

Subject: [BDS] Editor Decision

João da Costa, Júlia Munduri, Daniella Birnbaum, Adriano de Lima, Leonardo da Cunha, Fernanda Cristina Pimentel:

We have reached a decision regarding your submission to Brazilian Dental Science, "Influence of different opacities on the color stability of composite resins: in vitro evaluation".

Our decision is: Resubmit

Reviewer G:

1) I would like to congratulate the authors on conducting the study entitled "Influence of different opacities on the color stability of composite resins: in vitro evaluation". The topic is timely and clinically relevant, particularly given the increasing esthetic demands of patients and the importance of long-term color stability in reducing the need for replacement or repair of composite restorations. However, I would like to highlight some concerns that considerably limit the validity and interpretation of the findings. I have provided some suggestions below, which I hope will contribute to enhancing the quality of the manuscript.

2) The abstract is relatively long and could be condensed to improve readability without losing important information.

3) The Introduction discusses extrinsic factors that may influence the color stability of composite resins. However, these factors were not evaluated in the present study, which focused exclusively on intrinsic color stability. The authors should clarify the rationale for emphasizing extrinsic factors in the Introduction if they are not addressed in the experimental design, perhaps showing that extrinsic staining agent is extensively investigated in the literature.

4) The reported light irradiance of 650 mW/cm² appears to be relatively low. Please clarify whether the output was verified using a radiometer before specimen preparation. Since the Introduction states that the degree of polymerization is an important intrinsic factor affecting the color stability of composite resins, the authors should discuss whether this irradiance may have influenced the degree of conversion and, consequently, the color stability results observed in this study.

5) The shade selection was not consistent among the materials evaluated. While Harmonize and Herculite Précis were tested in shade A2, Vittra APS was evaluated in shade A1. Please justify this choice, as the initial color coordinates (L*, a*, and b*) differ between shades and may influence the color change measurements. The authors should discuss whether the use of different shades could have affected the comparison among the composite resins and explain why this approach does not compromise the validity of the results.

6) The Introduction discusses color measurement devices but ultimately the study used the Easyshade. As the aim of the study was not to compare the performance of different color assessment methods, I suggest reducing the emphasis on alternative devices in the Introduction.

7) The authors evaluated both ΔE_{ab} and ΔE_{00} ; however, the rationale for including both color difference metrics is not clearly explained. Please clarify the purpose of reporting both parameters. The authors should explain why both metrics were considered necessary and discuss the implications of using each for interpreting the results.

8) In **Materials and Methods**, please provide additional details regarding the color measurement protocol. Specifically, describe how the specimens were dried before each color assessment, as residual surface moisture may influence the measurements. In addition, specify how many color readings were obtained per specimen at each evaluation time point and whether the reported values represent the average of these measurements. Finally, clarify whether the storage solution was replaced during the aging period and, if so, indicate the frequency of replacement.

9) According to the standard notation used in the color science literature, please use ΔE_{00} instead of ΔE_{00} .

10) The Results section contains numerical values that are already presented in the tables. For example, the sentence "For example, in the enamel shade, the

change was 5.09 ± 1.77 after 60 days." is redundant and could be removed. I recommend focusing the text on the main findings and statistical comparisons rather than repeating data already available in the tables.

In addition, please carefully check the uppercase letters used to indicate statistical differences in the tables to ensure they are consistent and correctly assigned.

11) The Discussion should focus on interpreting the findings rather than repeating the results. Several sentences simply restate statistical outcomes or numerical values that have already been presented in the Results section. For example, statements such as "*Statistical confirmation was provided by the presence of a significant three-way interaction among the factors Time, Opacity, and Brand ($p < 0.0005$)*" or "*presenting the highest absolute ΔE_{00} values (5.12 ± 1.62 and 4.82 ± 1.77 , respectively), as well as a significant difference among the three brands for ΔE_{ab} (6.50 ± 1.62)*"* are unnecessary and could be removed. Instead, the authors should emphasize the possible mechanisms underlying these findings, compare them with previous studies, and discuss their clinical relevance.

12) The Discussion could also address the clinical relevance of these findings in the context of layered composite restorations. Specifically, dentin-shade composites are typically placed in the inner portion of the restoration and covered by an enamel-shade layer, which generally exhibits greater color stability, as you concluded. Therefore, any intrinsic color changes occurring in the dentin layer may have a limited impact on the overall esthetic appearance of the restoration. Although this was not evaluated in the present study, acknowledging this clinical scenario would provide a more balanced interpretation of the results and help readers understand their practical implications.

13) The Discussion could be strengthened by highlighting the clinical significance of improved color stability. Specifically, greater long-term color stability may reduce the need for restoration replacement due to esthetic concerns, thereby helping to minimize the repetitive restorative cycle and preserve healthy tooth structure. Emphasizing this aspect would reinforce the clinical relevance of the findings within the principles of minimally invasive dentistry.

Recommendation: Revisions Required

Reviewer H:

Abstract:

The abstract is clear and adequately summarizes the study.

Introduction:

The introduction is well written and provides sufficient background and rationale for the study.

Materials and Methods:

- Table IB should also include the commercial names of the resin composites to facilitate identification of the materials evaluated.
- Please specify the lighting conditions under which the specimens were stored throughout the experimental period (e.g., protected from light, ambient laboratory light, or other conditions).

Results:

- In the fourth, fifth, and sixth paragraphs of the Results section, please indicate the corresponding table where the reported findings are presented. This will improve readability and make it easier for readers to locate the data.
- The note *"Different lowercase letters in the table rows indicate significant differences between brands for the same resin type and aging period"* is somewhat confusing. Since the comparisons between brands are presented by columns rather than by rows, the wording should be revised to accurately reflect the organization of the table and avoid potential misinterpretation.

Recommendation: Revisions Required
