

## **Abstract**

Bisphenol A (BPA) is an endocrine disruptor that may be released from dental polymeric materials. The aim of this study was to examine the kinetics of the long-term release of BPA and its analogues from restorative materials (composites, hybrid glass ionomer cements) and polycarbonates used in dentistry. Extracts in ethanol and artificial saliva were collected after 1-260 days for restorative materials and after 1-84 days for polycarbonates. All extracts were analyzed by ultra high performance liquid chromatography-tandem mass spectrometry. BPA was detected in all tested materials, while its analogues were not found. The release of BPA from all tested materials was highest during the first day, followed by a significant decrease for all materials and a complete stop for the "BPA-free" composites. Among restorative materials, the highest amounts of BPA were released from composites with BPA-based monomers, followed by hybrid glass ionomer cements. The least BPA was released from "BPA-free" composites. Shorter irradiation time did not significantly affect the total amount of BPA released from restorative materials, but it significantly increased the release of BPA during the first day. The release of BPA from polycarbonates was significantly higher than from restorative materials. Given the current tolerable daily intake (4 µg BPA/kg body weight/day), the use of the tested restorative materials is safe, but polycarbonate restorations or splints may significantly increase BPA exposure and pose a health risk.