APPENDIX 1: SUMMARY TABLES

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Table 1: Setting: Mass Consumer Media

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
Gelb, Boutwell & Cummings (1994). Houston, Austin & Corpus Christi, Texas USA	Using mass media communication for health promotion: Results from a cancer center effort.	"Under Cover" Brochures, news conferences, interviews, public service announcements (TV / radio), promotions at baseball game	Before & after study (n = 250 in 1990, Houston only; 400 in each city 1992) Telephone survey Houston 1990 before programme then after (exact timing details not specified) Study rated -	Adults (unspecified)	Statistically significant difference in self reported action to reduce risk of skin cancer for those remembering 'Under Cover' Austin: p <0.25 Corpus Christi: p <,0.001 Houston: p <, 0.01	Reliant on self-reported behaviour change. No explanation for differing results across three cities. While description of material supplied is provided, actual use is not. Cannot therefore determine relative impact of each component. *Probably applicable only to population/ setting studied.*
Del Mar, Green, & Battistutta, D. (1997). Queensland Australia	Do public media campaigns designed to increase skin cancer awareness result in increased skin excision rates?	Multi-media with focus on TV advertising – run twice over 2 ½ year period	Before & after study (n = 3,221 lesions excised. Number of lesions excised compared before campaign, after 1st campaign, between 1st and 2nd campaign and after 2nd. *Study quality rated -*	Adults ***Presenting with potentially malignant skin lesion***	Statistically significant increase in excised lesions during campaign period (p<0.0001). Also seasonal effects (p <0.001)	Authors note cost of mass media campaigns. No measure of any change in sun- protective behaviours. Possible confounding factors such as exposure to other material. *Probably applicable only to population/ setting studied.*

Table 2.1: Education Settings: Mass Media Campaigns*: University Students

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
University Students						
Cody & Lee (1990) Newcastle, Australia *WMHTAC report: ref 25 and table 38*	Behaviours, beliefs and intentions in skin cancer prevention	Videos in used university setting.	RCT (n=312) 3 arms: Compared informational video (n = 114) and emotional video (n = 108). Control group (n = 90) exposed to neither. Baseline test, then immediately after exposure then repeated 10 weeks later. *Study quality:* -	First year psychology students (mean age = 20 years, 58% female, 8% had history of skin cancer).	Significantly higher knowledge for information-based group compared to control immediately after exposure and at 10 weeks follow-up. Non significant increase in knowledge for both emotional-based and control group immediately after exposure and at 10 week follow-up. P-values not given Initial intentions significantly higher for both information- based and emotional-based groups compared to control. Significant decrease from post-intervention measure at 10 weeks for information and control groups	Potential for confounding effects of exposure to previous interventions such as state-wide or community-based interventions. No information provided regarding potential confounding factors such as positive or negative message framing or comprehension effects. See also comments re use of student samples. *Probably applicable only to population/ setting studied.*

Table 2.1: Education Settings: Mass Media Campaigns*: University Students (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Mahler et al. (2007) San Diego, USA *WMHTAC report: ref 63 and table 60*	Long term effects of appearance-based interventions on sun protection behaviours	Videotaped slide show relating to photo-aging plus UV photos of individual participants used	RCT (n= 133) 4 arms: Separate groups watched video only (n = 34), saw only UV photos of their own skin damage (n= 35) or saw both video and UV photos (n = 30). Control group (n=34) exposed to neither. No baseline test. Post-test immediately after intervention. *Study quality rated +*	Undergraduate students (year and subject area unspecified). 80% of respondents were female.	Focus on self- reported future behavioural intentions with regard to sun protection. Effects of video exposure significant (P = 0.003at immediate post intervention test. Effects of participants photos UV exposure were not significant (p <0.13) No interaction found between photo and video intervention	Confounding factors as for Cody & Lee study. Also: small sample sizes for all groups; No baseline measure. Further confounding likely via distribution of sunscreen after initial test. Post test results one year later not included. *Probably applicable only to population/ setting studied.*
Mahler et al. (2005) California *WMHTAC report - ref 62 and table 59.*	Effects of UV photographs, photo-aging information and use of sunless tanning lotions	As for Mahler 2007, with inclusion of sunless tanning lotion discussion	RCT (n= 146) Separate groups watched video and saw facial UV photos (n=50), discussed sunless tanning lotion (n=46). Control (n = 50) No baseline. Post-test immediately after intervention *Study quality rated +*	Undergraduate students (year and subject area unspecified). 78% of respondents were female.	P-values not reported as only calculated for both intervention and control. Means and standard deviations given for intentions to use sunscreen, photo aging and sun protection perceptions, cost of sunscreen, perceived susceptibility to / severity of photo aging and efficacy of sunscreen use	Confounding factors as above (Mahler 2007). *Probably applicable only to population/ setting studied.*

Table 2.1: Education Settings: Mass Media Campaigns*: University Students (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Mickler (1999) USA. *WMHTAC report: ref 68 and table 65*	A comparison of three methods of teaching skin self-examinations	Video providing information on skin cancer, including detection and protection advice	RCT (n = 143). Group viewing video (n=39) compared to other groups: a) reading 'commonly used' leaflets / brochures (n = 35) b) group receiving one-to-one nurse led training on skin examination and skin cancer recognition (n = 33) Control group (n = 36) given information on leadership skill development – but given nurse-led skin cancer education after the intervention. Baseline measure then knowledge tested immediately after intervention and again three weeks later. *Study quality rated ++*	University undergraduate psychology students	All intervention groups showed significantly higher knowledge than control group. Significance levels not reported	Confounding factors as for Cody & Lee study. Small sample sizes for all groups. No baseline measurement. Restricted to measuring knowledge; no measurement of changes in attitude and behaviours. *Probably applicable only to population/ setting studied.*

Table 2.2: Education Settings: New Media*: University Students

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Bernhardt (2001). South East USA. *WMHTAC report: ref 6 and table 24*	Tailoring messages and design in a Web-based skin cancer prevention intervention	2 types of web-based material tested	RCT (n = 83). Web pages containing either tailored (based on personal risk factors) (n = 47) or generic sun protection information (n = 36) tested immediately after intervention. *Study quality rated +*	University undergraduate students (year and subject not provided)	Significant difference in self-reported importance / effects of tanning in tailored group $p<0.01$ / 0.05. No significant difference between groups in sunscreen use. Significance data not provided for the latter.	No baseline. Small sample. Self- reported – not behavioural data. Potential bias – students likely to be used to using internet-based resources than general population. *Probably applicable only to population/ setting studied.*

Table 2.3: Education Settings: Mixed Methods: Lecture plus supporting visual material: University Students

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Jackson et al. (2006) Phoenix Arizona. *WMHTAC report: ref 52 and table 52*	Evaluation of a multi-component appearance-based sun-protective intervention for young women	Educational sessions including videotape testimonial from woman diagnosed with skin cancer	RCT (n = 211) Intervention (n= 105) and control (n=106). Baseline then post test immediately after intervention. Sunscreen sample given after first test – 2nd follow up therefore not reported. *Study quality rated* ++	Introductory psychology students	Knowledge significantly increased in intervention group compared to control group p<0.01. Significant difference in perceived susceptibility, severity of photo-aging and benefits of sun protection p<0.01. Differences re risk of skin cancer not significant p values not given	Probably high baseline knowledge due to geographic location. See caveat re use of student samples "Small proportion of participants had history (unspecified) of skin cancer" Based on self- reporting. *Probably applicable only to population/ setting studied.*
Katz & Jernigan (1991) USA (location not given). *WMHTAC report: ref 55 and table 55*	Brief report: an empirically derived educational program for detecting and preventing skin cancer	Presentation on skin cancer and preventative measures. Lecture supported by slides of different types of skin cancer	RCT (n= unclear: WMHTAC estimate 40 – 43) Baseline then test immediately after lecture then 2 weeks after intervention. *Study quality rated* -	College students (year and subject unknown)	Statistically significant improvement in knowledge in intervention group immediately after intervention (p <0.0001 but significant decrease in knowledge after two weeks (p value not given)	See caveat re use of student samples. **Authors specifically notes groups were college students seeking extra course work credits** Appears to be small sample (40 – 43), no demographic details provided. Study did not investigate how education translates into behaviour. *Probably applicable only to population/ setting studied.*

