Effects of photographs and written descriptors on melanoma detection

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Abstract

Two studies are reported on the effects of photographic and written information on performance in an experimental melanoma detection task. Subjects were shown slides of four types of skin lesions, including melanoma, and were asked what they would do if the lesion was on their skin. Four response options were provided from seeing a doctor immediately to doing nothing. In Experiment 1, no clear differences in performance were found as a function of prior instruction using four, eight or 16 photographs of each of the four lesion types. In Experiment 2, the effects of written and photographic instructional material were compared. The written material contained descriptions of each lesion type and details of the ABCD criteria for melanoma detection. Eight photographs were provided for each lesion type. Photographic information resulted in superior performance \((P < 0.001)\) for seborrhoeic keratoses and a combination of both types of information was superior \((P < 0.05)\) for melanoma. The two kinds of instructional material produced different effects, suggesting that a brochure offering a combination of photographs and written information is likely to be most useful in helping members of the public identify early melanoma as suspicious.

Introduction

Melanoma is a potentially fatal cancer of the skin, but when detected at an early stage it is usually readily treatable. In Australia, more early melanomas are being detected than was the case hitherto (Bonett et al., 1989). The incidence and mortality rates of melanoma have been rising in white skinned populations around the world, including Australia (Armstrong and Kricker, 1994). In Australia, recent evidence suggests that the mortality rates have stopped rising and are declining in younger age cohorts (Giles et al., 1996). Giles et al. (1996) attributed the decline in mortality to both improved early detection and to prevention programs. In Australia there has been considerable change in sun protection behaviour (this being well documented for the late 1980s; Hill et al., 1993). However, the full effects of prevention programs on melanoma incidence and mortality are likely to be some years off. Improving the rates of early detection of melanoma will continue to play an important part in any attempts to reduce the mortality burden. Provision of information about melanoma has been shown to increase presentation of it to doctors (e.g. Theobald et al., 1991; Mackie, 1992), although attention sought for clearly benign lesions also tends to increase. With better resources, further improvements in melanoma detection patterns may be attainable.

Some recent Australian studies have explored characteristics of melanoma detection in the general public. Borland et al. (1992), in a population-
based study, found misconceptions about early melanoma were common, with respondents believing them to be raised lesions whereas they are typically flat. On self-examination, this may lead to melanoma being missed and raised benign lesions such as seborrhoeic keratoses being mistaken for possible melanoma.

Hanrahan et al. (1995), in a study of males aged over 45 years, found that an intervention involving two complementary educational brochures (one with 24 photographs of melanoma in various stages) led to increased knowledge about melanoma and other skin cancer, including what to look for in detecting melanoma. No change was found in performance on a detection task using eight photographs, three of which were melanoma. However, testing was approximately 6 weeks after the brochures were sent out and 3 weeks after they were returned. This delay may have reduced the likelihood of improving detection performance and the relative insensitivity of the test limits its capacity to detect small changes.

Recent studies we have conducted suggest provision of information can help improve detection performance. Borland et al. (1995), also using a community sample, investigated the effects of brochures in improving melanoma detection. The detection task involved life-sized photographs of areas of skin, many with multiple lesions. The results showed that for melanoma detection, a brochure with written details and photographs was superior to merely a set of photographs of melanoma with little accompanying text and it was also superior to written brochures with varying levels of written information. The findings suggested the possibility that too much written information might be distracting and that photographs might supplement written text effectively, although the study had not been designed to test this latter proposition.

Miles and Meehan (1995), using students, in a task involving presentation by slide projection of single lesions, found that providing photographs of lesions improved appropriate assessments of concern for seborrhoeic keratoses and possibly for melanoma, while providing written information was relatively better for assessing normal moles and dysplastic moles (atypical moles, which are a known risk factor for melanoma). Miles and Meehan (1995) also demonstrated that in untrained individuals detection of suspicious lesions may be based more on holistic judgements than on feature-by-feature analysis. However, when provided with knowledge about melanoma through photographs but not through written text, participants benefited from extra time to view stimuli. This could be interpreted as suggesting that a feature-based analysis might be overlaid on the initial holistic impression.

