



Sun Exposure Habits and Calcium Intake in Children with a History of Malignancy

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I. Background: Childhood cancer survivors are particularly vulnerable to the hazardous effects of ultraviolet radiation. However, sun avoidance leads to inadequate vitamin D levels which impair bone health. Furthermore, numerous studies linked decreased sunlight exposure to non-skin cancer incidence and survival. We aimed to compare sun exposure and protection habits, as well as calcium intake, in a cohort of pediatric patients with a history of malignancy to healthy controls.

II. Subjects and methods: Sun habits and calcium intake were assessed by validated questionnaires in 143 children with a history of malignancy (aged 11.2±4.6y, Male=68, mean interval from diagnosis 4.4±3.8y) and 150 healthy controls (aged 10.4±4.8y, Male=67).

III. Results:

➤Patients and healthy controls reported similar sun exposure time during weekdays (94±82min'/day vs. 81±65min'/day; p=0.83). However, during weekends patients spent significantly less time outside (103±85min'/day vs. 124±87min'/day; p=0.015).

➤Time elapsed from diagnosis positively correlated with time spent outside both during weekdays (r=0.194, p=0.02) and weekends (r=0.217, p=0.009).

➤Patients were more likely than controls to wear a hat when in the sun (p=0.009), but there was no difference regarding other sun protection measures.

➤Daily calcium intake was suboptimal in both patients and controls, (about 680mg/day) reaching only 52% of the RDA in adolescents.

