

JOURNAL OF
*Clinical Prosthodontics and
Implantology (J-CPI)*

A Technique to precisely determine Iris size in ocular prosthesis using button measuring scale

^{1*} Asmita Ghosh, ²Deeksha Arya, ³Saumyendra V. Singh, ⁴Anupama Pathak

^{1,4}Senior Research Fellow, Department of Prosthodontics, Faculty of Dental Sciences, King George's Medical University, Lucknow, Uttar Pradesh, India

^{2,3}Professor, Department of Prosthodontics, Faculty of Dental Sciences, King George's Medical University, Lucknow, Uttar Pradesh, India

Keywords

Button measuring scale,
Iris size, Ocular prosthesis.

Abstract

Prosthetically rehabilitating patients with ocular defects is an artistic challenge. Accurate simulation of the natural iris size in the ocular prosthesis is an essential step of fabrication. It requires precision and accuracy as the iris is the most visually appreciable part of the prosthesis. Therefore, a technique for objectively measuring the iris of the natural eye using a readily available and cost-effective button measuring scale has been described.

***Corresponding Author Details:** Deeksha Arya, Professor, Department of Prosthodontics, Faculty of Dental Sciences, King George's Medical University, Lucknow, Uttar Pradesh, India
Email: deeksha.arya@gmail.com

Article Info

Received: 15 January 2026, received in revised form: 20 February 2026, accepted: 15 March 2026, available online: 28 April 2026; Volume: 8; Issue: 1; Pages: 85-90

How to cite this article: Asmita Ghosh, Deeksha Arya, Saumyendra V. Singh, Anupama Pathak., A Technique to precisely determine Iris size in ocular prosthesis using button measuring scale. J Clin Prosth Impl 2026; 8(1): 85-90. <https://doi.org/10.55995/j-cpi.2026011>

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Introduction

Standard measurement tools and methods primarily focus on positioning the iris correctly, often neglecting the importance of accurately reproducing the iris size.¹⁻⁶ Matching the normal iris size in the prosthesis is crucial to success. This technique focuses on measuring the size of the iris accurately between 7.5mm up to 25.5mm with the help of a button measuring scale, which is readily available and

cost-effective.

Clinical Technique

- Make a routine impression of the ocular socket.
- Create wax pattern for try-in.
- Measure the natural iris diameter with the button measuring scale as shown in Figure 1.

