tracellular fluid could explain the effect of TMP and P, as both have a strong absorption band in UV-B, at 335 nm for TMP and 329 nm for P (3). 8 MOP displays an absorption band at 303 nm (3), i.e. closer to the lower limit of UV-B. Accordingly the lack of protective effect of 8 MOP could be related to the cutting Schott WG 320 filter having excluded a great part of these shorter wavelengths. In this respect the effect of psoralens on UV-B erythema would be the result of a balance between an initial filter effect and a sensitizing effect occurring later on. Work is in progress to verify this theory.

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Protective Effects of Various Types of Clothes Against UV Radiation

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Abstract: The UV protection factors of twenty commonly used textiles were determined. Protection factors varied between 1.3 and 1700, which shows the importance of giving careful advice to light-sensitive and psoralen-sensitized patients, regarding suitable clothes.

Key words: Photo protection; Sunscreening agents; Ultraviolet rays

Many photosensitive patients show light reactions not only on unprotected skin but even on skin protected by clothes. This fact implies that UV radiation is capable of penetrating through textiles. We have been unable to find any current reports on the UV-protective effects of clothes. This prompted the present study of the UV transmission characteristics of twenty different textiles.

MATERIALS AND METHODS

The UV light sources and light-measuring equipment used were described by Fischer & Alsins in 1975 (1). The light transmission measurements were made with the 313, 365 and 436 nm bands and were repeated with two different effects of the lamps. Twenty samples of textiles were chosen from patients' hospital garments and from commonly used mens' and womens' clothing: cotton 9, velvet 1, wool 1, various synthetic and semisynthetic materials 9. Five of the materials had multicoloured patterns with two to four colours; the others were monotone, in varying shades.

The weight of each materal was determined in g/m^2. Protection factors are given as the inverted value of the transmission.

RESULTS

The UV transmission values of a representative selection from the twenty materials tested are summarized in Table I. In fourteen of the materials the transmission varied by a maximum of 10% at the three wave length bands examined. In six dark-coloured materials, protection factors were somewhat higher at 313 nm than at 365 and 436 nm.

These differences are small and imply that it is possible to use the absorption of visible light as a measure of the UV-protective effect of textiles. One simple way of comparing the UV protection afforded by different textiles would therefore be to make a visual estimation of the light penetrating the material in front of an ordinary lamp bulb.

UV protection varied less with the weight than the structure of the material. The highest and lowest absorption values were found in blue denim and womens' tights respectively. In one and the same material, dark colour protected about twice as well

Table I. *The UV-protective effects of six of the twenty textiles examined*

Material	Weight (g/m^2)	Transmission (average of the 313, 365, 436 nm bands) (%)	Protection factors
Womens' tights, beige	31	75	1.3
Patient's shirt, white cotton	154	14	7
Thin cotton, green	87	10	10
Knitted wool, white	700	8	12
Velvet, dark green	196	2	50
Denim, dark blue	319	0.06	1 700
Patient's shirt, white cotton, two layers		5	19

as light colour. Small holes from stitches diminished the protective effect considerably. Two layers of cloth gave an additive effect. A cotton material of medium thickness transmitted 4% of the UV radiation.

DISCUSSION

We have been able to show a wide variation in the light-protective effects of twenty commonly used textiles. The range of protection factors was from 1.3 to 1 700, showing that photo-sensitive patients' choice of clothes is very important. A thin cotton shirt gives a protection factor of 10, which is more than the commonly used sun screens (2). In contrast to most sun screens, clothes protect well at various wavelengths, including long-wave UV radiation and visible light. A tightly woven material gives a greater light absorption than a loosely woven one. Furthermore, dark colour and two layers of cloth add to the protective effect. We suggest that, for the light-sensitive and the psoralen-sensitized patient, careful counselling concerning clothes is at least as important as the prescription of proper sun screens.

Of the materials tested, we found that blue denimgave the best UV-protective effect. A dark-coloured tightly woven cotton material of medium thickness also gave good protection. We therefore suggest to light-sensitive patients that they dress in the materials mentioned above and wear trousers/slacks instead of stockings.

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Treatment of *Pityriasis rubra pilaris* with an Oral Aromatic Retinoid (RO 10–9359)

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Abstract. A patient with widespread PRP was first treated with an oral aromatic retinoid (RO 10–9359) and PUVA in successive periods. Retinoid treatment resulted in marked improvement but during PUVA treatment the disease became re-activated. The patient was finally treated with aromatic retinoid alone, which brought the disease to remission in 6 weeks.

Key words: Pityriasis rubra pilaris; Aromatic retinoid (RO 10–9359); Hyperproliferation; Follicular hyperkeratosis

Pityriasis rubra pilaris (PRP) is a rare, idiopathic dermatosis showing varying degrees of follicular hyperkeratosis, palmoplantar keratoderma and erythroderma.

PRP can be very distressing to the patient on account of widespread skin involvement and limitation of movement caused by thickening and fissur-