Table 2.3: Education Settings: Mixed Methods: Lecture plus supporting visual material: University Students (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
McClendon & Prentice-Dunn (2001) USA – location not specified. *WMHTAC report: ref 65 and table 62*	Reducing skin cancer risk: An intervention based on protection motivation theory	2 x 60 – 75 minute session: lecture with video and essay	RCT (n = 61) Intervention & control (n in groups not given). *Study quality rated* ++	Introductory Psychology students	Reported perceptions regarding vulnerability, threat and self efficacy but reported means and standard deviations rather than providing statistical significance outcomes	Small sample (61). See caveat re use of student samples *Probably applicable only to population/ setting studied.*
Gooderham & Guenther (1999a). *Project linked to Liu et al.* London Ontario, Canada	Impact of a sun awareness curriculum on medical students' knowledge, attitudes, and behaviour.	Intervention incorporated into 1 week of dermatology curriculum activity for 1st year medical students.. Students then required to preoepare lecture for primary school students - see Gooderham & Guenther(1999b).	Before & after study (n = 98) Questionnaire 1 month prior to teaching week then 1 week after curriculum finished *Study quality rated* +	First year medical students	Significant improvement in sun awareness knowledge ($p<0.001$). Significant reduction in belief tanned appearance was healthy ($p<0.03$). Significant improvement in intention to use sun protection regularly among men ($p<0.001$) but not women	Latter part of study focussed on behavioural intention rather than actual behaviour change. *Probably applicable only to population/ setting studied.*

Table 2.3: Education Settings: Mixed Methods: Lecture plus supporting visual material: University Students (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
Liu, Barankin, Howard, & Guenther, (2001). London Ontario, Canada	One-Year Followup on the Impact of a Sun Awareness Curriculum on Medical Students' Knowledge, Attitudes, and Behavior.	As for Gooderham & Guenther (1999) above 1 year follow up on 1999 study	Before & after study (n = 98). See Gooderham & Guenther (1999a) for first stage. Final questionnaire administered 1 year after teaching *Study quality rated* -	First year medical students	"Noticable loss of knowledge" from 1999 study. Redution in reported sunburn (p values not provided). Increase in use of higher SPF sunscreen (P<0.022). Intention to change time of outdoor activity or use of hats / clothing for sun protection noted in 1999 study did not occur in this follow up.	Reduction in sunburns reliant on self reporting. *Probably applicable only to population/ setting studied.*

Table 2.4: Educational Setting: Printed Material: University Students

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Boer et al (2006) Enschede Netherlands *WMHTAC report: ref 7 and table 25*	Effects of pictures and textual arguments in sun protection public service announcements	Booklets with variety of public service announcements	RCT (n = 159) Three groups: - Picture plus text (n = 39); Picture only (n = 40); Text only (n = 40;Control (n = 40) Attractiveness, credibility and comprehensibility measured with knowledge immediately after intervention *Study quality rated* ++	Undergraduate university students (year and subject not reported)	No statistically significant difference in knowledge reported. Other factors assessed not reported	No baseline measurement. Outcomes measured only after intervention. Insufficient details given to determine whether differences in message framing may have confounded results. See caveat re use of student samples *Probably applicable only to population/ setting studied.*
Cho & Salmon (2006) USA. *WMHTAC report: ref 23 and table 36*	Fear appeals for individuals in different stages of change: intended and unintended effects and implications on public health campaigns	2 x types of messages tested. Format of delivery unclear	RCT (274) High versus low threat messages tested. Number assigned to each arm not reported. Tested at 4 weeks after intervention *Study quality rated* -	Undergraduate university students (year and subject not reported)	High threat message recipients likely to report more sun safe behaviour p<0.001	No baseline measure. Insufficient details provided of methods or demographics etc. Artificial environment. See caveat re use of student samples *Probably applicable only to population/ setting studied.*

Table 2.4: Educational Setting: Printed Material: University Students (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Jones et al (1994) USA. *WMHTAC report: ref 54 and table 53*	Effects of appearance-based admonitions against sun exposure on tanning intentions in young adults	3 x types tanning essays tested	RCT (n=136) Three groups: - Health based essay (n = 44) - Appearance-based essay (n=46) - Neutral essay (control: n = 46) Tested immediately after intervention *Study quality rated -*	Undergraduate university students	Health-based more convincing than control; appearance group more likely to use sunscreen than health group. No significance data provided	Possible socially desirably responding / pleasing researchers noted by study authors. No baseline measure. Poor reporting of methodology and of results. See caveat re use of student samples. *Probably applicable only to population/ setting studied.*
McMath & Prentice-Dunn (2005) Alabama USA. *WMHTAC ref 66 and table 63*	Protection motivation theory and skin cancer risk	4 types of essays with different threat / coping levels	RCT (n = 208): combinations of high / low threat and coping. Numbers assigned to each arm not reported. Tested immediately after intervention. *Study quality rated -*	Undergraduate university student who sunbathe	High threat message groups scored higher on beliefs in severity of / vulnerability to skin cancer. High coping groups increased perceptions of self-efficacy. No significance data provided	No baseline measure. Intention only reported not actual behaviours. See caveat re use of student samples *Probably applicable only to population/ setting studied.*

Table 2.4: Educational Setting: Printed Material: University Students (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Prentice-Dunn et al. (1997) USA. *WMHTAC report: ref 81 and table 68*	Persuasive appeals and the reduction of skin cancer risk	Variety of essays giving benefits / behaviour re tanning	RCT (n= 140) Essays with different levels of tan benefits and efficacy of recommended behaviours compared. Numbers assigned to study arms not reported. Tested immediately after intervention. *Study quality rated -*	University undergraduate students	High efficacy groups scored higher. Messages stressing new social norms re tanning more effective re intentions to take precautions than those stressing perceived benefits of tanning.	No baseline measure, no demographics Intention only reported not actual behaviours. See caveat re use of student samples *Probably applicable only to population/ setting studied.*
Rothman (1993) Yale USA. *WMHTAC report: ref 88 and table 74*	The influence of message framing on intentions to perform health behaviours	Pamphlets with different message framing	RCT (n=208) Two groups – one read positive and one negatively framed pamphlet in class setting. Numbers assigned to study arms not reported. Tested immediately after intervention. *Study quality rated +*	University undergraduate students (year and subject not given)	Positive framed group significantly higher positive reaction scores. Specific p scores not provided. Negative framed group perceived higher mean risk of developing skin cancer	See caveat re use of student samples . Knowledge assessed but not reported. *Probably applicable only to population/ setting studied.*

Table 2.4: Educational Setting: Printed Material: University Students (page 4)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Stephenson & Witte (1998) South West USA. *WMHTAC report: ref 93 and table 76*	Fear, threat and perceptions of efficacy from frightening skin cancer messages	4 different messages (delivery unclear) assessed	RCT (n = 98) Hypothesis tested. Numbers assigned to study arms not reported. *Study quality rated* -	University undergraduate students (year and subject not given)	High threat / high efficacy led to danger control. High efficacy measures led to more positive attitudes re protective behaviours and stronger intentions to follow recommended behaviours. No significance data reported.	See caveat re use of student samples. No baseline measures. Long term effects not assessed. *Probably applicable only to population/ setting studied.*
Castle et al. (1999) South coast (unspecified) of UK. *WMHTAC report: ref 22 and table 35*	Young women and sun tanning: an evaluation of a health education leaflet	Health Education Authority leaflet distributed	RCT (n= 99): Intervention (n=66) Control (n=33). Follow up at one week *Study quality rated* +	Female students at College of Further Education	Significant increase in knowledge p= 0.001 Significant difference in move from action to non-action stages of change. Significance details not reported	Groups not similar. Knowledge assessment only. See critique of stage of change model. See caveat re use of student samples. *Probably applicable only to population/ setting studied.*

Table 2.4: Educational Setting: Printed Material: University Students (page 5)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
University Students						
Greene et al. (2003) 'mid sized South eastern University USA. *WMHTAC report: ref 45 and table 46*	Messages influencing college women's tanning bed use	Manual distribution: Survey completion	Controlled before and after Survey completion with presence or absence of statistical / narrative or no message. Self-assessment of personal risk of skin cancer and risk of sunbed use Telephone survey 3 – 4 weeks after. *Study quality rated -*	Female college students	Statistical message significantly better than narrative or no message P <0.05	See caveat re use of student samples. *Probably applicable only to population/ setting studied.*

