



PRESS RELEASE

## **Response from the Sacramento Dentistry Group: How Does UV Light Kill Bacteria?**

One of the most popular pages on the Sacramento Dentistry Group website is an [article](#) answering the question of whether ultraviolet (UV) toothbrush sanitizers really work. Readers can examine that page for the answer to this question, but a follow-up query often related to it is just *how* does UV light destroy bacteria? The fascinating answer involves DNA.

### **Exposure is Key**

The information portion of life's genetic material, deoxyribonucleic acid or DNA, is made up four different molecules called nucleotides. The order of these nucleotides is essential for passing on information and instructions within the cell. One of these data molecules is called thymine and nucleotides containing it are readily damaged by ultraviolet light.

In human cells, it takes a considerable amount of exposure to penetrate the cell's outer layer and protective nucleus to reach the DNA and damage thymine molecules. Bacterial cells, however, are primitive and their DNA is found throughout the cellular fluid, instead of in a nucleus. Therefore, UV light readily passes through a bacteria's outer layer and immediately reaches its DNA. The result is damage to the thymine molecules inside. When enough damage takes place, the enzymes tasked with repairing DNA stop their repairs and instead command the cell to die.

This is just one therapeutic capability of UV light. Besides working in toothbrush sanitizers, UV light is useful in other cleaning and curing aspects of dentistry. So for more information about how you can protect your oral health, you can visit the dentists at the Sacramento Dentistry Group by contacting them through their website ([sacramentodentistry.com](http://sacramentodentistry.com)) or by calling 916-538-6900.