





# Three fail screen test

## YOU ASK: LONGEVITY



**Q** If my son applies sunscreen to his face, arms and neck before school starts, will it still give him protection during the lunch hour, when the sun is at its strongest?  
SARAH RAY

**A** A water-resistant sunscreen – even if your son will not be going anywhere near water – with a minimum SPF15 is the best way to try to ensure that protection lasts this long. This is because water-resistant sunscreens are formulated to bind very well to the skin. But you may find that they are a bit stickier than sunscreens that are not water-resistant.

Sun protection doesn't have to cost the earth – our Best Buys start at less than £3. But there are also three you should avoid

**Recent studies suggest a strong link between UVA and skin cancer**

**T**he bottles of sunscreen on the supermarket shelves – a colourful array of yellow, golden brown and blue – all evoke fond memories of sea and sun-kissed beaches. But our latest test of sunscreens shows that some could give you far less protection than you expect.

We tested 14 sunscreens that claimed to have a sun protection factor (SPF) of 15. The best met or exceeded SPF15 and also provided a reasonable level of protection from UVA (see opposite). So to get proper protection, choose one of our Best Buys.

The bad news is that three sunscreens that claimed to have an SPF of 15 failed our test. Worst was Marks & Spencer's – at 7.1, its actual SPF was less than half of that claimed on the bottle. Malibu's was measured at just 10.2, while Tesco's, with an SPF of 12, just missed out on the 12.5 required to pass our test (see opposite). For the manufacturers' responses, see 'Don't Buys', p29.

### Rays of fright

All of the sunscreens we tested are designed to protect your skin from two types of ultra-violet (UV) radiation emitted by the sun – UVA and UVB. A sunscreen that protects well against UVB doesn't necessarily protect well against UVA, and vice versa.

UVB, in particular, is known to cause sunburn. Skin damage from sunburn is

strongly linked to several kinds of skin cancer, including basal and squamous cell carcinomas and the most serious type, melanoma (also known as malignant melanoma). If melanoma is not diagnosed early, it can spread to other parts of the body and be fatal. A sunscreen's ability to absorb UVB and protect against sunburn is shown by its SPF.

Less is known about UVA. For many years, UVA was simply thought to contribute to skin ageing and wrinkling; however, the World Health Organisation cites recent studies that suggest a strong link between UVA and skin cancer. In response to this, an EU recommendation on sunscreen products, due to take effect in the new year (see 'Sunscreen labelling', p29), wants manufacturers to display a symbol guaranteeing that their products provide an agreed minimum level of protection from UVA (see 'How we test', p28).

### Glowing concern

The EU's recommendation has come at a time of increased concern about the dangers of overexposure to the sun.

According to the charity Cancer Research UK, the number of cases of skin cancer diagnosed annually in the UK has almost tripled since the early 1980s, to more than 75,000 a year.

## Sunscreen you can trust

We tested 14 sunscreens labelled SPF15 to see what protection they provided against UVA and UVB. We also tested their water-resistance

To pass our test, sunscreens must have an average SPF of at least 12.5. This allows for variations between skin type and the difficulty of measuring redness.

Our Best Buys have an average SPF of 15 or more, offer at least medium protection from UVA, and are water-resistant. Prices are for 200ml unless otherwise stated.



**SAINSBURY'S SUN PROTECT LOTION**  
Our SPF rating **20.2**  
Our UVA rating **High**  
Water-resistant **Yes**  
Standard price **£3**



**ASDA SUN SYSTEM**  
Our SPF rating **18.9**  
Our UVA rating **High**  
Water-resistant **Yes**  
Standard price **£3**



**GARNIER AMBRE SOLAIRE CLEAR PROTECT**  
Our SPF rating **18.7**  
Our UVA rating **Medium**  
Water-resistant **Yes**  
Standard price **£12.49/150ml**  
(equivalent to **£16.65/200ml**)



**NIVEA SUN MOISTURISING SUN SPRAY**  
Our SPF rating **16.9**  
Our UVA rating **Medium**  
Water-resistant **Yes**  
Standard price **£10.99**



**WILKINSONS WILKO SUN PROTECTION SYSTEM MOISTURISING SUN LOTION**  
Our SPF rating **16.5**  
Our UVA rating **Medium**  
Water-resistant **Yes**  
Standard price **£2.69**



**GARNIER AMBRE SOLAIRE MOISTURISING PROTECTION MILK**  
Our SPF rating **16.3**  
Our UVA rating **Medium**  
Water-resistant **Yes**  
Standard price **£8.79**



**BOOTS SOLTAN MOISTURISING SUN CARE LOTION**  
Our SPF rating **15.2**  
Our UVA rating **High**  
Water-resistant **Yes**  
Standard price **£9.89**



