

Surgical loupe usage among oculoplastic surgeons in North America

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ABSTRACT • RÉSUMÉ

Objective: To study the patterns of usage and perception among U.S. oculoplastic surgeons regarding surgical loupes.

Methods: An anonymous 20-question survey was emailed out to the American Society of Ophthalmic Plastic and Reconstructive Surgery listserv. Data were compiled in Google Forms. SPSS was used for statistical analyses. This study was approved by the institutional review board.

Results: Of the 609 members contacted, 239 (39%) completed the survey; 95% of respondents owned loupes and 78% regularly used them. No association was observed between frequency of loupe usage and sex or years in practice. The most common magnification and brand were 2.5× and Designs for Vision, respectively. The most common problems associated with loupes were limited vision (33%) and lack of comfort (24%), with 11% citing neck and cervical spinal disorders. The most common benefits were magnification (93%) and increased visual accuracy (68%). Of the respondents, 56% believed improved patient care to be a benefit and 76% believed that loupes enhance surgical outcome. With regard to training, 67% supported incorporating loupes into residency, 35% believed in mandating loupe purchase, and 25% wanted residencies to provide loupes at no cost. Respondent support for the use of loupes in practice and training was directly correlated with how frequently they used loupes.

Conclusions: The vast majority of respondents owned loupes. Although most loupe owners used loupes regularly, a sizable proportion operated with limited vision and lack of comfort. Overall, just over half of respondents believed that loupes improve patient care and should be integrated into residency.

Objet : Étudier l'emploi que font des chirurgiens oculoplasticiens américains des loupes chirurgicales et leur perception de ces dernières.

Méthodes : Un sondage comportant 20 questions a été envoyé par courriel aux membres de l'American Society of Ophthalmic Plastic and Reconstructive Surgery. Les données ont été compilées dans Google Forms, tandis que le logiciel SPSS (*Statistical Package for the Social Sciences*) a servi à l'analyse statistique.

Résultats : Quelque 239 (39 %) des 609 membres auxquels on a envoyé le sondage y ont répondu; 95 % des répondants avaient des loupes, et 78 % s'en servaient régulièrement. On n'a remarqué aucune association entre la fréquence d'utilisation des loupes et le sexe du répondant ou le nombre d'années de pratique. Le grossissement le plus souvent utilisé était 2,5×, et Designs for Vision était la marque de commerce la plus populaire. Les principaux problèmes invoqués étaient la vision limitée (33 %) et l'inconfort d'utilisation (24 %) des loupes; en effet, 11 % des répondants ont mentionné des troubles du cou et de la colonne cervicale. Les avantages le plus souvent énoncés étaient le grossissement (93 %) et l'amélioration de la précision visuelle (68 %). Quelque 56 % des répondants estimaient que l'amélioration des soins aux patients représentait un avantage des loupes, tandis que 76 % jugeaient que les loupes amélioraient l'issue postopératoire. En matière de formation, 67 % des sujets appuyaient l'inclusion des loupes au programme de résidence, 35 % croyaient qu'il y avait lieu de mandater l'achat de loupes, et 25 % souhaitaient que l'on fournisse des loupes gratuitement aux résidents. L'appui des répondants envers l'utilisation de loupes dans la pratique et la formation était en corrélation directe avec la fréquence de leur utilisation de ces instruments.

Conclusions : La vaste majorité des répondants possédaient des loupes. Bien que la plupart des propriétaires de loupes utilisent cet instrument régulièrement, une proportion importante d'entre eux devaient malgré la vision limitée et l'inconfort des loupes. Dans l'ensemble, un peu plus de la moitié des répondants croyaient que les loupes amélioraient les soins aux patients et qu'elles devaient faire partie du cursus des résidents.

Surgical loupes, with the intraoperative magnification they provide to physicians, have revolutionized the field of surgery. Since their introduction, loupes have become widely used in medicine. In a study of loupe usage across various specialties, 100% of the cardiothoracic, plastic, and maxillofacial surgeons surveyed used loupes, followed by 83.3% of ophthalmologists and 75% of pediatric surgeons.¹ In terms of rates of usage across surgical specialties, cardiothoracic and plastic surgeons are reported to use loupes most frequently, followed by maxillofacial and pediatric surgeons.¹ Ophthalmologists are reported to use loupes less frequently, possibly because the field uses

microscopes to provide the higher levels of magnification that are required for certain microsurgical procedures. Usage also varies considerably within specialties, such as oral and maxillofacial surgery, with 60% of surgeons regularly using loupes.² In recent years, there have been increased efforts to catalogue loupe usage in various surgical specialties, in part to push for increased use in fields such as emergency medicine and urology.^{3,4} In oculoplastics, however, no studies have been done to investigate patterns of loupe usage. Indeed, to date, there is only one published statistic relevant to the topic, with one study reporting that 80.9% of oculoplastic surgeons use loupes.⁵

