The primary purpose of The Dental Advisor study was to evaluate the presence and composition of bacterial contaminants on patient napkin holders (i.e., bib chains) before and after patient care appointments. Experiments were also performed to investigate the effectiveness of cleaning procedures on reusable bib chains.

As expected, control, unused metal and plastic napkin holders were found to harbor very few contaminant bacteria. Metal and coiled plastic napkin holders that were quickly wiped between use on patients with an EPA-approved, intermediate level disinfectant showed more bacterial contamination compared to unused controls.

The highest levels of bacterial contamination were found on metal and plastic napkin holders sampled after use on multiple patients without cleaning between treatment appointments.

Of additional interest, culture of re-used and wiped plastic napkin holders yielded a mean colony count that was almost two times greater than that found for the metal chains (41.5 vs. 21.9 cfu/mL). This increased microbial load may have occurred because of the more complex, coiled structure of the former type of napkin holder.

Thorough cleaning of this type of chain could require a greater effort on the part of dental personnel in order to reach less accessible areas. For the present study, personnel were asked to only perform a quick wiping motion over the chain with the moist towelette.

Contamination of chains could have occurred by a few different mechanisms:
1) prolonged contact of the bib chain with the patient’s neck, thereby contacting normal epithelial bacterial flora;
2) exposure of the chain to microbe-containing aerosols and spatter generated during treatment and
3) handling of the napkin holders with gloves contaminated during patient care.

Microbial contamination was found on both metal and coiled plastic napkin holders after use during patient care. The highest concentrations of isolated bacteria were observed on bib chains where a cleaning procedure was not performed between patient uses.

Although cleaning chains with a disinfectant wipe between patient appointments lessened the microbial load, resultant bacterial levels were still higher than those noted for new unused patient napkin holders.