

# Children wearing sun-smart clothing had 24% fewer new moles over a 3.5 year period

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Jelleke Vanooteghem. Credit: James Cook University

James Cook University researchers are calling for mandatory sun-protective clothing standards at preschools after a multi-year study comparing mole counts on more than 500 under 4-year-olds.

Dr. Simone Harrison, director and principal research fellow of JCU's Skin Cancer Research unit said the number of pigmented moles is one of the most important risk factors for melanoma.

"While almost all preschool centers mandate sun-safe hats (such as bucket, broad-brimmed and legionnaire style hats) and sunscreen, we wanted to see what effect sun-protective clothing had on the risk of developing pigmented moles," said Dr. Harrison.

The researchers provided children at 13 childcare centers in Townsville with high Ultraviolet Protection Factor hats, elbow-length T-shirts, knee-length shorts and protective swimwear.

Over the next four years they monitored the number of moles that appeared on the children and compared these with children at 12 other childcare centers. The results are published in the journal *Cancers*.

"Children where the clothing was provided had 24.3% fewer new moles overall and 31.6% fewer moles on clothing-protected skin after 3.5 years," said Dr. Harrison.

She said the study is the first to show it is possible to prevent a significant proportion of pigmented moles in young Caucasian children by dressing them in UPF 30–50+ clothing that covers at least half their body on a daily basis.

"Although Australians have been exposed to forty years of skin cancer prevention campaigns, the most recent statewide survey conducted in Queensland in 2020 revealed 45% of children had been sunburnt during the previous year, with about 33,000 of these children experiencing five or more episodes of sunburn in 12 months," said Dr. Harrison.

She said previous research has shown a single episode of sunburn during

childhood is sufficient to almost double the likelihood of developing melanoma in the future.

"Increased clothing cover is recommended for [children](#) exposed to high levels of ultraviolet radiation. In addition, industry standards for sun-protective clothing should specify the minimum amount of the body the clothing must cover in their definition of what constitutes sun-protective clothing," said Dr. Harrison.

Australia and New Zealand's sun-protective [clothing](#) standards, which are self-regulated, introduced minimum coverage requirements for sun-safe garments in 2017, while Standards in the U.S. and Canada still only measure the amount of UV blocked by the fabric (UPF rating) without taking into considering the amount of skin a garment covers.

**More information:** Simone L. Harrison et al, Sun-Protective Clothing Worn Regularly during Early Childhood Reduces the Number of New Melanocytic Nevi: The North Queensland Sun-Safe Clothing Cluster Randomized Controlled Trial, *Cancers* (2023). [DOI: 10.3390/cancers15061762](#)

Provided by James Cook University

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