Taken together, the results of these studies suggest that while the provision of information may improve detection, it will not necessarily do so. Characteristics of the information and perhaps its timing may also be important. Written and photographic information may play different roles in facilitating assessment of skin lesions. There are theoretical grounds for believing that photographs might aid in training for what is essentially a complex pattern discrimination task. Norman et al. (1989) argue that complex pattern recognition is a holistic process with skill built up primarily from exposure to examples rather than through extraction of key features which can be taught about in written or oral form. Miles and Meehan reviewed literature that showed that the presentation of photographic examples of dermatological lesions was effective in helping inexperienced but medically trained observers acquire skills in dermatological diagnosis and they argued that the principle could be generalized. On the basis of this literature, and the studies of Borland et al. (1995) and Miles and Meehan (1995), we decided to explore further the role of photographs relative to written information in melanoma detection. The overall aim was to clarify the parameters within which effective brochures (or other media) might be crafted for improving melanoma detection among the general public.

The use of photographs as a training tool raises the issue of how many might be required for good performance. It is generally assumed that experience in visual detection tasks improves per-
formance, at least up to some notional performance ceiling. This would suggest that the provision of more examples than only a couple would be advantageous. However, for a normally motivated group, too many examples may be counter-productive. For example, users may not seek out the information contained within them or may search less thoroughly. To the extent that might happen, performance may plateau or even deteriorate with quite small increases in numbers of examples.

Available literature provided no information on what an optimal number of photographs might be. Experiment 1 was designed to explore effects of the number of training photographs of each type of lesion on performance of a lesion judgement task similar to that used by Miles and Meehan (1995).

Experiment 1

Method

Participants

The subjects were recruited from first-year psychology students at the University of Melbourne. There were 72 observers, 49 female and 23 male, whose ages ranged from 18 to 24 years.

Design

The observers were allocated randomly to one of three different training conditions (24 observers per condition) prior to a test phase where they were required to view slides of four kinds of skin lesions and then rate each on a four-point scale. The scale comprised four categories for appropriate action if they were to find such a lesion on their own skin. The categories were: ‘do nothing’, ‘keep an eye on it’, ‘show doctor next visit’ and ‘see doctor immediately’ (see Borland et al., 1995).

Stimuli

The stimuli comprised eighty 35-mm photographic colour slides of pigmented skin lesions drawn from the same slide library used by Miles and Meehan (1995). Equal numbers of four types of lesions were depicted: early melanoma, dysplastic naevi, benign naevi and seborrheic keratoses. Each lesion depicted had been diagnosed histologically, or by clinical examination, by at least one specialist prior to being photographed. A dermatologist verified this independently by visual inspection of the photographs. Slide selection was not random; slides were chosen so that none were rare or atypical and so that, as far as possible, the size of the lesion images was reasonably uniform (see Miles and Meehan, 1995).

Lesion characteristics

Early melanomas have a number of characteristic features. Typically they are asymmetric, have irregular borders, and are variegated in colour with hues of tan, brown, black and sometimes red and white within the same lesion. In addition, melanomas often have diameters of 6 mm or larger when first identified, unlike benign pigmented lesions (Friedman et al., 1991). Dysplastic naevi are pigmented skin lesions which may be precursors to melanoma or may indicate an increased risk of melanoma. They often show one or more of the clinical features of melanoma. Consequently, there can be some difficulty in distinguishing between early melanoma and dysplastic naevi (Marks, 1989). They can also be difficult to distinguish from normal (benign) naevi (Hartge et al., 1995). Dysplastic naevi should be checked by a doctor. Benign naevi tend to be round and symmetric, have regular borders, be uniform in colour, and have a diameter less than 6 mm. Seborrheic keratoses are also benign. They are usually round, raised, light to dark brown in colour and have a ‘dull’ or ‘warty’ appearance (Friedman et al., 1991). The unattractiveness of seborrheic keratoses can often lead to them mistakenly being regarded as serious (Borland et al., 1992).

Instructional materials

These comprised 74×48 mm photographs surrounded by a 5 mm black border, each with one predominant lesion. Four photographs, each depicting the same type of lesion, were mounted on the top half of a white A4 page. At the bottom of each page there was a short statement describing each lesion type as follows:
• These are examples of melanoma. They can be fatal if not detected and treated early. They should be seen by a doctor immediately.
• These are examples of dysplastic naevi—atypical or unusual moles. They indicate an increased risk of melanoma. They should be checked by a doctor.
• These are examples of moles and freckles. They are benign (harmless).
• These are examples of seborrhoeic keratoses. They are benign (harmless).

