

14th International Conference on

Clinical and Experimental Dermatology

June 19-20, 2017 Philadelphia, USA

UV absorbance of sunscreen products: Concentration dependence and comparison of efficacy using an *in vitro* technique**Ariel G Silverman, Kayla S Silverman, Deborah H Markowitz and Eric S Silverman**
Metro-West Medical Center, USA

When used properly, sunscreens protect skin from the harmful effects of UV radiation. Sun Protection Factor (SPF) is an *in vivo* technique widely used to compare UVB-blocking ability and is the FDA-approved method of testing products. Sunscreens are tested at a concentration of 2 mg/cm²; however, investigations show that users typically apply insufficient amounts to achieve full protection. Amounts of 0.39 to 1.0 mg/cm² have been found under natural conditions. The relationship between SPF and concentration has been described as both logarithmic and linear. Furthermore, Consumer Reports recently tested 65 products and found wide variation in efficacy, even when used at the recommended concentration. 43% of products failed to achieve the SPF claim on the label. To shed light on these issues, we measured the UV absorbing properties of 11 SPF-30 products and compared the concentration dependence using *in vitro* technique. An ultraviolet spectrophotometer (General UV513AB) was used to measure UV light ($\mu\text{W}/\text{cm}^2$). UVA/B light was focused on dilutions of each product, (0 to 5 mg/cm²) and the amount of transmitted light measured in triplicate. The absorbance vs. concentration curves are shown in the Figure. The relationship between absorbance and concentration was logarithmic approaching an asymptote at higher concentrations that are commonly applied to skin. Of concern was high variability in absorbance between products at recommended concentrations (coefficient of variance 38% at 2.5 mg/cm²). This *in vitro* experiment is consistent with previously published *in vivo* studies suggesting that sunscreens effectively block broad-spectrum UV light, however, there is high variability between brands, and it is essential to use recommended doses because there is a strong relationship between concentration and absorbance.

esilverman@pamw.org

How to plan for the end in the beginning?**Justin D Nabity**
Universidad Veritas, Costa Rica

Financial preparedness is not just about investing in the right funds; it's about finding the right job and negotiating well. It's about tackling debt aggressively, including student loans, while not neglecting retirement planning. For residents and fellows, it's about creatively and purposefully putting a limited pay-check to work instead of waiting until finally finishing training. It's also about being prepared for job interviews and protecting a physician's potential with the right coverage. According to the 2015 MGMA Compensation Report, the median annual earning potential of a dermatologist is *\$350,000. This earning potential illustrates the compelling reason why when planning for retirement; proper diversification goes far beyond having an investment allocation spread out among various asset classes. A truly diversified investment strategy also takes into consideration the impact of taxes both today and when retirement is reached. A diversified investment strategy provides physicians the ability to minimize tax liability in order to optimize the tax efficiency of their portfolio both today and in retirement years. Traditionally, individuals rely solely on their 401(k), IRAs or other tax-deferred vehicles for savings. However, this one-dimensional savings strategy provides little to no flexibility when an individual reaches retirement. Diversification involves spreading investments among tax-deferred, tax-favored and taxable accounts during a physician's working years so they can plan to optimize their tax situation in retirement. Whether discussing contract negotiation, interviewing, debt management or retirement planning, the remedy to this concerning statistic is to universally "Plan for the End in the Beginning."

justinnabity@physicianadvisorsllc.com