Table 2.5: Education Settings: Mixed Methods - Video and printed material: Secondary School Students (page 1)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Secondary School based						
Mermelstein et al. (1992) Chicago USA. *WMHTAC report: ref 67 and table 64*	Changing knowledge and attitudes about skin cancer risk factors in adolescents	45 minute lesson comprising 12 minute video and elaboration / discussion Worksheet provided for students	RCT (n=1,703) 5 schools in control and 5 in intervention group. Numbers assigned to arms not specified Questionnaires administered 2 weeks apart (1 week before and 1week after intervention). *Study quality rated -*	WMHTAC estimate 14 – 16 year olds	Significant increase in knowledge regarding skin cancer risk factors for intervention groups compared to control groups ($p<0.0001$).	Only partial information provided on demographics. Insufficient detail of intervention. No detail of past subject educational activity. *Probably applicable only to population/ setting studied.*
Syson-Nibbs (1996) Rural Derbyshire UK. *WMHTAC report: ref 94 and table 77*	Measuring the effectiveness of sun safety messages	Mixed method 2 x 40 minute sessions First: completed questionnaire then watched video, given leaflet to take home 2nd session used workbook	RCT (n = 145) intervention (n=70) group, Control (n=75) group. Note: similar methodology to Hughes et al. (1993) as testing applicability. 3rd session 3 months after class activity completed questionnaire. *Study quality rated -*	Secondary school students – age not provided	Statistically significant increase in knowledge between intervention and control groups ($p<0.0005$).	Small samples, possible contamination effects. High pre-intervention knowledge scores acknowledged by study authors. Possible variation in way intervention delivered to individual groups. ***Noted that students had to spend midday breaks outside with minimum shade!*** *Probably applicable only to population/ setting studied.*

Table 2.5: Education Settings: Mixed Methods -Video and printed material: Secondary School Students (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Hughes et al. (1993) UK: Liverpool, Rotherham, Rugby, London, Essex, Kent. *WMHTAC report: ref 51 and table 51*	Melanoma and skin cancer: evaluation of a health education programme for secondary schools	Intervention contained lessons using leaflet, workbook and video	RCT (n unclear – 543 in total at 1st post test, 466 in second) Intervention groups: 1: workbook plus leaflet, 2nd group also watched video, 3rd group given homework to design posters, 4th group discussed issues. Control group. Follow up questionnaire at 4 months *Study quality rated* -	Secondary school student aged 12 – 16 years	Significantly higher knowledge in all four intervention groups ($p<0.001$). No significant differences between intervention groups (no details given) See WMHTAC evidence tables for detailed mean and significance scores (individual items not composite)	Possibility of contamination as classes from the same school were allocated to different interventions. No information as to whether groups were similar at baseline. Attitudes and actual behaviours not measured. *Probably applicable only to population/ setting studied.*
Kristjansson et al. (2003) Stockholm County Sweden. *WMHTAC report: ref 57 and table 57*	'You and your skin': a short duration presentation of skin cancer prevention for teenagers	Educational package of OHP transparencies and short videotape (1 lesson) then unspecified student work / exercises	RCT (284 at baseline, 184 analysed) Intervention group (n=97) and control (n=87) across 5 schools. Baseline measure then 3 months later (questionnaire). *Study quality rated* +	Secondary school students aged 13 - 15	Significant increase in knowledge among intervention group compared to control group ($p<0.05$). Only two attitude statements showed significant differences. See WMHTAC evidence tables for detailed mean and significance scores (individual items not composite)	Possibility of contamination Groups not similar at baseline. Small numbers. Short follow up. No details of past subject educational activity. Behaviour change not measured. *Probably applicable only to population/ setting studied.*

Table 2.5: Education Settings: Mixed Methods - Video and printed material: Secondary School Students (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
Geller, Shamban, O'Riordan, Slygh, Kinney & Rosenberg, (2005). Palm Beach County, Florida, USA	Raising Sun Protection and Early Detection Awareness among Florida High Schoolers	Incorporation of sun protection material into science (biology) curriculum. Details not specified	Before & after study (n = 344 at baseline, 184 at post test). Questionnaire administered 3 months prior to curriculum delivery then at 5 months post delivery. *Study quality rated +*	High school students aged 15 – 18 years	Significant improvement in knowledge of skin cancer symptoms (P<0.001) but no significant difference in actual sun protection behaviours – slight decrease in self reported behaviour of always wearing sun protective clothing (p=0.03)	No explanation for high dropout (47%); authors s note that these students may have reported weaker knowledge. Authors also acknowledge likely over-reporting of desirable behaviours. Confounding effects from other community activity also acknowledged by authors.
Jansson, Boldeman, Dal, & Ullen (2003). Stockholm, Sweden	Skin cancer prevention in early childhood: an evaluation of a health education intervention among students in a preschool vocational programme.	Lesson – details not specified	Before & after study (n = 24 for pre-test 1, 365 for post test). Questionnaire administered immediately after lesson *Study quality rated -*	Students aged 16 – 19 on pre-vocational training programme	Focus on attitudes rather than behaviour change per se, e.g. protecting children from sunburn was rated important by females in post test (p<0.001)	Note "Childhood" in paper title, but 16 – 19 year olds in study. Only 24 in pre test. Remainder asked to report on their own pre-post attitudes.

Table 2.5: Education Settings: Mixed Methods - Video and printed material: Secondary School Students (page 4)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
Kamin, O'Neill, & Ahearn (1993). Texas USA	Developing and evaluating a cancer prevention teaching module for secondary education: Project SAFETY (Sun Awareness for Educating Today's Youth).	Lessons incorported into high school biology curriculum. Video, discusson and handouts	Before & after study (n = 387). Pre and post questionnaires – timing not specified *Study quality rated* -	High school students	Knowledge acquisition only reported with means and standard deviations.	Uses Stages of Change model (see critique in report)

Table 2.6a: Education Settings: Mixed Method - Verbal advice and website: Broad School Age Range

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Broad Age Range of Children: Includes both Primary and Secondary Children						
Geller et al. (2002 & 2003 – 2 reports this year) USA (exact location not specified). *WMHTAC report: ref 36, 37 and 39 and table 41*	3 reports in total:- The Environmental Protection Agency's National Sunwise School Program - Evaluation of the SunWise school program - Can an hour or two of sun protection education keep the sunburn away?	Group verbal advice plus use of SunWise website	Controlled before and after study (5,625 children) Self- administered baseline and post-test surveys at 6 and 12 month follow up. *Study quality rated -*	Children aged 5 – 15	Increase in knowledge for intervention groups compared to control only in some schools. No statistical significance reported	No information on whether / how website material used. Difference in outcomes may reflect this. Large age range. See comments re difference in children's cognitive ability. *Probably applicable only to population/ setting studied.*

Table 2.6b: Education Settings: New Media*: Primary School Children

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
Hornung et al. (2000) North Carolina USA. *WMHTAC report: ref 50 and table 50*	Interactive computer technology for skin cancer detection targeting children	CD-Rom based computer programme	RCT: Cartoon-based characters used to model different types of sun protection behaviours Intervention and control group. Baseline not reported, test immediately post intervention and at 7 months *Study quality rated +*	3rd and 4th grade elementary school children	Knowledge significantly higher in intervention group compared to control group both immediately after intervention and 7 months afterwards ($p<0.01$ / 0.05). No significant difference in self-reported behaviours in either measurement period (significance statistics not reported)	Age and grade not equally distributed. Contamination likely as students from the same school were allocated to different arms of the study. Study authors note potential bias from self- reporting and desire to be seen to answer 'correctly'. See also comments regarding limitations imposed by young children's cognitive development levels. *Probably applicable only to population/ setting studied.*
Hewitt et al. (2001) Nottingham shire UK. *WMHTAC report: ref 47 and table 49*	Evaluation of 'Sunsafe': a health education resource for primary schools	Either computer-based or workbook based lessons	Controlled before and after study (n=454) 1 control group 1 computer group 1 workbook group Numbers assigned to each arm not specified. Baseline and follow up at 6 weeks. *Study quality rated -*	Children 10 -11	Workbook group significantly higher knowledge than control ($p<0.05$). Computer group higher than control but difference not significant. No significant difference between intervention groups on attitudes or behavioural intent	Comments as above. No demographic details provided. Unable to determine if groups were equivalent. Study authors note control schools self-selected. *Probably applicable only to population/ setting studied.*

Table 2.7a: Educational Settings: Lesson Based, no details of support material: Primary School Children