The order of presentation of the lesions in the pamphlet was melanoma, dysplastic naevi, moles and freckles, and seborrhoeic keratoses. Depending on the training group, there were one, two or four pages (i.e. four, eight or 16 photographs) for each lesion type. Pages were displayed in A4 folders using transparent plastic pockets, so that pages could be removed easily between treatment groups.

Procedure

Stimulus slides were front-projected onto a screen using a Kodak Carousel projector. Observers were seated approximately 3 m from the screen, with the average size of the lesion image being 15 cm. Magnification of lesions, at least to this extent, has been shown not to affect performance on this task (Miles and Meehan, 1995).

Subjects were tested in groups of between one and four. There was no evidence that the number of subjects in the group influenced performance. Prior to viewing the stimulus slides, each subject was given the instructional material and informed that it contained photographs of different types of skin lesions. Subjects in the same testing session were all given the same version. After subjects had been allowed enough time to examine the material, it was removed.

A sequence of four blocks of 20 slides was presented. Each slide was presented for approximately 5 s. Five examples of each lesion type were randomly assigned to each block, with the order of block presentation counter-balanced between groups.

Treatment of data

The number of correct responses was calculated for each lesion type. Correct responses were nominated as 'see doctor immediately' for early melanoma, 'show doctor next visit' for dysplastic naevi, and 'keep an eye on it' or 'do nothing' for benign naevi and seborrhoeic keratoses. The validity of this was confirmed by a dermatologist. The maximum score correct for each stimulus type was 20. A two-way analysis of variance was carried out on the number of correct responses. The between-subjects factor was training group (four, eight or 16 photographs) and the within-subjects factor was lesion type (melanoma, dysplastic naevi, benign naevi and seborrhoeic keratoses).

A case with a single missing value for the benign naevi stimulus type was found. The mean response to benign naevi for that observer was used to replace the missing value, acknowledging that this could increase the likelihood of a Type II error associated with a decision concerning this factor (see Keppel, 1991, chap. 13).

The mean of the responses on the four-point scale was also calculated for each lesion type to assess any shift in overall rated severity of the lesions.

A deviation comparison was used to compare responses to different stimulus types. A difference comparison was used to compare responses between treatment groups.

The data thus derived were thus analysed using analysis of variance with one between subject factor (number of photographs) and within subject effects for stimulus type.

Results

Preliminary analyses showed no significant sex differences were found for either the mean number correct or level of response.

The mean numbers correct out of 20 for the three treatment groups and for each stimulus type are shown in Table I. A significant effect was found for stimulus type, $F(3,207) = 62.83, P < 0.001$. Subjects performed best for benign naevi and poorest for dysplastic naevi.

There were no significant differences in the
number correct between the three treatment groups, $F(2,69) = 0.71$, nor was there significant interaction between stimulus type and treatment group, $F(6,207) = 1.01$. Although not significant, it can be noted that observers from the eight-photo group obtained a slightly higher number of correct responses for melanoma, the lesion type of most concern, and for seborrhoeic keratoses the 16-photo group performed slightly better.

Table II shows the mean level of responses for the three treatment groups and the four stimulus types. A significant effect was found for stimulus type, $F(3,207) = 245.12, P < 0.001$. The highest level of response was to melanoma and the lowest level of response to benign naevi, which is appropriate.

There were no significant differences in the mean level of response between the three treatment groups, $F(2,69) = 1.06$. However, a significant interaction between stimulus type and treatment group was found, $F(6,207) = 2.27, P < 0.05$. This interaction was due to less concern about seborrhoeic keratoses in the 16-photo condition when compared with the other two conditions ($t = -2.27, P < 0.05$, for the contrast).

### Discussion

The results of this study show that there was little difference in responding as a function of number of photographs used in training. The only significant effect was an interaction where those in the 16-photo condition were less concerned about seborrhoeic keratoses than the four- and eight-photo groups. With no other indication of what might be the optimal number of photographs, we decided to use eight examples of each lesion for the experiment on the basis of practicality, and on the grounds that it was numerically, though not significantly, superior for melanoma and dysplastic naevi detection.

### Experiment 2

#### Introduction

The aim of the second study was to investigate the effects of photographic information and written information in different combinations on lesion detection.

