and Optacryl far behind. Other gas permeable hard lenses utilized were Hydrocurve, G.P. II, and Paraperm. Success with fitting hard bifocal lenses was minimal - approximately two successful fits per practice. Twelve of the 25 practices have fit six or more pairs.

Regarding lens preference and utilization, the spherical soft lenses of choice were either Bausch and Lomb or Aquaflex. Ciba, C.S.I., Hydrocurve, and Hydron lenses were also frequently listed. Others mentioned were O<sub>2</sub>T, Softint, A.O., Freflex, Gelflex, Amsoft, Durasoft, Tresoft, and Alcon.

Soft contact lens utilization and preference was divided into spherical, bifocal, toric, and extended wear lenses. Although there

were variations in popularity among the groups the one consistent brand name was Bausch and Lomb. The fitting of bifocal type lenses was largely unsuccessful. 50% of the practices never have fit any type of soft bifocal contact. Of the practices who have fit them, on the average they have been able to fit only 2 pairs successfully per practice. Success with extended wear lenses was greater. Approximately 16 patients per practice have been successfully fitted.

Bausch and Lomb was the toric lens of choice with Hydrocurve second. Others included were Ciba, Hydromarc, Durasoft, and Freflex.

Soft bifocal contact lens fitters showed another clear cut preference toward Bausch and Lomb. Others listed were Ciba and Durasoft.

For extended wear, Hydrocurve was the lens of choice with Bausch and Lomb following. Other lenses were Permalens, Sauflon, and C.W. 79.

In answering the question on developing trends, most of the doctors felt that soft contact lenses will be increasingly fitted as the lens of first choice over gas permeable hard lenses.

## CONCLUSION

Three major points were made-

- 1- soft contact lenses are the lenses of choice among optometrists in Hawaii;
- 2- the preferred brand of soft lenses is Bausch and Lomb;
- 3- the preferred brand of hard gas permeable lenses is Polycon.

A survey of Wyoming optometrists by Clark Jensen (PUCO, 1984) during the same period supported these statements. One note of interest revealed by Jensen's survey was that the major reason for soft lens preference was patient adaptibility and comfort.

Other significant points of this survey concerned bifocal and extended wear lenses. Bifocal contact lenses, whether they be hard or soft, were seldom fit by local optometrists. The figures on extended wear usage indicated that successful fits per practice were limited in number.

Optometrists in Hawaii overwhelmingly predict that soft lenses will become the lens of choice in the near future, with hard gas permeable lenses also being increasingly utilized. Presently, contact lens demands of both practitioner and patient require utilization of both hard gas permeable and soft contact lenses.

APPENDIX A

SUMMARY OF SURVEY

PRACTICE	QUESTION NUMBER															
	1	2	3	4		5			6		8	10		11		
				A	B	A	B	C	A	B		A	B	A	B	
1	27	17	5	15	85	50	10	40	10	90	-	-	25		x	
2	200	40	40	20	80	38	2	60	2	98	10	2	90	-	x	
3	40	25	-	-	-	75	5	20	50	50	-	-	-	x		
4	100	50	40	10	90	40	5	55	10	90	5	5	-		x	
5*	340	60	50	40	60	35	20	45	60	40	-	6	60		x	
6	100	20	14	70	30	55	10	35	15	85	-	-	27		x	
7	60	40	15	80	20	60	32	8	90	10	-	-	5		x	
8	-	20	-	2	98	80	-	20	30	70	1	-	2	x		
9	21	45	2	50	50	60	20	20	60	40	-	-	3		x	
10	54	20	7	30	70	80	5	15	70	30	2	2	10		x	
11	250	75	40	40	60	60	15	25	30	70	2	10	50	x		
12	105	20	8	25	75	80	5	10	50	50	-	-	2		x	
13	200	10	20	10	90	90	1	9	10	90	-	-	-		x	
14	130	20	10	30	70	85	5	10	10	90	1	2	4		x	
15	120	15	12	20	80	75	5	20	70	30	-	-	-		x	
16	150	40	15	25	75	60	10	30	25	75	1	-	5	x		
17	80	25	10	20	80	75	5	20	10	90	-	-	6		x	
18	100	3	3	60	40	80	1	19	1	99	-	-	-	x		
19	125	15	7	25	75	90	2	8	15	85	-	10	30		x	
20	100	60	10	15	85	40	20	40	50	50	6	3	10		x	
21	250	80	6	30	70	25	50	25	80	20	12	2	5		x	
TOTAL	2961	778	354	692	1508	1413	263	624	808	1392	43	42	349	5	17	
$\bar{x}$	134.6	33.8	16.9	31.5	68.5	61.4	11.4	27.2	36.7	63.3	1.95	1.91	15.9			

\* Two person practice

APPENDIX B - LENS BRAND PREFERENCE

Optometrists were asked to list their preferred brand of lens type.