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
Vitols et al. (1997) Sydney Australia. *WMHTAC Addendum: ref 3 and table 5*	Teaching Children about skin cancer prevention: why wait for adolescence	Lesson-based intervention compared to question and answer sessions No details of supporting material	Controlled before and after study (N=983) The two different types of intervention were delivered to different (unspecified) groups. Baseline questionnaire and follow-up 2 weeks later. *Study quality rated -*	Children 8 – 12 years	Both methods effective in increasing knowledge ($p<0.0005$). No significant difference between methods	See comments re children's cognitive development stages Authors note that children already had high baseline knowledge and suggest that answers given were those children thought they were expected to give rather than actual behaviours. *Probably applicable only to population/ setting studied.*
Loescher et al. (1995) USA (exact location not given). *WMHTAC report: ref 60 and table 58*	Educating preschoolers about sun safety	Teaching units (unspecified). No details of support material	RCT (n=70) Intervention and control groups (numbers unknown). Tested at baseline, 2week and 7 week post-test. *Study quality rated +*	Preschool	Significantly higher knowledge between intervention and control groups ($p=0.03$). No significant difference in application of sun safety ($p=0.032$)	Concerns as for Vitols et al. paper. *Probably applicable only to population/ setting studied.*

Table 2.7a: Educational Settings: Lesson Based, no details of support material: Primary School Children (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
English et al (2 studies) and Milne et al. (5 studies). Perth Australia WMHTAC report: English (ref 33 & 34) – Milne (ref 69, 70, 71, 72 & 73) and *table 56*	Seven reports in total relating to Kidskin programme See MWMHTAC references 33, 34 and 69 – 73 (7 reports in total)	Kidskin programme evaluated over time: Lesson-based sun protection curriculum. Components unclear.	Controlled before and after studies, Delivered in spring of 4 consecutive years Controlled before and after test. Three groups: high intervention n=402 Moderate n=472 Control n=749 Naevi counted in winter. *Study quality rated +*	School children aged 5 – 10. Note: High intervention group results not reported	No significant evidence of reduced sun exposure , suntan or naevus except for subgroup of boys on some anatomical sites. See WMHTAC evidence tables for individual mean and significance scores (individual items not composite)	Possible confounding effects noted in that control schools taught the standard West Australia Health Education curriculum and previous education. *Probably applicable only to population/ setting studied.*

Table 2.7a: Educational Settings: Lesson Based, no details of support material: Primary School Children (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
Buller et al (1994) Mesa Arizona USA. *WMHTAC report: ref 18 and table 29*	Sunshine and skin health (predecessor of Sunny Days, Healthy Ways)	Lesson based "five multi-disciplinary units" no details of any support material	Cluster RCT (n=139) Numbers assigned to each arm unclear. Questionnaire Pre-test, post test and 8 weeks later. *Study quality rated -*	School children age unclear Estimated by WMHTAC as 9 - 11 years	Significant increase in knowledge compared to control ($p<0.005$). Positive change in some behaviours (but significance not reported)	Only 2 schools involved – no details. Not all investigated measures were reported. No explanation for variations in results between post test periods. *Probably applicable only to population/ setting studied.*
Buller et al. (1998) USA (3 reports). *WMHTAC report: ref 12, 13 & 14 and table 31*	3 reports re Impact of behavioural intention on effectiveness of message features: evidence from the Family Sun Safety Project (and two other related studies)	Print material (newsletters / brochures with different language intensity Plus: children taught Sunny Days Healthy Ways curriculum	RCT (n= 768) comparing parents sent high versus low intensity material: Inductive: high language group n=190; low intensity n=192. Deductive: high intensity n=187 Low intensity n=199 Control unclear. *Study quality rated -*	Children aged 5 - 11 via parents	No significant difference between groups in summer sun protection ($p=0.627, 0.620, 0.245$). Significant difference in 5 of 7 behaviours in winter sun protection ($p=0.027, 0.020, 0.203, 0.0045, 0.041$	Possible contamination from children's lessons. *Probably applicable only to population/ setting studied.*

Table 2.7a: Educational Settings: Lesson Based, no details of support material: Primary School Children (page 4)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
Girgis et al. (1993) Australia. *WMHTAC report: ref 41 and table 44*	Evaluation of interventions to improve solar protection in schools	Based on NSW Cancer Council 'Skin Safe' booklet Role of teacher not specified). 'Cooperative learning techniques, student participation and problem-based learning strategies'. Ran over 4 weeks	RCT (n=612) Intervention and control groups at several locations. Intensive intervention n=247, standard n= 180 and control n=185 Focus on knowledge and attitudes. Diaries completed over 5 days, tests at 5 weeks and 8 months. *Study quality rated -*	Primary school children aged 9 – 11	Results reported only as regression analysis. Intervention was predictor of higher solar protection compared to control group	No information on how many schools involved or demographic profiles of students. Socio-economic differences noted between intervention and control groups. Significant difference in baseline sun protection behaviours noted by study authors – **including school uniform requirements which may have limited sun protection behaviours.** *Probably applicable only to population/ setting studied.*
Buller et al. (2006b) and Reynolds et al. (2006) Colorado, New Mexico & Arizona. *WMHTAC report: ref 15 & 85 and table 34*	2 reports: Effects of the Sunny Days, Healthy Ways curriculum on students in grades 6 - 8	Lessons (unspecified)	RCT (n= 1,788) Intervention & control (n not provided for groups) Knowledge assessed (unclear as to how long after interventions), plus children kept diaries. *Study quality rated +*	Children in grades 6 - 8	Significantly higher knowledge in intervention group ($p<0.0001$). No significant difference in sun protection behaviour via diary analysis (mixed results by time of day)	High UV exposure region, probably high existing awareness. Timing late winter / early spring. Diary covered only part of day. Analysis did not include partial substitute behavioural choices. *Due to the above limitations, probably applicable only to population / setting studied.*

Table 2.7a: Educational Settings: Lesson Based, no details of support material: Primary School Children (page 5)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Freak (2007) Bournemouth, Dorset, UK	Evaluation of a sun awareness project for schoolchildren.	Lesson based – over several weeks leading up to Sun Awareness week (lesson details not specified)	Before & after study (n = "approximately 200") Pre and post test. Timing of questionnaire administration not clear. *Study quality rated -*	Children aged 4 – 7 years. Parents and teachers secondary targets.	Author's opinion of success of intervention reported. No statistical data provided.	Extremely poor reporting *Probably applicable only to population/ setting studied.*
Bastuji-Garin,, Grob, Grognard, Grosjean, & Guillaume, (1999). Paris, Tours and Marseilles, France.	Melanoma Prevention. Evaluation of a Health Education Campaign for Primary Schools	Package (details not specified) of material presented as game; booklet of solutions for teachers. Used over 4 week period	Before & after study (n =228). Questionnaire 9 months before intervention, then 3 months after (end of summer) *Study quality rated -*	Children aged 10 years (4th year of primary school) across 5 schools	Significant increase in claimed sun protection activity: Hats: $p<0.01$;Sunscreen $p<0.03$ and sun exposure ($p<0.005$ for arms and $p<0.001$ for trunk, legs and head)	Note: actual data collected 1991. Children in pre test asked to reflect back on past behaviour (time gap); also possible attempts by children to please researchers with desired rather than actual behaviours.

Table 2.7a: Educational Settings: Lesson Based, no details of support material: Primary School Children (page 5)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Perkins (1993) Southampton UK	Prevention through education. A pilot study on skin cancer education in primary schools.	In class intervention but details not provided	Before & after study (n =105) Questionnaire 2 weeks before intervention and 12 weeks post intervention. *Study quality rated +*	5 – 8 year olds across two schools.	Knowledge only tested, not actual behaviours. Significant increase only for 1 of 2 schools and only for 5 – 6 year olds ($p<0.0317$)	No explanation of variation in impact between schools. Authors question whether higher acquired knowledge among older children accounts for lack of knowledge change.

