Perbandingan ketahanan sun protection factor 30 tabir surya inorganik dan organik pada atlet renang = Comparison of Sun Protection Factor (SPF) 30 persistence between inorganik and organic sunscreen in swimmers

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Abstrak

Later belakang: Atlet renang berlatih di ruang terbuka terpajan sinar matahari dan dapat mengalami sunburn yang dapat dicegah dengan penggunaan tabir surya. Namun, aktivitas fisik dapat mengganggu efektivitas tabir surya, menurunkan kadar sun protection factor (SPF). Tabir surya diklasifikasikan menjadi inorganik dan organik. Tabir surya organik bertahan lebih lama, tetapi tabir surya inogranik memiliki spektrum luas, lebih fotostabil, dan jarang menimbulkan alergi.
Tujuan: Mengetahui ketahanan SPF 30 tabir surya inorganik dan organik setelah digunakan berenang 1,5 jam.
Metode: Penelitian merupakan uji klinis acak tersamar ganda dengan metode split body. Setiap subjek menerima dua perlakuan dengan randomisasi alokasi dan perlakuan. Perbedaan SPF kedua tabir surya dinyatakan tidak berbeda bila nilai p untuk uji berpasangan >0.05 dan batas atas interval kepercayaan tidak melebihi 4 SPF.
Hasil: Tidak ada perbedaan bermakna SPF kedua tabir surya sebelum berenang (p=0,220). Setelah berenang, terdapat penurunan SPF tabir surya inorganik, median 27 (23-47) menjadi 12,3 (8-19); dan organik, median 30 (24-47) menjadi 9,9 (6-19) yang bermakna secara statistik (p<0.0001). Setelah berenang, terdapat perbedaan penurunan SPF kedua kelompok yang bermakna secara statistik (p=0,017).
Kesimpulan: Terdapat penurunan SPF tabir surya inorganik dan organik setelah digunakan berenang 1,5 jam dengan ketahanan tabir surya inorganik lebih baik dibandingkan tabir surya organik.
Background: Outdoor swimmers are exposed to sun exposure, causing sunburn which is preventable by using sunscreen. However, physical activities interfere with sunscreen efficacy, decreasing its sun protection factor (SPF). Sunscreens are classified as inorganic and organic. Organic sunscreen last longer, however, inorganic sunscreen is broad-spectrum, more photostable, and less allergenic.
Objective: To determine SPF 30 persistence between inorganic and organic sunscreen after 1,5 hours swimming.
Methods: This is a randomized, split-body, double-blind, clinical trial. Each subject received two treatments. Subject allocation and treatment were randomized. The difference between sunscreens SPF is no different if p-value for paired test is >0.05 and the upper limit of confidence interval do not exceed 4 SPF.
Results: There was no significant difference between SPF before swimming (p=0.220). After swimming, there was a decrease in inorganic sunscreen SPF, median 27 (23-47) to 12.3 (8-19), and organic, median 30 (24-47) to 9.9 (6-19) which was statistically significant (p<0.0001). When compared, there was statistically significant difference in the decrease of SPF between the two groups (p=0.017).
Conclusion: There is a decrease in SPF of inorganic and organic sunscreen after 1.5 hours swimming with a better persistence of inorganic sunscreen compared to organic sunscreen.