Objectives: Radiopacity can facilitate diagnostic observations adjacent to flowable resin composites. The aim of this study was to evaluate the radiopacity of the current low viscosity flowable resin composites and to compare them with human dental tissues.

Materials and Methods: Five specimens of seven flowable light cured composite materials with a thickness of 2 mm were prepared and radiographed alongside an aluminum stepwedge, human enamel and dentin. Three standard occlusal radiographs for each material were taken with exposure time of 0.32 seconds and focus-film distance of 40 cm. Films were processed in an automatic device, and digitized using a desktop scanner. Mean gray values of the materials, stepwedge, enamel and dentine were measured using Image J software. The data were analyzed using the Duncan multiple range test.

Results: The mean gray values of flowable resin composites ranged from 26.61 ± 1.45 to 38.38 ± 1.47. The radiopacity values of the materials evaluated were in decreasing order: G-aenial Flo, Filtek Ultimate Flowable, Flowline, Estelite Flow Quick, Leaddent Flow, Supraflow, Bright Light Flow. All flowable resin composites, except Bright Light Flow, demonstrated significantly greater radiopacity values than 2 mm of the aluminum scale and dentin (P < 0.05). The radiopacity of only one flowable composite, G-aenial Flo, was found to be significantly higher from enamel (P < 0.05).

Conclusions: All investigated materials presented radiopacity values above the minimum recommended by the international organization for standardization.

Key words: Digitized, flowable resin composites, radiography, radiopacity