(Refers to question 9)

Gas Permeables

Polycon	13
Boston	4
Optacryl	3
Hydrocurve	1
G.P. II	1
TOTAL	<u>22</u>

Soft Spherical

B & L	5
Ciba	3
Aquaflex	2
O <sub>2</sub> T	2
C.S.I.	1
TOTAL	<u>13*</u>

Soft Toric

B & L	7
Ciba	5
Hydrocurve	3
Hydromarc	2
TOTAL	<u>17*</u>

Soft Bifocal

B & L	7
Ciba	3
TOTAL	<u>10*</u>

Soft Extended-Wear

Hydrocurve	6
B & L	4
Permalens	3
Sauflon	1
Durasoft	1
C.S.I.	1
TOTAL	<u>16*</u>

\* Numbers do not total to 22 due to lack of response to these questions by various optometrists.

## APPENDIX C - LENS BRAND UTILIZATION

Optometrists were asked to list all the lenses utilized within their practice. (Refers to question 9)

### Hard Gas Permeables

Polycon	20
Optacryl	8
Boston	5
Hydrocurve	1
G.P. II	1
Paraperm	1

### Soft Toric

B & L	14
Hydrocurve	13
Ciba	9
Hydromarc	7
Durasoft	4
Freflex	1

### Soft Spherical

B & L	18
Aquaflex	14
C.S.I	10
Ciba	8
Hydrocurve	6
O <sub>2</sub> T	5
Hydron	5
A.O.	3
Freflex	2
Gelflex	1
Amsoft	1
Durasoft	1
Tresoft	1
Alcon	1

### Soft Bifocal

B & L	13
Ciba	6
Durasoft	4

### Soft Extended-Wear

Hydrocurve	18
B & L	13
Permalens	8
Sauflon	3
C.W. 79	2
Durasoft	1
C.S.I.	1



APPENDIX D - COVER LETTER

A Contact Lens Survey

To the Doctor(s) and staff,

Aloha! My name is Jay Honda. I'm a fourth year optometry student attending Pacific University's College of Optometry.

Enclosed is an informal survey concerning the field of contact lenses. Why a survey? One, to fulfill a graduation requirement. More importantly, I hope to characterize the field of contact lenses in Hawaii with respect to type of practice, lens preference, and product preference.

This survey will be mailed to all optometrists in Hawaii. Your cooperation in answering and returning the survey will be much appreciated. All results will be made available upon request. Please kokua.

Aloha,

Jay K. Honda

APPENDIX E - SURVEY FORM

1. On the average, how many patients per month are seen by the doctor(s)? \_\_\_\_\_
2. Of these visits, what percent are contact lens related? \_\_\_\_\_
3. What is the approximate number of new contact lens fits performed per month? \_\_\_\_\_
4. Of these new fits, what percent are gas permeable lenses (\_\_\_\_\_) vs. soft contact lenses (\_\_\_\_\_)?
5. What percent of your patients utilize glasses (\_\_\_\_\_), or hard contact lenses (\_\_\_\_\_), or soft contact lenses (\_\_\_\_\_), or other optical devices (\_\_\_\_\_) as their primary vision aid ?
6. What percent of your hard contact lens patients wear PMMA (\_\_\_\_\_) vs. gas permeable lenses (\_\_\_\_\_)?
7. Please list the brand name(s) of the gas permeable lens(es) most frequently prescribed and place a check ( ) alongside the doctor's lens of preference.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
8. How many patients have been successfully fit with bifocal hard contact lenses? \_\_\_\_\_
9. Please list the brand name(s) of the soft contact lens(es) most frequently prescribed and place a check ( ) alongside the doctor's lens of preference under each category.

<u>spherical</u>	<u>toric</u>	<u>bifocal</u>	<u>extended-wear</u>
------------------	--------------	----------------	----------------------

  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
10. How many patients have been successfully fit with soft bifocal contacts (\_\_\_\_\_) or extended wear (\_\_\_\_\_)?
11. Within the near future, does the doctor(s) feel that there will be a developing trend towards fitting more:  
\_\_\_\_\_ gas permeable lenses than soft contact lenses  
or  
\_\_\_\_\_ soft contact lenses than gas permeable lenses

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