There is considerable evidence in support of the merits of using loupes, including increased visual acuity, ergonomics, portability, and greater precision in surgery.^{3,6-9} This is countered by evidence suggesting that loupes may increase neck and back strain and limit depth of vision.^{3,10-12} Additional limitations include vertigo, headaches, and vision dependency.^{3,10} Overall, the literature across multiple fields of specialty remains divided on the relative effects of loupe usage on clinical outcome, with research on this topic being particularly scarce in the field of oculoplastics.^{13,14}

Given the paucity of research on loupes in oculoplastics, we undertook a survey to investigate and characterize patterns and perceptions of loupe usage among oculoplastic surgeons in North America. Specifically, we assessed physician preferences in purchasing and using loupes, both of which shed light on physician priorities in practice and provide valuable information for trainees. We also asked respondents about the policies of their respective residency programs regarding loupes, which may have influenced later usage patterns and perceptions in practice. Finally, we asked respondents for their opinions on the benefits and limitations of using loupes. It is our hope that these data and opinions will not only add to the current landscape of research on this topic, but also stimulate future discussions on the role of loupes in the field of oculoplastics.

METHODS

A 20-question descriptive survey hosted on Google Forms was developed to assess usage and opinion on loupes among oculoplastic surgeons in the United States. An email containing a link to the survey was sent out to the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS) listserv. A total of 609 oculoplastic specialists were reached. A follow-up email was sent 2 weeks after the first email as a reminder. The institutional review board of the Icahn School of Medicine at Mount Sinai approved this study (IF# 1802102). This study is HIPAA-compliant.

The demographic indicators that were collected include age, sex, number of years in practice, and practice setting. Participants were asked whether they owned loupes. Participants who answered no were asked to provide contributory reasons, and those who answered yes were asked about the magnification and brand of their loupes, the frequency of use, the specific operations and context of use, and time of purchase. Participants were asked whether specific rotations during residency required loupes, and if not, whether any encouraged the usage of loupes. The last section of the survey assessed the perceived benefits and limitations of using loupes. Here, participant opinion was also collected on the benefits of surgical loupes in surgery and training, whether they should be required during residency, and whether residency programs should provide loupes at no cost to

trainees. The collected data were analyzed using Excel (Microsoft, Redmond, Wash.) and SPSS (IBM, Armonk, N.Y.). The graphs were generated in Excel.

RESULTS

Of 609 physicians contacted, 239 completed the survey (39% yield) (Table 1). Of these, 179 were male (75%) and 60 were female (25%). The mean age was 50 years (standard deviation [SD] = 13 years), with a range of 29 to 87 years. The mean number of years in practice was 18 (SD = 13), with a range of 0 to 50 years. Most respondents reported working in private practice (n = 152 [64%]), followed by academic medicine (n = 87 [36%]). Sixty-one respondents indicated multiple settings of practice.

Most respondents (n = 228 [95%]) owned loupes (Table 2). Of the 11 physicians who did not, 5 did not train with them and 3 said that they were not required in their practice setting. The remaining 3 cited either infrequent use, neck pain, or cost-to-benefit ratio as explanations. Among the physicians who owned loupes, 74% (n = 165) had purchased them during residency. To assess whether residency played a role in these purchases, we asked respondents about their respective residency programs' policies regarding loupe use; 42% of respondents (n = 95) indicated that they were required to purchase loupes. The primary rotation that required loupes was pediatric ophthalmology (n = 79 [35%]), followed by oculoplastics (n = 70 [31%]), with some overlap among physicians. Four physicians indicated that loupes were purchased for them, and 72 physicians (32%) indicated that although it was not a requirement for them to purchase loupes, they were encouraged to buy them nonetheless. Oculoplastics rotations encouraged loupe purchase the most (n = 54 [24%]), followed by pediatric ophthalmology (n = 47 [21%]).

In terms of actual usage, the most popular brand used by respondents was Designs for Vision (n = 159 [70%]), followed by Zeiss (n = 39 [17%]), and 2.5× was the most common magnification (n = 157, 70%). Of the

	Total (%)
Age, y	
Mean ± SD	50 ± 13
Range	29–87
Sex	
Male	179 (75)
Female	60 (25)
Years in practice	
Mean ± SD	18 (13)
Range	0–50
Practice setting	
Private practice	152 (64)
Academic medicine	87 (36)
Group practice	43 (18)
Hospital-based practice	36 (15)
HMO	4 (2)

SD, standard deviation; HMO, health maintenance organization.

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