2025 The change in translucency of posterior restorative glass-ionomer cements

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Objectives: The purpose of this study is to evaluate the initial translucency and the change in translucency of glass-ionomer cements for posterior restoration, Fuji IX GP EXTRA (F9EX, Shade: A3, GC), Fuji IX GP Fast (F9F, Shade: A3, GC), RIVA Selfcure (RS, Shade: A3, SDI) and Ketac Molar (KM, Shade: A3, 3M ESPE). F9EX is improved on F9F with respect to aesthetic.

Methods: The materials were mixed according to the manufacturer's instructions and placed into molds (diameter 10 mm x height 0.5 mm). The specimens were stored in a chamber at 37 deg C and 100%RH for 10 minutes, then immersed in distilled water at 37 deg C for certain periods. Lightness (L) was measured on black and white background using reflection spectrophotometer (CM-3610d, MINOLTA, JAPAN) after 10minutes, 1day and 7days.Translucency parameter (TP) was calculated as delta L by subtracting the value on black from the value on white. The data was analyzed by t-test ($p > 0.05$).

Results: TP of F9EX after 10minutes was significantly higher than the others. The translucency of F9EX is stable at high over time. TP of the other materials were increasing over time.

	10Min.	1day	7days
F9EX	21.0 (1.1)	22.0 (1.0)	23.2 (0.6)
F9F	13.2 (1.0)	18.2 (1.0)	20.8 (1.1)
RS	6.5 (1.2)	10.9 (0.6)	14.2 (0.8)
KM	9.0 (0.9)	11.7 (1.3)	13.7 (1.2)

():S.D.

Conclusion: The excellent translucency of F9EX can provide superior shade match for tooth structure existing adjacent to the restoration. That translucency of F9EX is more stable than the other materials, which

will create long-term aesthetics in clinical applications.

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