Table 2.7b: Educational Settings: Health Fair: Primary School Children

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
Buller et al. (1997). Tuscon Arizona USA Note: study conducted 1993). *WMHTAC report: ref 17 and table 30 appendix11*	Sun smart Day: a pilot program for photo-protection education	Interactive health fair involving sun protection activities (participation enabled entry into prize draw)	RCT Immediate post test and 3 months later. *Study quality rated -*	School children age unclear Estimated by WMHTAC as 9 - 10 years Secondary target parents	Significantly higher knowledge in intervention group immediately after intervention. No significant difference at 3 months	*Probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods - Lesson based, including verbal advice, videos and / or printed Materials: Primary School Students

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
Buller et al. (1996) Tuscon Arizona USA. *WMHTAC Addendum: ref 1 and table 3*	Sunny Days, Healthy Ways: Evaluation of a skin cancer prevention curriculum for elementary school children	School-based curriculum lessons ('multi-disciplinary teaching units') delivered over 5 week period. Resources including student workbooks and newsletter for children and parents, plus skin chroma meter measures taken on children.	RCT (n= 457) Intervention (n= 251)and control groups (n=196) Pre-test / post test (some subsequent intervention work with one control group). Immediate post test, 1 week after intervention. Second post test 8 weeks after. *Study quality rated -*	Elementary school children – age unclear but WMHTAC suggest 9 – 12years) Secondary target: parents	Higher post test knowledge and improved attitudes towards tanning in intervention groups. Conclusions unclear but appear to indicate no significant difference in sun protection behaviours between groups. Parent behaviours reported focused only on checking child's skin and knowing what to do if changes seen. Skin chroma meter score results unclear. See WHMTAC Evidence Table for detailed scores and item p values.	Unclear as to what 'multidisciplinary teaching units involved or what form lessons took. Unclear as to whether audiovisual material was included. Parental result unclear. No information on scale of skin chroma changes or whether clinically meaningful. *Probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods - Lesson based, including verbal advice, videos and / or printed materials: Primary School Students (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary School Children						
Buller et al. (2006a) Tuscon Arizona USA. *WMHTAC report: ref 16 and table 32 for RCT study and table 33 for CBA*	Evaluation of the Sunny Days, Healthy Ways sun safety curriculum for children in kindergarten through 5th grade	Lesson based with material including storybooks and activity sheets (unspecified) over 4 weeks	RCT (n=434) Intervention (n=227) and control (n=201)groups Tested before intervention then approximately 4 – 6 weeks later Skin chroma scores also taken. *Study quality rated +* Also separate report on CBA with 6 schools from the above study	Kindergarten to fifth grade (5 – 11 years)	Youngest groups: Both intervention and control group knowledge increased. No significant difference in skin chroma meter scores 2nd and 3rd grade: Significant increase in knowledge No significant difference in behaviour / chroma scores See WHMTAC Evidence Table for detailed scores and item p values CBA: Sun safety knowledge not improved p= 0.333	Possible contamination effects. *Probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods – Lesson based, including verbal advice, videos and / or printed materials: Primary School Students (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary Children						
Barankin et al. (2001) London Ontario Canada. *WMHTAC report: ref 3 and table 2 appendix11*	Effects of a sun protection program targeting elementary school children and their parents	Presentation from medical students including interactive (unspecified) slide presentation plus activities book	Cluster controlled before and after study (n = 509). Comparator group received activities book only. Baseline measure and post test at 5 months. *Study quality rated -*	Children aged 9 – 10	Some improvement in knowledge and sunburn reduction in 'verbal plus print' group. Statistical significance not reported.	Delivery methods unclear – results do not provide sufficient information to allow detailed effectiveness analysis. *Probably applicable only to population/ setting studied.*
Primary Children: Delivery during summer camp						
Reding (1994) Wisconsin USA *WMHTAC report: ref 84 and*	Cancer education interventions for rural populations	Booklet provided for use with youth development project 'Cloverbuds'. Unclear how used as part of lessons	Controlled before and after study (n= unknown). Surveys before and after sessions. *Study quality rated -*	Children aged 5 – 7	Statistically significant increase in knowledge immediately after intervention ($p<0.01$ in 7 of 10 items tested).	Number of participants not provided. No demographic details Delivery not standardised. *Probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods - Lesson based, including verbal advice, videos and / or Printed materials: Primary School Students (page 4)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Primary Children						
Naldi et al. (2003 & 2007) (2 reports) Italy. *WMHTAC report: ref 75 & 76 and table 66*	Improving sun protection behaviour in children ('Sole Si Sole No GISED' 2003: subtitle: Study design and baseline results 2007: subtitle: results of a cluster-randomised trial in Italian elementary schools	Delivery methods for print component unclear to parents and children Children shown short video at school. Unclear as to whether parents were given the opportunity to view.	RCT (n = 11,230) Intervention (n= 5,676) and control (n=5554). Parents reported on sunburn Naevi counted. *Study quality rated +*	Elementary school children Secondary target parents but outcomes not reported for this group	No significant difference between groups – direction of effects inconsistent. P values not given, only confidence intervals	Sun protection already high. Dropouts due to schools being unable to comply with study requirements noted but significance of this unclear. Reliant on sunburn history of children being reported by parents. *Due to above comments and lack of significant differences between groups, probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods - Lesson based, including verbal advice, videos and / or Printed materials: Primary School Students (page 4)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Gooderham & Guenther, (1999b). London, Ontario, Canada. *Note link to other Gooderham & Guenther paper*	Sun and the skin: evaluation of a sun awareness program for elementary school students.	School students completed a sun awareness activity book 1 week before presentation by first year medical students. Stickers and pamphlets distributed after presentation.	Before & after study (n = 244 pre and 216 at post 2). Pre-test 1 month prior to activities then immediately after presentation and at 1 month. *Study quality rated -*	Primary school students – grade 4 (approximately 10 years)	Statistically significant increase in knowledge reported for 20 of 22 items for post 1 and 2 ($P<0.01$). Statistically significant difference in self reported behaviour or behavioural intentions reported at both post 1 and post 2 ($p<0.001$)	Reliant on self reporting. Impact of the different components cannot be determined *Probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods - Lesson based, including verbal advice, videos and / or Printed materials: Primary School Students (page 5)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
LaBat, DeLong, & Gahring, (2005). Minnesota, USA	A Longitudinal Study of Sun-Protective Attitudes and Behaviors.	Outdoor field day and classroom presentation	Before & after study (n =786) Questionnaire at 2 weeks after field day. Follow up 4 years later. *Study quality rated -*	Students from schools participating in Minnesota Sun Smart programme: 10 – 13 years for intervention; 12 – 18 for follow up	Knowledge regarding skin cancer retained, but preference for sun-tanned appearance and rejection of recommended sun protection methods evident at 4 year follow up (P = 0.716, 0.655 and 0.806 on three behavioural measures.	No measure of what sun protection messages were received in 4 year period (including commercial messages). Authors acknowledge convenience sample plus existence of other programmes over time. *Probably applicable only to population/ setting studied.*
McWhirter, Collins, Bryant, Wetton, & Bishop (2000). South of England (unspecified)	Evaluating 'Safe in the Sun', A Curriculum Programme for Primary Schools.	Video and handbook distributed to teachers, but variations in what / how used.	Before & after study (n = 998) Draw and write activity pre intervention then at 3 months (post summer). Youngest had 'adult scribes'. *Study quality rated +*	Primary school students, years 1, 3 and 5	Significant increase in awareness of sun safety measures (p=0.05). No significant difference in actual behaviours.	Children's responses re past behaviour based on recall. Variations in how material was used is confounding factor. Problems possible with subjective interpretation of children's drawings and writings. *Probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods - Lesson based, including verbal advice, videos and / or Printed materials: Primary School Students (page 6

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
DeLong, LaBat, Gahring, Nelson, & Leung, (1999). Southern Minnesota, USA	Implications of an Educational Intervention Program Designed to Increase Young Adolescents' Awareness of Hats for Sun Protection.	Lesson based, mixed methods. Overheads, video and worksheet plus outdoor field day See also La Bat et al. paper (analysing different part of overall intervention)	Before & after study (n = 397). Pre and post test. Timing unclear. *Study quality rated -*	Children aged 10 – 12 years.	Focus on awareness of sun protection qualities of hats as well as preferences and intentions re use of hats. P= 0.0001 for atttudes towards sun protection, 0.05 for relative sun protection of different styles of hats. Only 1 of 8 hat styles showed significant difference (p= 0.0051) – reduction in intention to wear baseball cap for sun protection.	Did not measure actual behaviour change. Cannot determine effect of individual elements. *Probably applicable only to population/ setting studied.*
Gilaberte, Alonso, Teruel, Granizo, & Gallego, (2008). Aragon, Southern Spain.	Evaluation of a health promotion intervention for skin cancer prevention in Spain: the SolSano program.	Educational materials including workbook, activities and poster. Activities guide for teachers, information pamphlet for parents Duration of activity not specified	Before & after study (n = 1,522). Pre-test (April) prior to Sol Sano classroom activity. Post test after summer holidays (September) *Study quality rated +*	Primary school children from schools participating in Sol Sano project	Focus on knowledge (p <0.001), attitudes re healthiness of suntan ("slight reduction" – p values not reported, and self reported sun protection behaviours analysed from children's drawings.	Did not directly measure behaviour change *Probably applicable only to population/ setting studied.*