The written information used was a description of moles, dysplastic moles, seborrhoeic keratoses...
and melanoma, plus a description of the ABCD guidelines for melanoma detection as promoted by the American Cancer Society (see Friedman et al., 1985). It contained the same sort of information about melanoma used by Borland et al. (1995), but excluded information about change as the study reported here was not designed to investigate change in appearance over time. More detail was provided about the other lesions than in our previous work. It was expected that a combination of written and photographic information would provide better performance than either treatment alone or than no instruction.

Method

Subjects

The subjects were recruited from first-year psychology students at the University of Melbourne. There were 96 observers, 24 in each experimental condition, 77 female and 19 male, whose ages ranged from 17 to 44 years. The span of ages is representative of students enrolled in psychology and there was no evidence that age influenced performance on the task.

Design

The observers were randomly allocated to one of four experimental groups in a 2×2 array based on combinations of the written and the photographic information. Observers were provided with either: written and photographic information, only written information, only photographic information or no information prior to completing the detection task. The third factor was within subjects: viewing slides of the four types of lesions. Observers were asked to rate photographs of lesions on the same four-point scale used in Experiment 1.

Stimuli

There were 112 stimuli, comprising 35-mm photographic colour slides of pigmented skin lesions with equal numbers of early melanoma, dysplastic naevi, benign naevi and seborrhoeic keratoses. These comprised 80 slides from Experiment 1, with the addition of 32 new slides drawn from the same slide library. (Many of these had been used as training photographs in the 16 photograph condition in Experiment 1.) This increased the power of the study to find effects.

The procedure used for showing the stimulus slides and for responding was the same as in Experiment 1. Four blocks of 28 slides were presented, with seven slides of each lesion type randomly assigned to each block.

Instructional material

Written information was adapted from experimental brochures used by Borland et al. (1995). Each of the four types of lesion was briefly described. Additional text outlining the ABCD criteria for melanoma detection (Friedman et al., 1985) was also provided. Diagrammatic information was incorporated, showing how melanoma grew in the skin and seborrhoeic keratoses on the skin.

Photographic information consisted of eight photographs of each lesion type selected from the instructional materials used in Experiment 1. None of these photos were included in the stimulus material. All photos of each type were mounted on a single white A4 page. As described for Experiment 1, statements about each lesion type were provided below the photographs. In the combined condition, the text preceded the photographs, with direct references made as appropriate.

The pages were displayed using transparent plastic pockets, so that written and photographic information could be interchanged between experimental groups. The order of presentation of the lesions in the pamphlets was the same as for Experiment 1: melanoma, dysplastic naevi, moles and freckles, and seborrhoeic keratoses.

Treatment of data

The number of correct responses for each lesion type was calculated as for Experiment 1. The maximum score correct for each stimulus type was 28. The mean of the responses on the four-point scale was also calculated for each lesion type. Three-factor multivariate analyses of variance were carried out on the number of correct responses and on the mean level of responding. The two between-
Table III. Mean number correct out of 28 for each stimulus type and treatment condition (SD in brackets)

<table>
<thead>
<tr>
<th>Photographic information</th>
<th>Melanoma written information</th>
<th>Dysplastic naevi written information</th>
<th>Keratosis written information</th>
<th>Benign naevi written information</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>12.17 (7.02)</td>
<td>10.63 (4.44)</td>
<td>11.13 (7.43)</td>
<td>23.17 (4.44)</td>
</tr>
<tr>
<td>Total sample</td>
<td>14.06 (6.35)</td>
<td>10.55 (4.35)</td>
<td>12.56 (7.75)</td>
<td>22.26 (4.45)</td>
</tr>
</tbody>
</table>

subjects factors were written information type (present or not present) and photographic information (present or no present). The within-subjects factor was lesion type (melanoma, dysplastic naevi, benign naevi or seborrhoeic keratoses).

Four missing values, covering three cases, were found. Each was replaced by the mean response for the corresponding observer and lesion type.

Results
There was no evidence of any differences in responding as a function of sex. As the age range of this sample varied considerably we also checked for age-related effects. Even with the small numbers of older respondents there was an effect, which exploration revealed to be due to the five respondents 20 or older in the no information condition responding with a higher level of concern for all lesions.