**L'OREAL SOLAR EXPERTISE ADVANCED ANTI-AGEING SUN PROTECTION LOTION**  
Our SPF rating **15.8**  
Our UVA rating **Medium**  
Water-resistant **Yes**  
Standard price **£14.99/150ml**  
(equivalent to **£19.98/200ml**)



**SUPERDRUG SOLAIT**  
Our SPF rating **27.4**  
Our UVA rating **Medium**  
Water-resistant **No**  
Standard price **£7.97**



**AVON BRONZE SENSITIVE SUN LOTION SPRAY<sup>a</sup>**  
Our SPF rating **18.1**  
Our UVA rating **Low**  
Water-resistant **Yes**  
Standard price **£7/250ml**  
(equivalent to **£5.60/200ml**)



**PIZ BUIN IN-SUN 15<sup>a</sup>**  
Our SPF rating **14.1**  
Our UVA rating **Low**  
Water-resistant **Yes**  
Standard price **£11.99**

<sup>a</sup> Avon and Piz Buin told us that these products are no longer on sale and have been replaced by reformulated versions with higher UVA protection. We have not tested these reformulated products

And it's affecting younger people: those born in the 1970s are being diagnosed with malignant melanoma at the same rate as people who were born in the 1930s and who didn't develop it until their 50s.

Our sun-worshipping culture may be partly to blame for this worrying trend. In 1971, UK residents made just 4.2 million trips abroad; by 2005 this had rocketed to 44.2 million trips, mostly to the sunnier climes of southern Europe and the US.

So this summer, protect yourself with one of our Best Buy sunscreens. Alternatively, you can fake it (see p30).

**Cases of skin cancer in the UK have tripled since the 1980s**

## YOU ASK: WHAT ABOUT MAKE-UP?

**Q** Some of the face creams I buy and the foundation that my 14-year-old daughter wears claim to offer sun protection. Is it safe to use these on their own?

GILL NEWMAN

**A** Which? has not tested the effectiveness of these products. However, for recreational summer sun exposure (on a beach

or in a park, for example), they should not be used in place of a conventional sunscreen.

Moisturisers and make-up are rarely water-resistant and will not remain on the skin in the way that a sunscreen can. And, though moisturisers and make-up may have an SPF to protect mainly against UVB, most sunscreens contain UVA filters as well.

## How much is enough? Most people don't use enough sunscreen to protect themselves

Studies show big differences between the amount of sunscreen that manufacturers use when testing the SPF of their products in laboratories and the amount that people actually apply when they're out in the sun. At 2mg of sunscreen for every square centimetre of skin, the average adult would need to use around 35ml (roughly a sixth of a bottle) to cover their body.

Using less than this reduces protection disproportionately: half the recommended amount will give just a third of the level of protection shown by the SPF.

We asked swimmers at the London Fields lido (right) to show us how much sunscreen they would typically use. Most used between a quarter and a half of the amount they should (the picture below shows the typical amount you should use in a single application). With our Best Buys starting at less than £3 a bottle, you don't have to spend a fortune to be properly protected.



**Sandra Arvidsson**

*Used 30 per cent of amount required*

'I don't really know how much you should put on. On a really hot day I'd probably use more – perhaps double the amount. I normally use an SPF15 and don't burn, so that seems to work for me.'



**Erica Thompson**

*Used 25 per cent of amount required*

'I sometimes burn in summer, so in future I'll probably use more. I don't think I could use four times the amount, though – imagine what it would be like on a hot day sweating on a beach with things sticking to you.'



**Stuart**

*Used 10 per cent of amount required*

'To be honest, I'm a bit slack with it. I should probably be using more, but using a sixth of a bottle for every application would be very expensive – between two people you could easily go through a bottle a day.'



**Beth Newsome**

*Used 50 per cent of amount required*

'Having red hair and freckles makes me prone to skin cancer, so it is a bit worrying that I didn't use enough. If I'd put twice as much on, it would have been sticky. You wouldn't want to slap so much on if it costs £10 a bottle.'

## YOU ASK: SAFE TANNING



Is it safe to build up a natural tan through careful, gentle exposure to the sun?

ELIZABETH CLIFFORD



As a tan is a sign that the skin has been damaged, and this damage will increase your risk of skin cancer, tanning should never be considered safe.

However, some sunlight is good for you and, if you develop a light tan as a result of careful exposure for short periods of time, then this is not unacceptable.

The darkening and thickening of the skin that results from tanning can also provide protection against sunburn or reddening of the skin, which should be avoided at all costs.



**Elizabeth asks: is a natural tan safe?**



## How we test

We test the SPF (protection against UVB) of every sunscreen to strict international standards, using the test that is endorsed by the new EU recommendation on sunscreen labelling (see opposite).