Table 2.8: Education Settings: Mixed Methods - Lesson based, including verbal advice, videos and / or Printed materials: Primary School Students (page 7)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
Thornton, & Piacquadio, (1996). San Diego, USA	Promoting sun awareness: evaluation of an educational children's book.	Book incorporated into 3rd grade curriculum Details of how this was incorporated into lessons or other activity unclear	Before & after study (n = 82). Questionnaire before, immediately after and at 6 weeks after reading *Study quality rated -*	Primary school 3rd graders (8 years of age)	"Marked improvement" (significance values not reported) in knowledge of sun protection at both post tests.	Actual behaviours not directly measured. *Probably applicable only to population/ setting studied.*
Fork, Wagner, & Wagner, (1992). Texas USA	The Texas peer education sun awareness project for children: primary prevention of malignant melanoma and nonmelanocytic skin cancers.	Presentation to older children who then developed projects to educate younger children	Before & after study (n =16) Exact timing of questionnaire before and after intervention not specified. Pilot study only- 5 item questionnaire *Study quality rated –*	Primary school students (7 in 3rd – 5th grade and 9 in 1st grade)	Focus on knowledge of sun protection only.	Extremely small sample. Probability of children trying to please researchers.. *Probably applicable only to population/ setting studied.*

Table 3.1 Home Settings: Mixed Method: Verbal advice and supporting visual and printed material: Adults

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Verbal Advice plus Video: School venue but not within school hours: Adults						
Rodrique (1996) Florida USA. *WMHTAC report: ref 87 and table 73*	Promoting healthier behaviours, attitudes and beliefs towards sun exposure in parents of young children	90 minute verbal advice given to mothers, plus informational video or proactive advice for 'comprehensive' intervention group (location not given, but presumed to be schools)	Controlled before and after (n=66). Control group, information only group and 'comprehensive' groups (n across groups not given). Questionnaire at 2 weeks and 12 weeks post intervention. *Study quality rated -*	Mothers of young children (no age given) affiliated to Parent-Teacher Associations	Statistically significant difference in knowledge and self-reported sun protection behaviours ($p<0.001$)	Small sample sizes. Self-selected sample (white, well educated and well motivated). Relied on self-reporting. *Probably applicable only to population/ setting studied.*
Verbal Advice and literature: Home: Adults						
Geller & Gilchrist (2006) & Geller et al. (2006 (USA). *WMHTAC report: ref 35 & 38 and table 42*	Two reports: A randomized trial to improve skin cancer detection and prevention practices among siblings of melanoma patients *(same title, published in two different journals)*	Telephone sessions with health educator plus print material	RCT (n= 494) Intervention (n=237) and control (n=257) group. Telephone session then print material sent at 1, 3 and 5 months. Phone calls followed receipt of material. Control group received 'usual care' (unspecified).Baseline measure than tests at 6 and 12 months. *Study quality rated -*	Adult siblings of melanoma patients	Significant increase in knowledge for only 2 of 7 questions. No evidence of increase in use of sun protection. No significant difference in self-reported tanning behaviours. P values not reported	Group likely to be high in knowledge / motivation compared to general population. Participants enrolled at different times. *Probably applicable only to population/ setting studied.*

Table 3.1 Home Settings: Mixed Methods: Verbal advice and supporting visual and printed material: Adults (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Verbal Advice (Telephone) and literature (newsletter): Home: Adults						
Benjes et al. (2004) Falmouth USA. *WMHTAC report: ref 5 and table 23*	Changing patterns of sun protection between the first and second summers for very young children	Nurse counselled mothers re solar protection	RCT (n = 108) Intervention and groups (n= 54 in each arm), but control group also received information from nurse. Intervention group telephoned and sent newsletter. Baseline at child age 6 months, follow-up at child age 18 months. *Study quality rated +*	Mother-child dyads	No significant difference in mother's self-reported sun protection behaviour p>0.05 No trend in individual behaviour. Self-reporting of higher post-test vigilant protection of children (but baseline not reported)	Limited demographic data. Possible socially desirable responding in relation to self-reported protection of children. *Due to lack of significant differences in relation to sun protection behaviours, probably applicable only to population/ setting studied.*
Attew, Junkins, & Lay, (1999). Oxfordshire, UK	Educate carers on childhood sunburn risk.	Leaflets and one-on-one advice	Before & after study (n = 22) Questionnaire before distribution of leaflet and subsequent discussion, after discussion and at 6 weeks *Study quality rated -*	Mothers of babies and pre-school children (convenience sample – friends of researchers)	Increase in correct answers, but significance values not reported.	Authors acknowledge small sample (friends) – white, middle class and upper socio-economic. *Probably applicable only to population/ setting studied.*

Table 3.2 Home Settings: Printed Material: Adults

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Home Delivery: Print Only: Adults						
Turrisi et al (2004 / 2006 2 studies) Bois Idaho & Johnson City Tennessee. *WMHTAC report: ref 95 & 96 – and table 78*	Two reports: 1.Examination of the short term efficacy of a parent-based intervention … 2. Influence of parent and child characteristics on a parent-based intervention to reduce unsafe sun practices	Handbook supplied to parents to teach children	RCT (n= 469 parent –child pairs) Interventions: n = 234: baseline and follow-up follow up only n = 106 Control n= 129 Baseline and follow up at 45 days. *Study quality rated +*	Parents of children aged 9 – 12 years - with children providing some reporting	Children reported significantly less sunburn and sunbathing tendencies P values not reported, only confidence intervals	Short term. Study authors note outcomes reported by children who possibly wanted to please parents and researchers. Unable to determine whether groups were similar on key characteristics. *Probably applicable only to population/ setting studied.*
Bränström et al. (2003) Stockholm County Sweden. *WMHTAC report: ref 10 and table 28*	A randomised population-based intervention to examine the effects of the ultraviolet index on tanning behaviour	Different combinations of brochures with or without UVR intensity indicator information	RCT (n=1,743). Numbers in study arms not given. Materials posted. Means of assessing impact of material unclear. Follow up period varied between 4 – 7 months *Study quality rated +*	General population (1743 aged 18 – 37 drawn from census data)	Mean knowledge increased in all groups, mean sunbathing frequency decreased ($p<0.001$). Unable to determine which combination of material was the most effective.	Probably contamination from widespread media reporting of UV index and of previous knowledge. *Probably applicable only to population/ setting studied*

Table 3.2 Home Settings: Printed Material: Adults (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Home Delivery: Print Only: Adults						
Gerbert et al. (1997) San Francisco USA. *WMHTAC report: ref 40 and table 43*	Activating patients to practice skin cancer prevention	9 x different combinations of printed information with personal risk score calculator	RCT (n= 981). (n = 109 in each of 9 study arms). Information sent via mail – invited to call toll free number to report scores (and receive a free sun cream samples). *Study quality rated -*	Patients (presumably from general practices) at home	Higher response from patients receiving pack with letter from physician and pack emphasising skin cancer risk. No significance data provided.	Restricted time in which to make calls. No data as to whether groups were similar. No actual behaviour information collected. Possible bias from provision of sun cream sample for callers. *Probably applicable only to population/ setting studied.*
Bauer et al. (2005) Germany. *WMHTAC report: ref 4 and table 22*	Interventional study in 1,232 young German children to prevent the development of melanocytic nevi failed to change sun exposure and sun protection behaviour	Print material sent to all parents, then additional educational letters 3 times in a year to Intervention group only	RCT (n = 1,232) Intervention (n= 593) And control (n= 617) Baseline measures, then children assessed for three years for newly developed naevi. Parents reported on children's sun exposure. *Study quality rated +*	Day-care centres: Parents of 2 – 7 year olds	No significant difference in number of naevi. "Unexpectedly high proportion of children already using sunscreen. Significance levels not provided	Educational material before randomisation may have reduced effects. High dropout rates. Reliant of parental self-reporting of children's sun exposure. *Due to above comments and lack of significant differences between groups probably applicable only to population/ setting studied.*

Table 3.2 Home Settings: Printed material: Adults (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Home Delivery: Print Only: Adults						
Richard et al. (1999) Region Provence-Alpes Côte d'Azur France. *WMHTAC report: ref 86 and table 72*	Humour and alarmism in melanoma prevention: a randomised controlled study of three types of information leaflet	Mailed leaflets	RCT (n=1,200) 3 x intervention groups, one each for humour, threatening and neutral approach, plus control group (n=300 in each arm). No baseline. Telephone interviewing 2 weeks after mailing. *Study quality rated -*	Adults aged 18+	Statistical significant increase in knowledge in intervention groups compared to control group ($p<0.0001$) but not significant difference between intervention groups	No baseline. Results reported only for those (number unspecified) who read leaflet. Note: wide body of literature indicates humour is culture-based. *Probably applicable only to population/ setting studied.*