The mean numbers correct out of 28 for each experimental condition and stimulus type are shown in Table III. A significant main effect was found for stimulus type; $F(3,276) = 72.16, P < 0.01$. As found in Experiment 1, subjects performed best for benign naevi and poorest for dysplastic naevi.

There was also a significant main effect for photographic information; $F(1,92) = 12.68, P < 0.01$. Overall, subjects performed better when photographic information was provided. However, there was no significant main effect for provision of written information ($F(1,92) = 0.47, \text{NS}$) nor an interaction between information types ($F(1,92) = 0.34, \text{NS}$).

A significant interaction was found between stimulus type and the provision of photographic information; $F(3,276) = 4.49, P < 0.01$. Photographic information improved performance with seborrhoeic keratoses ($t = -4.01, P < 0.001$, for the contrast), but had no effect on the other three lesion types. The comparable two way interaction between written information and stimuli type was not significant; $F(3,276) = 0.36, \text{NS}$.

There was a significant three-way interaction between stimulus type, the provision of photographic information and the provision of written information ($F(3,276) = 2.95, P < 0.05$). Deviation comparisons and separate $2 \times 2$ analyses for each stimulus type revealed that the source of the interaction was responses to melanoma ($F(1,92) = 4.73, P < 0.05$ for the interaction), with no interaction between the two types of information for the other three types of lesion. Providing only photographic information or only written information did not improve performance for melanoma compared with no information. However, when both types of information were provided, significantly more melanomas were detected.

Table IV shows the mean level of response (extent of concern) for the four experimental conditions and the four stimulus types. A significant main effect was found for stimulus type, $F(3,276) = 365.31, P < 0.01$. As in Experiment 1, the highest level of response was to melanoma and the lowest level of response to benign naevi.

There were no main effects for the provision of photographic ($F(1,92) = 0.53$) or written information ($F(1,92) = 0.04$) nor an interaction between information type ($F(1,92) = 3.52, P = 0.06$). However, there was a significant interaction between stimulus type and the provision of photographic information ($F(3,276) = 20.57, P < 0.001$). There was no comparable interaction of written materials and lesion type ($F(3,276) = 0.87$, \text{NS}).
Table IV. Mean level of response for each stimulus type and treatment condition (SD in brackets)

<table>
<thead>
<tr>
<th>Photographic information</th>
<th>Melanoma written information</th>
<th>Dysplastic naevi written information</th>
<th>Keratosis written information</th>
<th>Benign naevi written information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>3.42 (0.31)</td>
<td>3.26 (0.28)</td>
<td>3.11 (0.46)</td>
<td>2.93 (0.32)</td>
</tr>
<tr>
<td></td>
<td>3.16 (0.45)</td>
<td>3.24 (0.33)</td>
<td>2.82 (0.51)</td>
<td>2.93 (0.41)</td>
</tr>
<tr>
<td>Total</td>
<td>3.27 (0.36)</td>
<td>2.95 (0.44)</td>
<td>2.61 (0.70)</td>
<td>1.81 (0.41)</td>
</tr>
</tbody>
</table>

NS) or a three way interaction ($F(3,276) = 0.15$, NS). Separate two-way analyses for each lesion type revealed greater concern for melanoma when photographs were used ($F(1,92) = 4.00$, $P < 0.5$) and less concern about seborrhoeic keratoses ($F(1,92) = 13.14$, $P < 0.001$), with no significant individual effects for moles or dysplastic naevi, although the trend for dysplastic naevi was in the same direction as for melanoma. ($F(1,92) = 2.75$, NS).

Discussion

The results of this study show that written and photographic information have different effects on performance in this melanoma detection task. The provision of photographs of seborrhoeic keratoses led to improved judgement of these lesions as benign, whereas the written information provided no benefit. However, provision of both types of information improved melanoma detection. The results of the analysis by levels of concern suggest that photographic information plays a more important role, in that it appears to heighten sensitivity to dangerous lesions while reducing sensitivity to benign lesions. This finding extends previous findings that indicated differential effects (Borland et al., 1995; Miles and Meehan, 1995).