To measure the SPF, we apply sunscreen to a small test area on the backs of at least 12 volunteers, expose them to UVB rays from a special lamp and record when their skin turns red. We compare the size of the

smallest UVB doses needed to turn their protected and unprotected skin red. This gives us the SPF.

To test protection against UVA rays, we apply the sunscreen to glass plates, shine a special light through the plates and measure the amount of UVA radiation absorbed by the sunscreen. From this we calculate the UVA protection factor (UVA-PF). The new EU recommendation requires

the UVA-PF to be at least a third of the SPF claimed on the bottle (so an SPF15 sunscreen needs a UVA-PF of at least 5). We've rated sunscreens that meet this as offering 'medium' UVA protection or above.

For a product to be considered water-resistant, its SPF after immersion in water must be at least half of the SPF measured before immersion. We use a special shower head to provide a constant flow of water.



## Don't Buys



These lotions labelled SPF15 twice failed to provide a minimum average SPF of 12.5 in our tests



### MALIBU HIGH PROTECTION LOTION

Our SPF rating **10.2**

Malibu says: 'As the new UVA test has been commercially available only since the beginning of

2008, the necessary reformulation work is still in progress, and "new formulation" Malibu lotions will be appearing on the UK market during the course of this season. However, we have every confidence in the efficacy of, and the accuracy of the testing of, the Malibu SPF15 lotion that is currently on sale.'



### TESCO SUN PROTECTION MEDIUM

Our SPF rating **12**

Tesco told us that validation was carried out on the batch we tested and

it was within specification. Additional testing was also carried out on previous batches of SPF15 sun lotion by an Australian laboratory to an Australian standard that is recognised by two major international standardising bodies. These tests show that it was within specification.



### MARKS & SPENCER SUN FORMULA LOTION

Our SPF rating **7.1**

An M&S spokeswoman said: 'This formulation has been tested to internationally

recommended protocols. The test data shows that it provides SPF15 protection.'

## SUNSCREEN LABELLING

**A new EU recommendation may provide consumers with clearer information**



From next year, the EU is recommending that the SPF indicator on sunscreens be accompanied by a description of the level of protection it offers against UVB rays. SPF's of 6-10 will be labelled 'low', 15-25 'medium', 30-50 'high' and anything above 50 'very high'. Under the new recommendation, any

product with an SPF of less than six should not be sold as a sunscreen.

Sunscreens should also feature a standardised symbol (above, left) to indicate that the product meets minimum standards for protection from UVA rays (see 'How we test', opposite). Products that protect against only UVB rays – even those with a very high SPF – may provide a false sense of security because they allow harmful UVA rays to reach the skin.

## YOU ASK: SHELF LIFE

**Q** Do sunscreens have a 'shelf life'? If so, how long can they be kept for without losing their effectiveness?  
**JOHN WILLIAMS**

**A** Sunscreens should remain effective for many years if they are not exposed to high temperatures, and if contaminants, such as sand or dirt, do not get into the bottle. However, as sunscreens are often used on beaches in warm weather, it is very easy for this to happen, so it's best to err on the side of caution.



## YOU ASK: SUN AND VITAMIN D

**Q** Isn't some sun good for you? If you wear sunscreen all the time, you risk not getting enough vitamin D and developing rickets.  
**NAME AND ADDRESS SUPPLIED**

**A** A little sun is good for you. Our bodies use UV radiation from the sun to produce vitamin D, which is crucial for healthy bones. But for most of us, around 15 minutes of exposure a day on the hands, arms and face during the summer is enough to keep up vitamin D levels. Any more, and we risk burning ourselves.

## Checklist

**A few minutes of sun a few times a week is good for you. Any longer and it's essential to take precautions**

- Try never to burn. Your skin could suffer irreparable damage.
- Seek shade or stay inside between 11am and 3pm, when the sun is at its strongest.
- Use a sunscreen with SPF15 or above, but don't rely on sunscreen alone. The best protection is to cover up, and wear a hat and sunglasses.
- Apply sunscreen generously. To get the SPF on the bottle you'll need to use about 35ml per application, or one sixth of a 200ml bottle (see 'How much is enough?', opposite).
- If you find this too much for one application, applying around half of this amount and then the other half within 30 minutes of the initial application will give a similar effect. Otherwise, go for a sunscreen with an SPF of around three times higher than you need and apply a single layer.



- Swimming, sweating and rubbing can all remove sunscreen, so reapply regularly throughout the day.
- Take extra care with children: research shows that children who get sunburnt have a greater risk of developing melanoma in later life. Keep babies out of direct sunlight; cover young children with light clothing and keep them in the shade where possible; and use a sunscreen with a minimum SPF of 15.