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【Poster Presentation by Teachers】

Altered epidermal barrier functions by free-living daily physical activity in elderly

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Our previous study reported the effects of free-living daily physical activity on the epidermal barrier in 63 elderly volunteers. The present study increased the number of elderly volunteers and investigated the relationship between free-living daily physical activity and the epidermal physical barrier in more detail. A total of 105 healthy elderly volunteers (age 66–93 yr) participated in the study. To assess the physical activity, we used an electric pedometer. We measured moisture content of the stratum corneum with moisture checker and transepidermal water loss (TEWL) with VapoMeter. Moisture content of the stratum corneum ($p < 0.01$)

and TEWL ($p < 0.05$) on the forearm were significantly lower than those on the corner of an eye. In moisture content of the stratum corneum ($r = 0.411$, $p < 0.01$) and TEWL ($r = 0.202$, $p < 0.05$), there were significant correlations between the forearm and the corner of an eye. Additionally, on the forearm ($r = 0.402$, $p < 0.01$) and the corner of an eye ($r = -0.326$, $p < 0.01$), there were significant correlations between moisture content of the stratum corneum and TEWL. The relationship between free-living daily physical activity and the epidermal physical barrier is under analysis.