As melanoma is the most critical type of lesion to detect, instructional materials should be designed to maximize their detection and in this written material appears to add something extra to the use of photographs alone. This finding indicates that the use of the ABCD criteria seem likely to be useful for the general public only when being supplemented by photographs. On the basis of the theoretical role of holistic processing in gleaning information from photographs and the finding that adding extra inspection time only had marginal effects, Miles and Meehan (1995) argued that an important component of melanoma detection is an initial holistic impression of it being dangerous, on which a feature-by-feature analysis may be superimposed. The photographs may act to modify the holistic impression, while the written material might influence the feature analysis. The findings reported here provide additional support to this argument. Training using photographic examples is likely to be central to improving public understanding of what to look for when checking their skin for possible melanoma. Written material can complement this process either by increasing hit rates (as in this study), reducing false alarms (as suggested by Borland et al., 1995) or by some combination of both.

In this study more detailed written information was provided for distinguishing melanoma than for the other lesions. It could be argued that equally detailed information may have improved the performance of written material for other lesions. However, there is no evidence to support this proposition. On the contrary, for seborrhoeic keratoses, the written information was more detailed than for dysplastic and benign naevi, and no benefit was apparent. Further, the essence of the task was about identifying possible melanoma (i.e. lesions needing medical attention) so the natural focus on the characteristics of melanoma. We saw no other relevant information about the other lesions that could have been of any use. Melanoma are typically more varied and have more complex features than the other lesions studies here.

An important question that remains is whether the effects of instructional materials found here would generalize to the task of deciding what
Melanoma detection

needs to be done about lesions individuals might find on themselves or others. We need to consider the possibility that the superiority of photographs was because the stimuli were photographs, not real lesions, or to some chance similarities between instructional and test lesions. Miles and Meehan (1995) reviewed evidence on the effects of photograph-based instruction on performance on real-life visual detection tasks that showed benefits similar to those found here. In this study the stimuli were presented as slides, while the instructional material used photographic prints, this difference is likely to reduce any effects due to the commonality of medium. We believe it is unlikely that the results reported here are artifactual.

We believe it is possible to generalize from the students used in the studies reported here to the general population as the results are consistent with the community-based sample used by Borland et al. (1995). The lesions used in this study only had a small degree of overlap with those used in the Borland et al. (1995) study. In this study lesions were seen singly and in isolation from their corporeal context, whereas in reality they often occur in proximity to other lesions. Again, given the consistency of results with those of Borland et al. (1995) who used photographs of large areas of skin often with multiple lesions, the use of single lesions here is unlikely to have been important. Evidence against generality comes from the age effect in responding, in the no instruction condition in Experiment 2. We do not know why this small group of subjects were more concerned about all types of lesions. While we do not think it is a real age effect, future studies in this area would be wise to recruit subjects such that age effects could be systematically explored. There is also a need for studies using multiple lesions and with community-based samples to validate these findings. It is also not clear what effect the ratio of melanoma to benign lesions might have and field trials would be required to test this. One group to whom the results may not generalize are high-risk individuals (e.g. those with a past history of melanoma or with lots of dysplastic naevi—a risk factor). These individuals may be more motivated to process information and thus more photographs might add to precision and it is possible that written information might be even more useful, if it is processed more.

This research provides some guidance about the content of instructional material to facilitate early detection of melanoma. The next major challenge is to ensure that the appropriate people get and make use of the information. This means that the material will need to be pretested for comprehension and cultural sensitivities, and be attractively packaged. If the Hanrahan et al. (1995) data can be interpreted as demonstrating the importance of proximity between training and performing self-screening, then the material should be used at the time they are self-screening. This means that the resource would need to be kept and used in each self-screening session. Efforts to encourage early detection among the general public must be complemented with work to ensure that appropriate professional services are in place. It is crucial to ensure that doctors have the necessary skills to diagnose and manage lesions which people present to them. In Australia, where knowledge might be expected to be high, general practitioners do not always detect early melanoma. Paine et al. (1994), using photographs of lesions with brief case histories, found a small percentage of general practitioners missed melanoma with more missing early melanoma. While most made the appropriate diagnosis and or decision to biopsy, patients should not assume their doctors will necessarily be correct, and if they have doubts, should seek a second opinion.

The results of this study indicate the likelihood that melanoma detection brochures for the general public should have some photographs of melanoma complemented with text, probably outlining the ABCD criteria, and photographs of other common skin lesions. The number of photographs to use is unclear, but eight of each lesion type would seem to be sufficient and even fewer might be adequate. Such an arrangement is likely to maximize detection of melanoma while keeping false alarm levels as low as possible.
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