Preventing Skin Cancer: Child Care Center-Based Interventions

Summary Evidence Table for Updated Search Period (June 2000 – May 2011)

Study Details	Population characteristics	Intervention Characteristics	Outcome measures	Results
Author and date: Stover et al., 2012 **Study Design:** Before After **Quality of Execution:** Fair **Location:** Germany (Nationwide)	**Target population:** Parent, staff, and children **Setting:** Preschool **Demographics:** Age: 0-12 yrs. (mean 3.8 yrs), Race/ethnicity: NR, Skin type (I-III): 84%, sensitive (fair skin), SES: NR	**Intervention:** 'Sunpass' program **Intervention components:** Educational: Lecture by dermatologist (1hr.) about 'good sun, bad sun' for parents and caregivers and first site inspection, focusing on sun-related topics Leaflets to parents For children: 'Paul the Mascot' – used to convey and reinforce sun safety messages (posters and discussion with children) Policy: A written sun protection policy was developed in consultation with all members of the day-care centre and the medical staff of the certification committee. It was in accordance with the guidelines for sun protection policies of the Cancer Council	**Intervention implementation period:** Summer 2010 **Follow-up period:** 1 week following intervention; **Outcomes of Interest:** **Protective behaviors** By parents: 1.Sunscreen Use (Parents used sunscreen on children once/day) 2.Combined protective behaviors (wear protective clothing, seek shade, and avoid sun exposure during peak hours) By staff: 1.Sunscreen use (apply sunscreen 20 mins before going outside) 2.Shade use (use of shade if not using headgear)	**Population size(n)** Pre: Parents: 2286; Staff: 448 Post: Parents:1100; Staff: 330 **Protective behaviors:** (population proportion change) **1. Sunscreen use: (%)** Parents: Pre (%) Post (%) 89.0 % 90.6% Absolute percentage point change= 1.6 (-0.5, 3.7) Staff: Pre (%) Post (%) 44.6 % 46.2% Absolute percentage point change= 1.6 (-2.0, 5.2) **2. Hat use:** Staff: Pre (%) Post (%) 72.4% 80.5% Absolute percentage point change= 8.1 (5.1, 11.1) **3. Shade use:** Staff Pre (%) Post (%) 19.0 % 27.6% Absolute percentage point change= 8.6 (1.6, 5.5)

Study Details	Population characteristics	Intervention Characteristics	Outcome measures	Results
		Victoria, Australia (March 2008). Published on blackboard of day care centre each day <u>Environmental:</u> Sample of liposomal based sunscreen distributed and shaded area were in premises **Incentives:** Sunpass kindergarten certificate **Outcome assessment setting:** Childcare center and other setting (outside) **Intervention for Control group:** NA	3. Hat use (use of headgear (on all or most of the children) 4. Avoidance of sun exposure a) Outdoor activities scheduled outside peak UV hours b) Lunch and snacks taken inside c) Excursions take place very early or late during the day	**4. Combined protective behaviors:** Pre (%) Post (%) 63.5 % 70.1% Absolute percentage point change= 6.6 (3.3, 9.0) **5. Avoidance of sun exposure:** a) Outdoor activities scheduled outside peak UV hrs <u>Staff</u> Pre (%) Post (%) 58.7 % 66.8% Absolute percentage point change= 8.1 (4.7, 11.5) b) Lunch and snacks taken inside Pre (%) Post (%) 62.7 % 66.8% Absolute percentage point change= 4.1 (0.7,7.5) c) Excursions take place early or late in the day Pre (%) Post (%) 36.0 % 34.2% Absolute percentage point change= +1.8(-1.6, 5.2) **Secondary outcomes:** **1. Increase in %age of shaded area** Outside shaded area (consisted of ≥80% shade) increased from 15.6% to 22.7%, p=0.127

Study Details	Population characteristics	Intervention Characteristics	Outcome measures	Results
Author and date: Aulbert et al., 2009 **Study Design:** Before After **Quality of Execution:** Fair **Location:** Germany (Berlin)	**Target population:** Parent, staff, and children **Setting:** Preschool **Demographics:** Age: 0-6 yrs Race/ethnicity: NR Skin type: NR SES: NR	**Intervention:** 'Sunpass' program ; **Included components:** Educational: Training sessions of 90 min for staff members and parents were conducted by a professional dermatologist followed by group discussion, UV index released daily (staff), leaflets distributed to the parents Policy: Same as Stover paper ; Environmental: Sample of liposomal based sunscreen distributed and shaded area were in premises **Incentives:** Sunpass kindergarten 2010 certificate **Outcome assessment setting:** Childcare center and other setting (outside); **Intervention for Control group:** NA	**Intervention implementation period:** April 2008 until June 2009 **Follow-up period:** 12 weeks following the training session; **Outcomes of Interest:** **Protective behaviors** (observed on 5 sunny days): 1.Hat use: (Proportion of children)- number of children wearing hat when playing outside **Secondary outcomes:** Environmental changes: Increase in %age of shaded area	**Population size(n):** Parents: 46; Staff: 12 (note: data from SR survey was not usable; observed data from the center was used to calculate the effect estimate) **Protective behaviors**: **1. Hat use (%** Pre (%) Post (%) 13.2% 73.0% Absolute percentage point change= 59.8 **Secondary outcomes:** **Increase in %age of shaded area** Proportion of shaded playground increased from 70%–80% before intervention to 90% after intervention
Author and date: Gritz et al., 2005 &	**Target population:** Parent, staff, and	**Intervention:** Sun Protection is Fun!	**Intervention implementation**	**Population size(n)** Parents:

