

## Role of Cost-Effective Light Source in Clinical Practice of Plastic Surgery

Barath Kumar Singh p<sup>1</sup>, Ravi Kumar Chittoria<sup>2</sup>

### How to cite this article:

Barath Kumar Singh p, Ravi Kumar Chittoria/Role of Cost-Effective Light Source in Clinical Practice of Plastic Surgery/Journal of Plastic Surgery and Transplantation. 2023;4(2):77-79.

### Abstract

The use of cost-effective light source is innovation in the field of Plastic Surgery. Illumination of the operative field is usually in practice are with roof mounted light and focus lights. Head mounted Light source is a new addition available in market. It is available at higher cost. In this article, we describe the cost-effective head mount illuminating light source readily available at a low cost, convenient to carry and easy to use. Wound inspection, Diagnosis of skin lesions, Tissue visualisation, suturing, surgery and suture removal made easy with the help of the cost-effective head mount light source.

**Keyword:** Light Source; Cost-Effective; Clinical Practice; Plastic Surgery.

### INTRODUCTION

In daily clinical practice, a plastic surgeon needs the certain amount of magnification and illumination for his daily routine clinical examination, procedures and surgeries. During surgical procedure, with proper magnification and illumination, precise anatomy is delineated, neurovascular structures easily identified, better placement of sutures and microsurgical instruments are correctly positioned. Light source which is head mounted are highly priced in the market and expensive.<sup>1</sup> This cost-effective Head

mount illuminating light source is convenient because it can be easily mounted on the head and can be folded and carried in our pockets/bags. In this article, we describe the various roles of cost-effective head mount light source in plastic surgery.

### MATERIALS AND METHODS

This study was done in the department of plastic surgery department. We used this head mount rechargeable light source in daily clinical practice in Out-Patient department and in operation theatre during minor procedures and while assisting surgery. The cost of Head mount light source was around 700 Indian rupees comes in the following specifications. It is available in online portal for purchase. The name of the Eyeglasses is Rechargeable head light. The Model number is Docoss 8808. (Fig. 1) The Illuminating filed can adjusted with the circular adjustment around the light. The power of the illumination increased by the button on the head light. It has a rechargeable B port. The Weight of the light source is about 120g. It is made up of Plastic and aluminium. It has a elastic head band for wearing this light in the

**Author Affiliation:** <sup>1</sup>Senior Resident, Department of Plastic Surgery, <sup>2</sup>Professor, Head of IT Wing and Telemedicine, Department of Plastic Surgery & Telemedicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry 605006, India.

**Corresponding Author:** Ravi Kumar Chittoria, Professor, Department of Plastic Surgery & Telemedicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry 605006, India.

**E-mail:** drchittoria@yahoo.com

**Received on:** 04-04-2023

**Accepted on:** 27-04-2023



Fig. 1: Cost effective Head light source

head. This cost-effective head mount light is easily used with ease. (Fig. 2) It can be used for clinical examination in out-patient department, minor day care procedures, assisting surgeries and for performing any major or minor procedures and surgeries in plastic surgery.

## RESULTS

It is found to be easy to carry and useful in minor



Fig. 2: Head light source with Magnifying loop

and major procedures such as suture removal, clinical examination and operative procedures. It is suitable for both short and long surgeries. But during long and microvascular surgery a branded customized loupe provides better illumination. It is easily adjustable after wearing. The added advantage is that it is hands free and whenever not needed, it can be flipped upwards. The head light contains three different light source illumination and it is changeable. The field of illumination can

also be adjusted easily. (Fig. 3).

## DISCUSSIONS

The advent of microsurgery in the 1960's

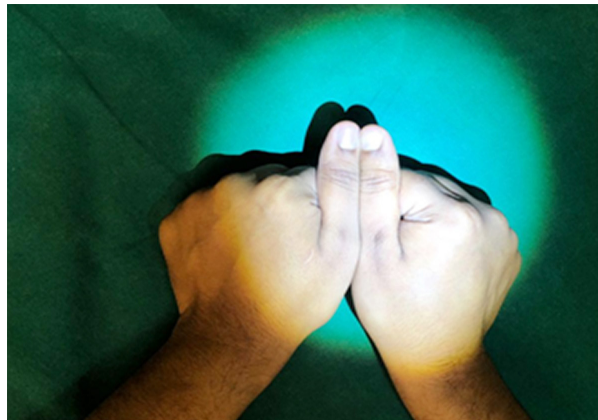


Fig. 3: Field of illumination with light source

is considered to be one of the most important milestones in recent plastic and reconstructive surgery. Although there is no generally agreed definition, microsurgery may be defined as surgery requiring an operating microscope. The first to coin the term "microsurgery" was the vascular surgeon, Jules Jacobson, who anastomosed blood vessels with a diameter smaller than 1.4 mm with the aid of a microscope. Now a days many surgical subspecialties, such as plastic surgery, trauma surgery, neurosurgery, and maxillofacial surgery, use microsurgery in their clinical routine. Successful microsurgical operations require sufficient training and experience using delicate instruments and suture material of 8/0 and less.<sup>1,2</sup> In addition, optical magnification and illumination should be mandatory for precise handling of tissue and sutures.

*Advantages of Cost-effective light source are as follows:*

We can use it easily when conducting detailed operation. It is easy to carry due to its folding type feature. It can be conveniently used. Viewing objects in different illumination level helps to do detailed work in any place, even if proper light source is not available. In order to meet different illumination, three different illuminations available. Field of illumination can be adjusted. Wear the light source on your head with your hands, light source angle can be adjusted freely. It is foldable, easy to carry, cost-effective, easy to use and readily available.

*Disadvantages*

The adjustments of the light source is cannot

be done by surgeons during surgery. We can ask others help in the Operative room for adjustment of the light source.

mounted light source is not readily available.

## CONCLUSION

In our study we found that cost effective head mounted light source is an innovative method to achieve operative field illumination in an easy and convenient way. It can be used in situations of daily clinical practice. It can be used when a roof

## REFERENCES

1. Rohrich RJ, Rosen J, Longaker MT. So you want to be an innovator? *Plast Reconstr Surg* 2010; 126: 1107-1109.
2. Kleinert HE, Kasdan ML. Restoration of blood flow in upper extremity injuries. *J Trauma* 1963; 3: 461-476.

