Bacterial colonization of central venous catheters (CVCs) causes severe complications in patients. As a result, developing methods to remove and prevent bacterial and fungal colonization of CVCs is imperative. Recently, we have demonstrated that disinfection by radiation of polymer tubes with UVC light is possible. In this paper we present dose-response results using a newly developed UVC disinfection device, which can be connected to a Luer catheter hub. The device was tested on soft polymer tubes contaminated with a pallet of microorganisms, including Candida albicans, Staphylococcus aureus, Escherichia coli and Pseudomonas aeruginosa (ca 10^3 CFU mL(-1)). The tubes were equipped with a modified catheter hub and interfaced to the disinfection device via a middle piece separating the disinfection device from the hub. The contamination lasted for 3 h prior to treatment to simulate an aseptic breach. Our results show UVC killing in a dose and time dependent manner, with no viable counts after 2 min of radiation for bacteria. Killing of C. albicans was obtained at >20 min in an UVC absorbing suspension. We believe our results to be transferable directly to the clinic, and we are currently working on a setup for clinical trial.