Study Details	Population characteristics	Intervention Characteristics	Outcome measures	Results
2007 **Study Design:** Randomized control trial **Quality of Execution:** Fair **Location:** USA, Greater Houston area	children **Setting:** Preschool **Demographics:** Age: <5 yrs Race/ethnicity:48% white Skin type:NR SES:NR	(S.P.F.) **Included components:** Educational: Parent intervention – small media (video, newsletter, handbook); Staff (on-site): training, an instructional video, newsletters Children: participated in classroom activities from the SPF curriculum Policy: curriculum to educate preschoolers about sun protection. Staff was encouraged to adopt sun protective gears on children Environmental: Free sunscreen for both parents and staff; Staff set up shade area when went outside; **Incentives:** Schools received free sunscreen samples. **Outcome assessment setting:** Center and outside **Intervention for Control group:** No intervention	**period:** End of summer, 1996 to the end of summer, 1998 **Follow-up period:** FU1: 12 mos FU2: 24 mos ; **Outcomes of Interest:** **Protective behaviors** (observed on 5 sunny days): 1.Sunscreen use on children Parents: (on scale 6-30): apply sunscreen- 30 min. before going outside, every 1.5-2 hrs, spf15+, apply when outside, apply morning before school Staff :(scale 5-25): Same as parents except the last one 2.Combined behavior: (scale 5-25): Children wear hats or caps, shirts with sleeves, wear tank tops, long shorts, set up shaded area	BL: 384, FU1: 640, FU2: 694 Staff: BL: 245, FU1: 192, FU2: 225 **Protective behaviors:** **1.Sunscreen use** (Mean change on 6 item scale) Parents FU1: Mean difference between intervention and control (SD): 0.92 (0.37, 1.47) pts FU2: Mean difference between intervention and control (SD): 0.96 (0.52, 1.40) pts Staff FU1: Mean difference between intervention and control (SD): 5.73 (3.89, 7.61) pts; FU2: Mean difference between intervention and control (SD) : 7.41 (8.56, 6.26) pts **2.Combined behavior** (Group means change on 5 item scale) Parents FU1: Mean difference between intervention and control (SD): 0.92 (0.37, 1.47) pts FU2: Mean difference between intervention and control (SD): 0.96 (0.52, 1.40) pts Staff FU1: Mean difference between intervention and control (SD): 5.73 (3.89, 7.61) pts; FU2: Mean difference between intervention and control (SD) : 7.41 (8.56, 6.26) pts

Study Details	Population characteristics	Intervention Characteristics	Outcome measures	Results
Author and date: Bauer et al., 2005 **Study Design:** Randomized Control Trial **Quality of Execution:** Fair **Location:** Germany	**Target population:** Parents **Setting:** Preschools **Demographics:** Age: Mean age 4.3 yrs. Race/ethnicity: NR Skin type: Type 1 (12%) SES: NR	**Intervention:** Educational intervention **Included components:** <u>Educational:</u> Arm 1: Educational material 3 times yearly with more detailed information on proper sunscreen use and sun protection than the educational session provided at study commencement; they also received information brochures from public melanoma prevention campaigns with detailed information. <u>Environmental:</u> Arm 2: Above+ 800 ml free broad spectrum sunscreens (SPF 25) provided on a yearly basis with instructions to apply sunscreens during the times of intensive solar radiation from Spring to Autumn **Incentives:** None **Outcome assessment setting:** Other setting than childcare	**Intervention implementation period:** March to October 1998; **Follow-up period:** 3 yrs; **Outcomes of Interest:** **<u>Protective behaviors</u>** (at the beach or outdoor swimming pool) 1.Sunscreen use a)almost always b)Any use 2.Hat use 3.Clothing use a)T-shirt b)T-shirt, trunks, and shorts 4.Avoidance of sun exposure a)Median time in sun (hr/day) during holidays in sunny climate b) Mean time in sun (hr/day) outside at home **<u>Incidence of new mole formation</u>** Median number of new moles developed in 3 years	**Population size(n)** BL FU Arm 1: 624 (26 schools) 369 Arm 2: 626 (25 schools) 465 Control: 637 (27 schools) 398 **Protective behaviors** **1.Sunscreen use: (proportion of children)** a)Almost always (% student) Arm 1 Arm 2 Control 84.8 88.4 83.1 Absolute percentage point change (SD) +1.7 (-3.5, 6.9) 5.3 (0.6, 10.0) b)Any use (% student) Arm 1 Arm 2 Control 99.7 99.4 98.0 Absolute percentage point change (SD) 1.7 (0.2, 3.2) 1.4 (-0.1, 2.9) **2.Hat use: (% children)** Arm 1 Arm 2 Control 7.3 8.7 7.0 Absolute percentage point change (SD) 0.3 (-3.4, 4.0) 1.7 (-1.9, 5.3) **3.Clothing use** (% children) a)T-shirt Arm 1 Arm 2 Control 10.1 13.4 13.1 Absolute percentage point change (SD) -3.0 (-7.5, 1.5) 0.3 (-4.2, 4.8) **4.Avoidance of sun exposure** (Median change) a)Median time in sun (hr/day) during holidays in sunny climate (IQR)

