

### Fluorescent hand hygiene control

#### What is the fluorescent trial and how can we apply it?

For testing one's hand hygiene, the two most commonly used methods are the [microbiological sampling](#) and the fluorescent dying method. In this post, we discuss the fluorescent method in details.

The fluorescent method was developed to assess the hand hygiene technique. Health-care workers should perform handrubbing as they usually do, the only difference is that the handrub contains a fluorescent dye. After the hand hygiene event, hands should be placed under (harmless) UV-A light. Regions of hand surface treated with proper amount of fluorescent handrub glow, where untreated areas remain dark.

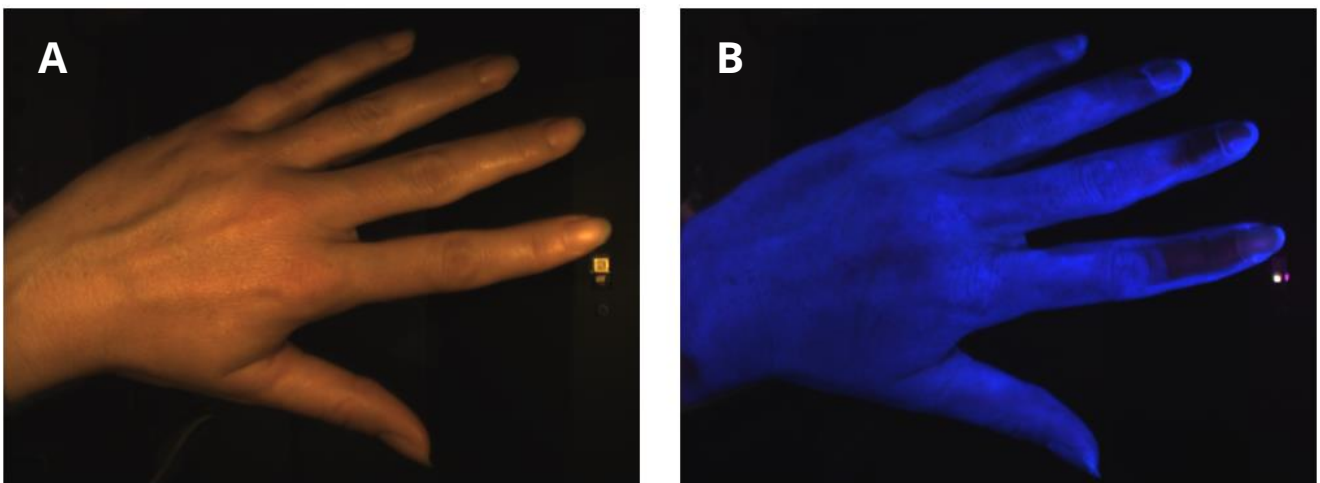


Figure 1: Images of a hand recorded in visible light (A) and in UV light (B) during the fluorescent method. (Source: HandInScan)

The phenomenon of fluorescence occurs when a substance (the dye) absorbs light (energy) and instantly reemits light at a longer wavelength. In this special case, the absorbed light is in the ultraviolet region and thus invisible to the human eye, but the emitted light is visible, as blue.

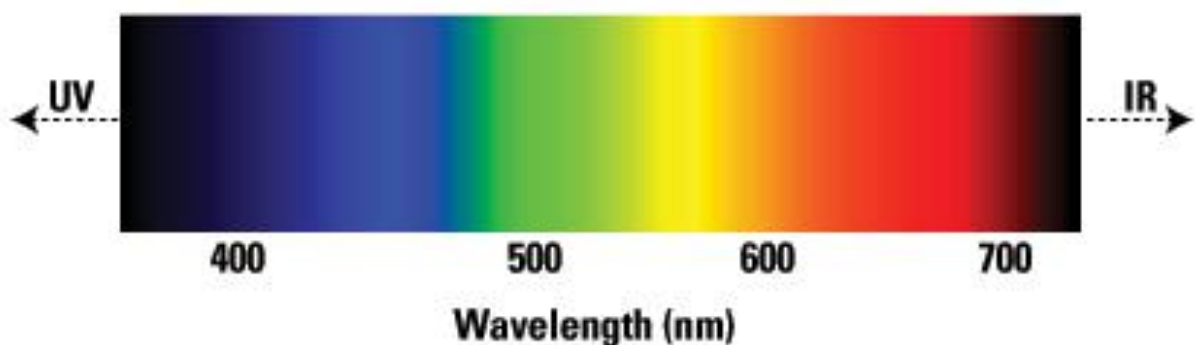


Figure 2: The visible spectrum of light. Source: [ThermoFisher Scientific](#)

Fluorescent dye containing ABHR (alcohol-based handrubs) are commercially available. Some of them are presented in *Figure 3*.



*Figure 3:* Some of the commercially available fluorescent dye containing handrubs.  
From left: BODE Visirub dissolved in Sterillium, Schülke Optics, B. Braun Fluo-Rub,  
and Ecolab Magic Blue

The traditional fluorescent assessment method needs a UV-A light source, UV-fluorescent dye containing handrub and a dark room environment, or the so-called 'black box' to exclude regular light. Fluorescence can be observed by the human eyes inside the box. Advanced settings allow taking record of the fluorescence for later evaluation. [Sommelweis Scanner](#) goes a bold step further, as it evaluates the recorded picture immediately.

Main advantages of the fluorescent method are the easy application, the immediate and visualized result and the relative cost-effectiveness. Thanks to these characteristics the method can be easily applied for medical education [1].

### Conclusion:

The fluorescent method has been applied for more than a decade to help people improve hand hygiene technique. As it requires limited time and expenses, it became one of the most well-known and widely used methods. The [Sommelweis Scanner](#) is the newest, digital development of the fluorescent methodology.

Read our previous post on [different composition of handrubs](#). Please stand by for our next blog entry on the possible application of the fluorescent method.

### References

1: Vanyolos E. et al.: *Usage of ultraviolet test method for monitoring the efficacy of surgical hand rub technique among medical students*. Journal of surgical education, 2(3):530-5. 2015. DOI: 10.1016/j.jsurg.2014.12.002