Changes in the pattern of sun-exposure and sun-protection in young children from tropical Australia

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Background

- Australia has one of the highest rates of skin cancer in the world\(^1,2\) particularly in north QLD.\(^3\)
- Life-time risk of skin cancer is linked to sun-exposure in childhood.\(^4\)
- The strongest risk marker for melanoma (number of melanocytic naevi)\(^5\) is directly linked to high levels of sun-exposure in early childhood.\(^6,7\)

References

Methods

• Two cohorts of ONE (12-23 months) & TWO year-old (24-35 mo) children from tropical Australia (Townsville 19.16°S), were compared:
  ➢ Cohort 1 (n=201) recruited in 1991 from hospital birth records
  ➢ Cohort 2 (n=463) recruited 1999-2002 via childcare centres

• Children’s phenotypic characteristics were assessed

• Parents completed questionnaires detailing children’s:
  ➢ demographic characteristics
  ➢ sun-exposure
  ➢ sun-protective practices
Results - 1

**SUN EXPOSURE**

Children from cohort 2 (1 & 2 year-olds [yo]):

- visited the beach more often (both age groups \( p < 0.001 \))
- swam in an outdoor pool more frequently (1yo \( p < 0.001 \); 2yo \( p = 0.03 \))
- 1yo spent more hours outdoors in the previous year than 1yo in cohort 1 (median 2.8 vs 2.2 hr/day, \( p = 0.002 \); 2yo NS)
- 1yo from cohort 2 spent more hours playing in water in warmer weather than 1yo in cohort 1 (72 vs 42hr/yr, \( p = 0.039 \); 2yo NS) but less time swimming with their back exposed (both ages, median 0hrs/yr vs 9hrs/yr \( p < 0.001 \))

By age 2 years:

- more than half the children in both cohorts had been sunburnt
Results - 2

**SUN-PROTECTION**

More children from cohort 2:

- “almost always “wore a sun-protective shirt when swimming in summer & winter (both ages & seasons, p<0.001)
- regularly wore sunscreen (in summer, both ages p<0.001); winter 1yo p=0.023, 2yo NS)

**RISK FACTORS**

- Fewer children in cohort 2 had been sunburnt on the posterior trunk (both ages p<0.001)
- Fewer children in cohort 2  (1yo 15% vs 40%; 2yo 39% vs 75%;) had acquired melanocytic naevi on their posterior trunk (both ages p<0.001)
- Children in cohort 2 tended to have fewer naevi on their posterior trunk (median 2 vs 0 at 2yo) than children in cohort 1 (both ages; p<0.001).
- Children in cohort 2 were less likely to have acquired naevi elsewhere on their body (both ages; p<0.001)
Conclusions

• Time spent in the sun did not change much in the 8-years that elapsed between cohorts.
• There was however, a significant improvement in sun-protective practices in very young children from a region with a substantial skin cancer burden.
• This ↑ in swim-shirt and sunscreen use between cohorts coincided with a reduction in the development of melanocytic naevi (MN), particularly on the posterior trunk.
• The reduced burden of MN observed in the most recent cohort may confer some protection against melanoma.
• Skin cancer primary prevention campaigns are having some effect although more emphasis is needed on reducing sun-exposure.