Study Details	Population characteristics	Intervention Characteristics	Outcome measures	Results
		Parents were informed on study purpose and sun protection measures only at an initial educational meeting **Intervention for Control group**: No intervention	**<u>Incidence of sunburn</u>** Proportion of children with sunburn between 1998-2001	Arm 1 Arm 2 Control 0(-1,1) 0(-1,1) 0(-1,1) Median change: 0 hours/day (p=0.061) b) Mean time in sun (hr/day) outside at home (SD) Arm 1 Arm 2 Control 0.24 (±1.09) 0.14 (±1.13) 0.15(±1.12) Mean change: -0.10 hrs/day -0.9 hrs/day (p=0.35) **5. Incidence of new mole formation between 1998-2001** (Median(IQR) Arm 1 Arm 2 Control 26 (16, 41) 27 (18, 40) 27(17,40) Mean change: No change (p=0.779) **6. Incidence of sunburn** (% children) Arm 1 Arm 2 Control 21.5% 22.0% 23.2% Absolute percentage point change (SD) -1.7 (-7.6, 4.2) -1.2 (-6.8, 4.4)
Author and date: Kenfield et al., 2005 **Study Design:** Cross-sectional survey **Quality of Execution:** Fair **Location:** USA (MA)	**Target population:** Center directors and associates **Setting:** Daycare center **Demographics:** Age:2.9-7 yrs, Race/ethnicity: Non-Hispanic white 72%, Skin type: NR, SES: Average median household income $53,984	**Intervention:** Sun protection policies and practices at child care centers in Massachusetts; **Included components:** <u>Policy</u> (sun protection policies and practices regulations in child care centers) **Incentives:** None	**Intervention implementation period:** NR **Follow-up period:** One time survey- Telephone surveys were conducted in July and August of 2002; **Outcomes of Interest:** **<u>Protective behaviors</u>** (centers with policies	**Protective behaviors** **1.Sunscreen use: (% of centers)** Policy Yes No Number of centers (147) (165) Always 59% 42% Absolute percentage point change= 17.2 (6.3, 28.1) **2. Hat use: (% of centers)** Policy Yes No Number of centers (113) (202) Always 11.5% 9.9% Absolute percentage point change= 1.6

Study Details	Population characteristics	Intervention Characteristics	Outcome measures	Results
		Outcome assessment setting: Childcare setting **Intervention for Control group:** NA	vs. centers with no policies) 1.Sunscreen use 2.Hat use 3.Time spent outdoors during peak hrs <60 mins	(-5.6, 8.8) **3. Time spent outdoors during peak hrs (% of centers)** Policy Yes No Number of centers (134) (181) ≤60 minutes outside during peak hours (10 am to 2 pm) 41.4% 26.8% Absolute percentage point change= 14.6 (4.2, 24.9)
Author and date: Syson-Nibbs et al., 2005 **Study Design:** Randomized Control Trial **Quality of Execution:** Fair **Location:** East Midlands, UK	**Target population:** Child care center staff **Setting:** Preschool **Demographics:** Age:3-4 yrs Race/ethnicity:NR Skin type:83.4% (sensitive skin) SES:NR	**Intervention:** Health visitors' visits to childcare center **Included components:** Policy: Health visitors worked with leaders on their sun safety policy and practices **Incentives:** None **Outcome assessment setting:** Childcare setting; **Intervention for Control group:** No intervention	**Intervention implementation period:** May to July (3 visits) **Follow-up period:** 1 month (end of July); **Outcomes of Interest:** **Protective behaviors** (observed number of children wearing sunhat) 1.Hat use (among intervention group) **Secondary outcomes** Change in number of preschools from pre- and post- intervention with written policies	**Population size(n)** Intervention group (33) Control (41) (No observations were conducted in control group since survey revealed that no changes to sun safety policies or practices were instigated during the research in control establishments) **Protective behaviors** **1.Hat use** (among intervention group)- (%of children wearing hats) Relationship between policy score and hat wearing on a sunny day (observed): r=0.40 (p<0.05) **Secondary outcomes** Change in number of preschools from pre- and post- intervention with written policies 29/31 (88%) intervention facilities adopted written sun safety policies, vs. no control facilities (p<0.001)