Table 3.3 Recreational Settings: Sports settings: Mixed Method: Adults (page 1)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Verbal advice and literature: Sports Venue setting: Adults						
Parrott et al. (1999) Georgia USA. *WMHTAC report: ref 79 and table 67*	Communicating about youth's sun exposure risk to soccer coaches and parents: a pilot study in Georgia	Seminar about sun protection and booklet 'distributed' giving information and prevention strategies	RCT (n = 12 coaches) Intervention and control (presume equal split across groups). Self-reported data, timing of data collection unclear *Study quality rated –*	Sports coaches of young soccer players (player age not specified) Secondary target of parents	No difference between intervention and control on self reported knowledge and behaviour regarding sun protection.	Authors acknowledge possible contamination of control group. Self-reported data only. Small sample (12 coaches). Possible high existing baseline knowledge. *Probably applicable only to population/ setting studied.*
Walkosz et al. (2008) USA *WMHTAC report: ref 97 and table 79*	Increasing sun protection in winter outdoor recreation: a theory-based health communication program.	"Print, electronic and interpersonal messages" rotated	RCT (n=6,516 adults across 25 sites) Staff interviewed guests regarding sun protection behaviours and sunburn. *Study quality rated* ++	Adults at ski resort	No evidence of increased sun protection. No statistical tests reported, only hypotheses	Baseline awareness probably high among experienced / regular skiers. *Probably applicable only to population/ setting studied.*

Table 3.3 Recreational Settings: Sports settings: Mixed Method: Adults (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
Fielder, Lo, Shorney, & Roberts. (1996). USA	Skin, sun and sense: an evaluation of a skin cancer prevention campaign.	Health education trailer at beaches and parks, some media coverage of trailer. Leaflets given out at trailer. Run over 3 month period.	Before & after study (n =142). Visitors to trailer: questionnaire completed at trailer visit and at 6 months after event. *Study quality rated +*	"Young people and their families"	Self reported change in views about effects of sun (no statistical significance reported). Mixed results re behaviour: More reported enjoying sunbathing ($p<0.01$) More reported always or sometimes adopting protective measures ($p<0.02$)	Self selected sample – only those motivated to visit trailer. *Probably applicable only to population/ setting studied.*
Jungers, Guenthner, & Perkins, (2003). Indianapolis, USA	A skin cancer education initiative at a professional baseball game and results of a skin cancer survey.	Educational booth at baseball game, with leaflets and discussions with dermatologists	Before & after study (n = 136 pre test / 60 completed post test.) Questionnaire before discussion and at 3 months *Study quality rated -*	General population	Most factors reported only compared responses from those completing pre test to those completing follow up. Significant decrease in self reported sun-exposing recreation for those completing post test compared to those completing pretest only ($p<0.0225$).	Self-selected sample. *Probably applicable only to population/ setting studied.* General population

Table 3.4 Recreational Settings: Airports/Flights: Printed Material: Adults

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Recreational Setting: Airports / flights						
Dey et al. (1995) Manchester UK. *WMHTAC report: ref 28 and table 39*	Randomised controlled trial assessing effectiveness of health education leaflets in reducing incidence of sunburn	Leaflets placed in seat pockets of planes of flights from Manchester	RCT (n = 12,385) Intervention (n=6,276) and control (n=6,109) groups. Questionnaires distributed by cabin crew on flight. No baseline measure. *Study quality rated -*	Holidaymakers (unspecified)	No evidence of difference in severe sunburn (p=0.392)	Passengers not asked if they had seen or read leaflet. No baseline – no information as to whether groups were comparable. No indication of flight destinations. *Probably applicable only to population/ setting studied.*
Segan et al. (1999) Melbourne Australia *WMHTAC report: ref 92 and table 75 appendix11*	Development and evaluation of a brochure on sun protection and sun exposure for tourists	Leaflets distributed on flights departing to Queensland from Melbourne	Cluster RCT (n=373) Intervention (n= 168) and control (n = 205) groups). Tourists across 21 flights recruited in gate lounge at Melbourne airport. *Study quality rated -*	Tourists (unspecified)	No difference in sunburn or whether respondents were trying to protect themselves (p= 0.35). Only behaviour for which significant difference found was reduction in intervention group re days outside for 2 hours or more between 10 – 2pm ($p<0.001$). See WMHTAC evidence table for detailed p values for individual items	No details given re area of residence of participants. Probably high awareness among Australian residents due to previous sun exposure awareness activity. *Probably applicable only to population/ setting studied.*

Table 3.5 Recreational Settings: Swimming Pools/ Outdoor Venues: Lesson Based and Mixed Method: Children and Adults Supervising Children

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Recreational Sites: Children: Brief Lessons						
Mayer et al. (1997) YMCAS San Diego California USA. *WMHTAC report: ref 64 and table 61*	Reducing ultraviolet radiation exposure in children	Poolside UV reduction lesson (1st 5 minutes of aquatic classes) over 6 weeks. Parents also given information manual and project / activities resources for children	RCT (n = 169) Intervention (n=84) and control (n= 85) Baseline and follow-up at 6 – 8 weeks. *Study quality rated +*	Children mean age 7.6 (range not specified)	Non-significant difference in sun protection behaviours (p = 0.084). See WMHTAC evidence table for detailed p values for individual items	Duration of lessons very short. Variations in inside / outside pools possible. See previous comments re limitations due to children's cognitive development No data on whether / how parents actually used material. *Probably applicable only to population/ setting studied.*
Recreational Sites: Adults Supervising Children: Verbal Advice and Print Material *Note: originally classified by WMHTAC as workplace*						
Glanz et al. (2001). Hawaii USA *WMHTAC report: ref 42 and table 45*	A randomized trial of the Hawaii SunSmart program's impact on outdoor recreational staff	Verbal advice and printed material run over 6 weeks	RCT (n=176). Intervention and control (n not given for arms). Mixed intervention group not reported. Baseline, followed up for 8 weeks, mailed questionnaire at 3 months. *Study quality rated -*	Recreational leaders responsible for children aged 6 – 8	Significant increase in knowledge compared to control group at first post test (p<0.001. Decrease in knowledge for both groups at 3 months but significance not reported	No information on questionnaire. No explanation for exclusion of mixed intervention group.*Probably applicable only to population/ setting studied, however: this intervention should be considered in relation to studies relating to 'Pool Cool' (see Escoffery et al. (2008); Geller et al. (2001) and Glanz et al. (2002) studies in accompanying narrative document.*

Table 4.1: Workplace Settings: Outdoor Workers and General Workforce: Adults

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Specific Situations: Outdoor Workers: Mixed Methods						
Borland et al. (1991) Melbourne Australia. *WMHTAC report: ref 9 and table 27*	The impact of a skin cancer control education package	Intervention package consisted of: - Posters encouraging sun protection and early skin cancer detection - Video of young man dying of melanoma - Individual folders for workers containing leaflets / brochures, letter from management endorsing the intervention and lapel buttons	RCT (n not reported). Material distributed to intervention group. Control group (located in different districts) did not receive any material. *Study quality rated +*	Outdoor workers employed by Telecom in Melbourne and Geelong	Intervention group observed to make greater use of sun protective clothing such as shirts but not of shade (no details given of shade provision).	Potential bias from methodology – i.e. knowledge among participants that observers were reporting behaviours. Several other potentially confounding factors as discussed in narrative above. *Probably applicable only to population/ setting studied.*

Table 4.1: Workplace Settings: Outdoor Workers and General Workforce: Adults (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Workplace (study does not specify whether indoor or outdoor workers): Electronic Media						
Dixon et al. (2007) Melbourne Australia. *WMHTAC report: ref 32 and table 40 appendix11*	Solar UV forecasts: a randomized trial assessing their impact on adult's sun-protection behaviour	Emails containing: a. weather forecast information only b. weather and UV forecast information c. weather, UV and sun protection recommendations	RCT (n = 557). Weather only n=184 Weather + UVR n=183 Weather, UV and protection n = 190 Weekly emails prior to each weekend followed by a post-weekend questionnaire regarding actual sun protection behaviours. *Study quality rated -*	Employees of consulting firms (unspecified) and one university	No statistical difference in reported sunburn (p = 0.996). Some evidence of higher sun protection behaviours for those receiving the largest set of information but no clear trend	Self- selected population with low (10% participation). Study authors acknowledge respondents were likely to have high levels of knowledge. Report lacks demographic / occupation and lifestyle (previous or current sun exposure and sun protection behaviours). Potential for confounding effects of exposure to previous interventions such as state-wide or community-based interventions. *Probably applicable only to population/ setting studied.*