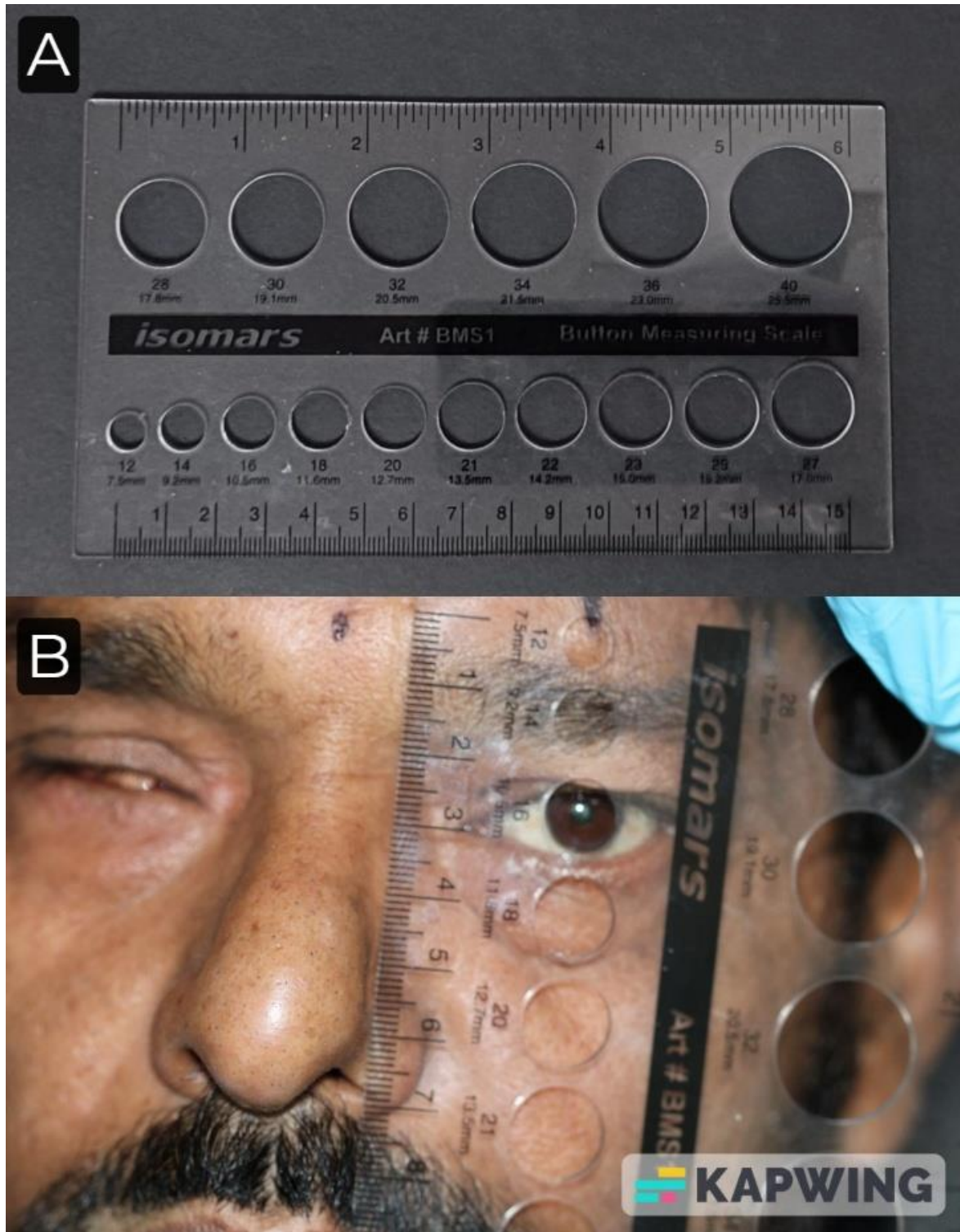


Figure 1. (a) Button measuring scale; (b) Measuring iris diameter.

Now to select a stock eye shell whose iris best matches this diameter and the iris color. Retrieve the iris (Figure 2,3,)



Figure 2. Extracting the stock iris.

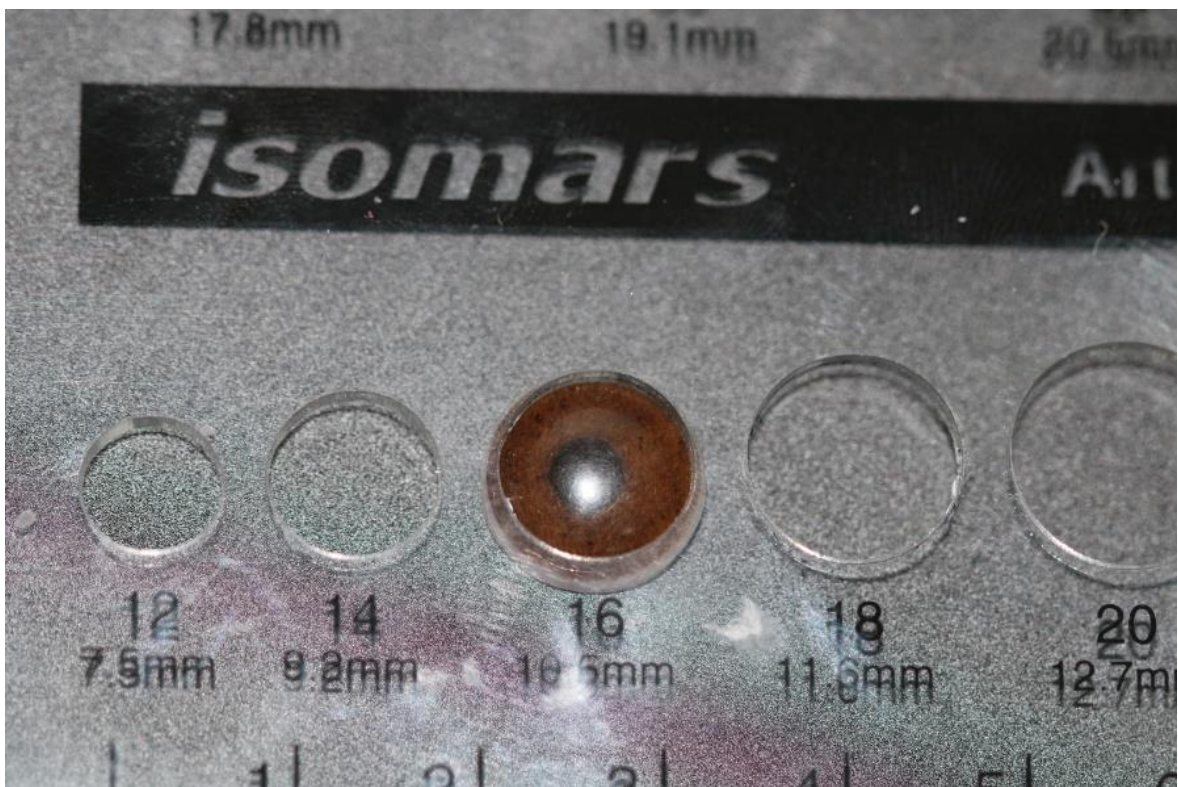


Figure 3. Matching artificial iris size on scale.

Position the iris in the pattern (Figure 4) by using standard anatomical landmarks for reference. (Figure 5)



Figure 4. Iris in the wax pattern.



Figure 5. Final wax pattern in place.

Characterise, process, finish, and deliver as per norms. (Figure 6)



Figure 6. Final prosthesis in place.

Discussion

Various techniques for iris measurements exist, the most common of which are Grid template and digital photography methods. Digital photography was utilized by Dasgupta et al. to locate the iris by using a digital single lens reflex camera to take a clear portrait of his face with a flashlight reflected in the middle of the normal eye's pupil in the picture. The iris was measured using the image captured.¹

Guttal et al. utilized a grid template to measure the iris accurately, but this method requires an assistant to hold the graph and is subject to inter-observer error.⁷

However, the present article technique has the advantage of not being technique-sensitive, is easily incorporable into conventional ocular prosthesis fabrication, and is cost-effective. The limitation of the technique device is that the iris diameter falling between these given sizes can only be estimated.

Conclusion

The button measuring scale can accurately and economically estimate natural iris diameter for optimum reproduction in an ocular prosthesis.

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