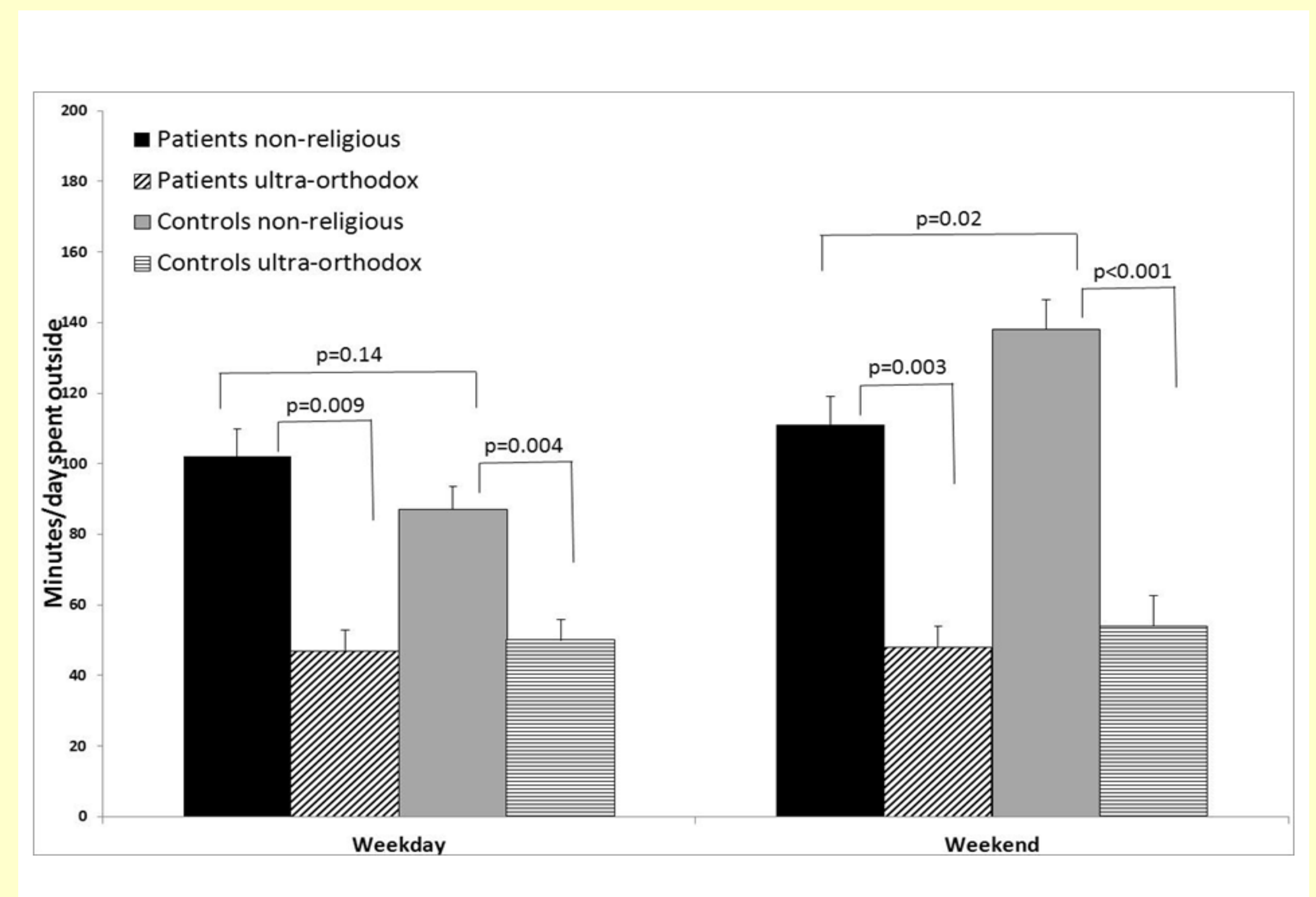


Figure 1: Sun exposure of patients compared to controls

	Patients (n=143)	Controls (n=150)	p-value
Age	11.2±4.6	10.4±4.8	NS
Male (%)	68 (46.9)	67 (45.9)	NS
Ultra-orthodox (%)	17 (11.7)	21 (14.4)	NS
Diagnosis			
Leukemia	57 (39.9%)		
Lymphoma	16 (11.2%)		
Brain tumor	31 (21.6%)		
Solid tumor	27 (18.9%)		
Other	12 (8.4%)		

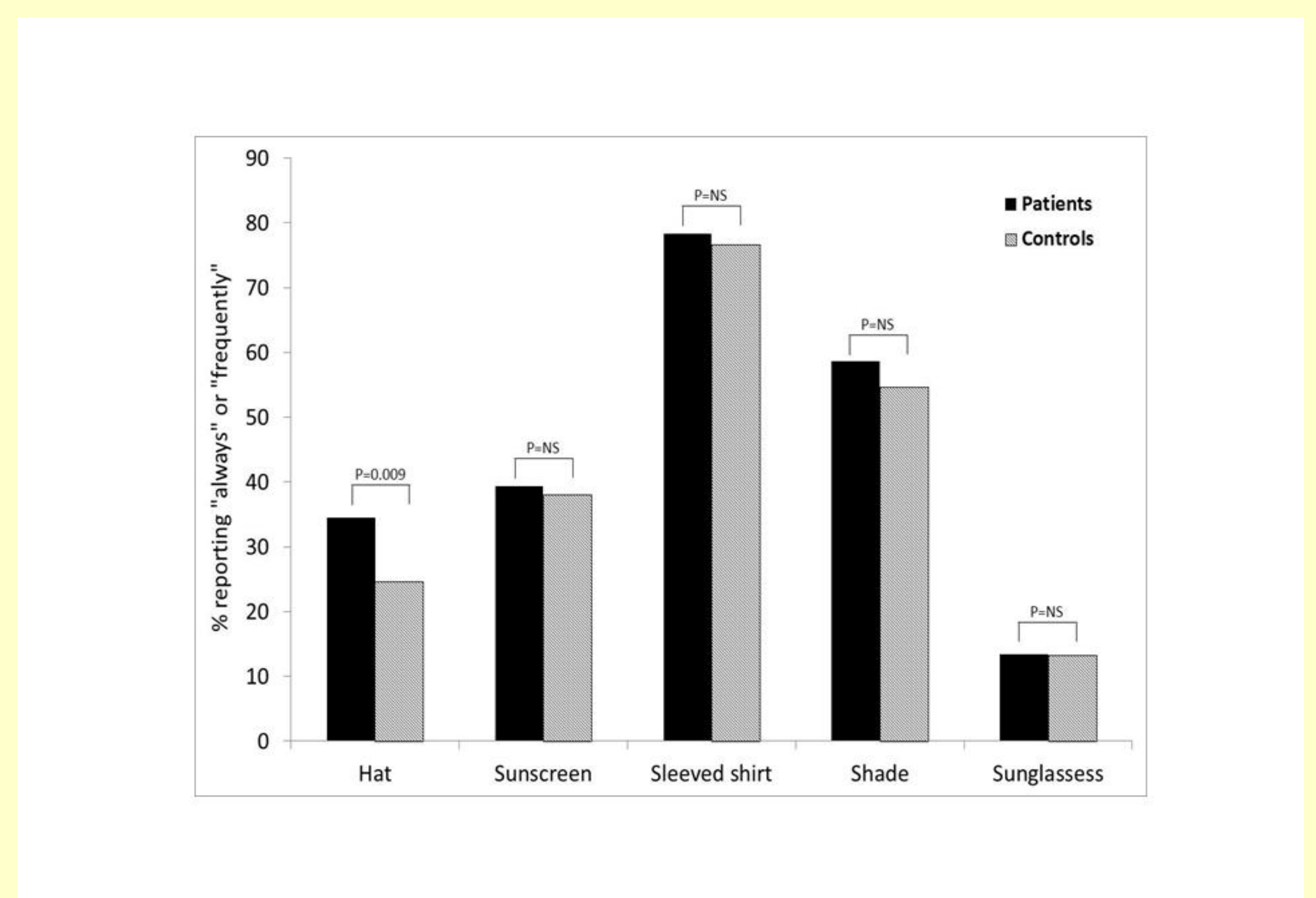


Figure 2: Sun protection habits of patients compared to controls

IV. Conclusion: Sun exposure of children with a history of malignancy is decreased compared to healthy controls. The combination of sunlight avoidance and inadequate calcium intake might have deleterious implications for bone health and a possible effect of hypovitaminosis D in the context of malignancy. Dietary interventions to optimize intake of vitamin D and calcium may be required.