

## Public Perception and Valuation of UV Health Risks: A Comparison Across Low and High Risk Countries (CSERGE working paper GEC 01-05)

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**Abstract.** The paper confirms public understanding of scientific evidence regarding the health risks of sunbathing. Many people value having a tan, but know that getting one is risky. Public awareness, understanding and perception of the health risks of sunbathing was investigated in low and high risk countries across Europe and in New Zealand. Measures to reduce health risk levels were valued in terms of public willingness to pay for a sunscreen that protects 100 percent against the damaging effects of sun exposure and increased taxation to finance the International Multilateral Fund established under the Montreal Protocol to reduce the emission of ozone layer depleting substances.

Public awareness is highest in New Zealand. The New Zealand Cancer Society has been running awareness and prevention programmes on television and through other media since the early 1980s. Melanoma is perceived as more of a public health problem in New Zealand than in Europe. Seventy percent knows someone in his or her direct vicinity, relative or otherwise, who has melanoma, compared to only 32 percent in England, 27 percent in Scotland and 15 percent in Portugal and Greece.

Compared to other activities which involve a certain degree of health risk such as drinking, smoking, driving a car or accidents in the home, the health risks of sunbathing or getting a tan are perceived significantly higher in New Zealand than in North or South Europe. Interestingly, the health effects of sunbathing are perceived as more detrimental in South Europe (Portugal and Greece) than in North Europe (England and Scotland), even though the actual risks are higher in the latter part of Europe.

Contrary to recent research findings, no significant differences could be detected in sunbathing intensity (hours) in any of the countries between people who apply sunscreen and people who do not. Nor could a

significant relationship be found between the sun protection factor people use and sunbathing hours, except for a weak positive correlation in Portugal.

It is shown that a substantial market exists for higher protection sunscreens. The policy message derived from public willingness to contribute to the International Fund is perhaps of even greater interest as the costs and benefits are geographically dispersed and actual payments to the International Fund by industrial countries are considerably less than agreed.

### Aim of project

- \* To assess public perceptions, behaviour and attitudes towards the risk of UV exposure.
- \* To determine WTP to reduce risks of damage from UV exposure, both private and public.
- \* To inform policy making

### Methodology

- \*  $WTP \text{ to reduce risk} = f(\text{total risk, income, utility from exposure})$
- \*  $\text{total risk} = f(\text{exogenous risk, self protecting activities})$

### Survey

- \* countries surveyed, 1997 – 1998, representing different exogenous risk factors as well as attitudes and behaviour – NZ (359), Scotland (198), England (251), Portugal (501) and Greece (106) (respondent numbers in brackets)
- \* 4 parts to the survey; general background and demographic characteristics; behaviour towards exposure to sunlight; attitudes and knowledge re risks of exposure; WTP questions for both private and public good expenditure to reduce risks of UV exposure

## Summary and Conclusions

- \* Men and women had similar habits but women used sunscreen more
- \* Sun screen use affected by income but risk perception not
- \* NZ is main risk area and this is reflected in attitude and behaviour
- \* WTP for private good similar across all countries
- \* WTP for public good differs but highest in NZ

## WTP for private and public good 1998 pounds

	NZ	England	Scot	Greece	Port
Private Good	10.1	9.1	10.1	10.2	4.5
Public Good	144.8	58.7	41.9	39.3	16.4

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**Table 1: Respondent sunbathing behaviour** (Percentages may not add up to 100 because of rounding errors. Missing vals excluded).

Respondent characteristics		England (%)	Scotland (%)	Portugal (%)	Greece (%)	New Zealand (%)
Interview on beach?	(1) yes	59	62	100	85	0
	(0) no	41	38	0	15	100
Main activity	(1) sunbathing	23	48	49	14	3
	(0) other	77	52	51	86	97
Sunbathing Frequency	(0) never	24	9	7	11	54
	(1) 1-4 days/year	19	13	4	12	13
	(2) 5-10 days/year	16	24	14	7	13
	(3) 11-20 days/year	22	23	27	14	10
	(4) 21-30 days/year	9	19	18	16	2
	(5) > 30 days/year	10	12	30	41	7
Sunbathing Intensity	(0) none	22	10	1	4	54
	(1) < half an hour	6	12	1	22	10
	(2) half an hour - 1 hour	17	15	1	30	16
	(3) 1-2 hours	24	29	8	31	16
	(4) 2-4 hours	22	14	50	10	0
	(5) 4-6 hours	7	15	24	2	3
Tan perception 'People look far better when they have a tan'	(6) > 6 hours	2	5	15	1	0
	(-2) strongly disagree	4	1	0	9	2
	(-1) disagree	11	15	16	12	25
	(0) neither agree/disagree	30	28	14	36	31
	(1) agree	42	52	57	36	35
	(2) agree strongly	13	4	13	7	7

**Table 2: Respondent risk averting behaviour**

Respondent characteristics		England (%)	Scotland (%)	Portugal (%)	Greece (%)	New Zealand (%)
Get sunburnt?	(0) no	62	43	83	68	58
	(1) yes slightly	26	41	6	18	22
	(2) yes quite	10	12	4	12	10
	(3) yes badly	2	4	3	2	5
	(4) yes very badly	1	0	4	0	5
Screen use frequency	(0) never when outdoor	27	9	30	29	15
	(1) sometimes	34	24	16	36	19
	(2) approx. ½ the time	11	25	7	6	9
	(3) almost every time	14	30	13	8	29
Sunscreen SPF	(4) whenever outdoor	13	12	33	21	28
	none (0)	0	4	33	0	8
	1-5	14	4	10	15	0
	6-10	38	43	17	21	5
	11-15	30	29	17	12	84
Alternative measures	16-20	3	14	11	31	3
	> 20	15	6	12	21	0
	Yes	66	83	69	79	72
Check-up	No	34	17	31	21	28
	(1) Yes	12	4	4	1	37
	(0) No	88	96	96	99	63

**Table 3: Respondent risk perception, awareness and knowledge**

Respondent Characteristics		England (%)	Scotland (%)	Portugal (%)	Greece (%)	New Zealand (%)
Perceived skintype	(0) does not burn	13	3	27	21	1
	(1) does not burn easily	43	40	27	52	37
	(2) burns easily	28	52	26	23	37
	(3) burns very easily	16	5	20	4	25
Know what melanoma is?	(1) yes	69	28	66	45	71
	(0) no	31	72	34	55	29
Know someone affected?	(1) yes	32	27	15	15	69
	(0) no	68	73	85	85	31
Health risk perception	Lower	49	41	44	51	51
	Neutral	12	20	17	19	22
	Higher	39	39	39	31	27