Table 4.1: Workplace Settings: Outdoor Workers and General Workforce: Adults (page 3)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Workplace (study does not specify whether indoor or outdoor workers): Printed Material						
Hanrahan et al. (1995) Newcastle Australia *WMHTAC report: ref 46 and table 48*	The effects of an educational brochure on knowledge and early detection of melanoma	2 x brochures: 1st illustrated melanoma at different stages 2nd: gave facts, instructions for self-examination	RCT (n=368). 3 groups,1 received brochures (n=110), 1 received no information – only post test (n=108),1 received no information – pre and post test (n=96) Baseline test, post test at 10 or 11 weeks then at 20 weeks. *Study quality rated +*	Male employees of major mining company aged 45+	Significant increase in knowledge at first post test, and further increase at second post test (p = 0.01). Significant increase in recognition of pigmented lesions (p = 0.01)	High loss at follow up (not explained). No explanation for non-inclusion of females. No demographic details provided; did not distinguish between those working in outside versus inside jobs. *Probably applicable only to population/ setting studied.*
Workplace (delivery media unclear):						
Rasmussen (2005) Scotland *WMHTAC report: ref 83 and table 70*	Factors influencing anticipated decisions about sunscreen use	Method of deliver unclear	RCT (n=171):2 x intervention groups compared to control. Positive information (n=67) re efficacy of sunscreen and negative information (n=57) regarding problems with sunscreen compared. Control n=54. Baseline then follow up (timing unclear). *Study quality rated –*	Employees of two (unspecified) 'Scottish industrial companies'. Location and type of industry not provided.	Significant increase in self-reported likelihood of using sunscreen p<0.001 among intervention groups compared to control. Negative information group less likely than positive group to use sunscreen (p<0.05. Females also more likely to use sunscreen than males (p<0.05)	Note: Not true test of positive versus negative message framing Reliant on self-reporting. Prior knowledge about skin cancer protection not detailed Groups were not similar at baseline regarding sunscreen use. Possible contamination as participants within the same company were allocated to different interventions. *Probably applicable only to population/ setting studied.*

Table 5.1a: Medical Practice Settings: New Media*

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Adults: Electronic Delivery						
Glazebrook et al. (2006) Nottingham shire UK *WMHTAC report: ref 44 and table 46 appendix11*	Impact of a multimedia intervention "Skinsafe" on patients' knowledge and protective behaviours	Computer program used within medical practice setting	RCT (n=589) Intervention (n=259) used animation, photos and simple text messages (undefined) to provide information regarding risk factors, risk reduction strategies and skin check information. Control group (n=330). Baseline measure and post test at 6 months. *Study quality rated +*	Patients with at least one melanoma risk factor invited to participate.	Significant increase in knowledge from baseline to six months and in self-reported skin protection behaviours. P values not reported	Low percentage of male participants. No information on age, ethnicity or past sun protection behaviours. No information regarding message framing factors or readability / comprehension factors. Potential selection bias acknowledged by authors. *Probably applicable only to population/ setting studied.*

Table 5.1b: Medical Practice Settings: Printed Material: Adults

Medical Practice Setting: Print Material Adults						
Prochaska (2005) USA *WMHTAC report: ref 82 and table 69*	Stage-based expert systems to guide a population of primary care patients to quit smoking, eat healthier, prevent skin cancer, and receive regular mammograms	Mailing of reports giving 'pros' and 'cons' of behaviour change and strategies for taking small steps to change (with or without physician's personal letter)	RCT (3,834) Intervention (n=1,822) and control (n=2,012). Computer generated reports mailed at 0, 6 and 12 months. *Study quality rated* -	Patients at 79 primary care practices	Limited findings provided – participants in intervention arm appeared to avoid sun / use more sunscreen. No statistical tests provided	Insufficient details of study. No demographic data ***See comments in accompanying narrative document re criticism of stages of change model*** *Probably applicable only to population/ setting studied*

Table 5.2a: Hospital Settings: Mixed Methods - Verbal advice and printed material (page 1)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Adults: Verbal advice and literature: Hospital setting						
Jones et al. (2007 Rogheda Ireland . *WMHTAC report: ref 53 and table 54*	Attitudes and perceptions regarding skin cancer and sun protection behaviour in an Irish population	Written educational sheet plus verbal information (unspecified) from doctor	RCT (n = 200): Intervention and control: Assumed participants evenly split across arms. Questions posted before initial contact, then 3 months later. *Study quality rated –*	Dermatology outpatients including those with skin cancer or sun related complaints	Significant improvement in correct responses to 3 of 7 knowledge questionnaire ($p<0.05$). Improvement in self-reported sun protection behaviour but statistical significance not given. See WMHTAC evidence tables for breakdown of responses to questions	No demographic data. Weak evidence of knowledge increase at 3 months. *Probably applicable only to population/ setting studied.*
Clowers-Webb et al. (2006) USA *WMHTAC report: ref 24 and table 37*	Educational outcomes regarding skin cancer in organ transplant recipients	Verbal advice via physician and printed material compared to printed material alone	RCT (n=202, Two groups, n = 101 in each). Verbal advice plus print group and print only group. Test at 3 months and 10 months. *Study quality rated +*	Transplant patients presenting for dermatology consultation	Some evidence of more sun safe behaviour in group receiving verbal and print but no evidence of statistically significant difference between groups ($p=0.66$ at 3 months and 0.50 at 10 months).	Authors acknowledge high baseline knowledge. Possible seasonal differences plus possibly self-selecting population. *Probably applicable only to population/ setting studied.*

Table 5.2a: Hospital Settings: Mixed Methods - Verbal advice and printed material (page 2)

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention target	Study conclusions	Comments re findings and limitations
Brandberg, Bergenmar, Bolund, Mansson-Brahme, Ringborg, & Sjoden, (1992). Sweden	Psychological effects of participation in a prevention programme for individuals with increased risk for malignant melanoma.	Visit to medical clinic, skin examination and interview with psychologist	Before & after study (n = 115). Questionnaire completed at first visit then by mail at 7 months. *Study quality rated -*	Family members with 2 or more members having malignant melanoma	Did not focus on sun protective behaviours, only on psychological effects of programme participation	No data on sun exposure knowledge, attitudes or behaviours *Probably applicable only to population/ setting studied.*
Geller, Sayers, Koh, Miller, Benjes, & Wood, (1999). Falmouth, Massachusetts USA	The New Moms Project: Educating Mothers About Sun Protection in Newborn Nurseries.	Educational kit including written material, hats & bibs, plus nurse-led discussion of material	Before & after study (n =187). Questionnaire administered upon admission (prior to delivery) then 1 year post delivery *Study quality rated -*	Mothers of new borns	Focus on recall of information provided. No data collected on changes to actual sun protection attitudes or practices	*Probably applicable only to population/ setting studied.*

Table 5.2a: Hospital Settings: Mixed Methods - Verbal advice and printed material (page 2)

Robinson, & Rademaker, (1995). Chicago, Illinois, USA	Skin Cancer Risk and Sun Protection Learning by Helpers of Patients with Nonmelanoma Skin Cancer	Verbal and written intervention – provided as part of post operative care, at two months and 6 months after surgery	Before & after study (n = 356 individuals; 178 patient / helper pairs) Questionnaire completed at pre-operative consultantion then at 1 year post op *Study quality rated -*	Patients with non-melanoma skin cancer and helpers. Age 30 – 60 years	Analysis focussed on comparison of those who changed behaviours and those that did not (burning susceptibility p = 0.0001) and general comparisons: women increased likelihood of taking precautions against sun burn (p = 0.001) and men increased likelihood of wearing hats (p = 0.001)	*Probably applicable only to population/ setting studied.*

Table 5.2b: Hospital Settings: Printed Material

Authors, Year and Location	Title of Study	Media	Methodology and Other relevant factors	Intervention Target	Study conclusions	Comments re findings and limitations
Hospital Setting: Print material: Parents of Newborn Infants						
Bolognia et al. (1991) New Haven Connecticut USA. *WMHTAC report: ref 8 and table 26*	Sun protection in newborns: a comparison of educational material	Simple guidelines (unspecified) provided on minimising sun exposure	Controlled before and after (275 mothers) Parents interviewed by phone – followed for 7 months. *Study quality rated -*	Babies via Mothers of newborn infants	Significant less sun exposure and less time without sunscreen in intervention group ($p<0.001$). No significant difference in use of sun protective clothing or equipment (p value not given)	Recall may be inaccurate Possible social acceptability bias via methodology Non random allocation to groups – possible selection bias. *Probably applicable only to population/ setting studied*