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Eye (2006) **20,** 506–508. doi:10.1038/sj.eye.6701914;
published online 13 May 2005

Sir,

The usefulness of the Amsler chart

Referring to Zaidi *et al*'s paper (*Eye* 2004; **18**: 503–508), Marc Amsler was emphatic that his charts are to be used as a white grid on a black background. My own experience has confirmed that defects are much more easily picked up in this way. A pad of recording charts was included as a convenience but not as an alternative. Which charts were the patients given to use at home?

I was fortunate in 1946 to visit Professor Amsler in Zurich and he spent time explaining the use of these charts. He was emphatic that the chart was used as a white grid on a black background.

He told me how important it is to explain to the patient that the gaze must be fixed on the central spot while being aware of the whole chart. Questions were to be put in a strict sequence. Can you see the central spot? While looking at the spot and not moving your eye can you see the four corners? The four sides? Is any of the pattern missing? Distorted? Blurred?

In his paper delivered to the Oxford Congress, Amsler gave several examples of the usefulness of the test. (Amsler M. Quantitative and qualitative vision. *Trans Ophthalmic Soc UK* 1949; **69**: 397–410, 9 Figs). Duke Elder also describes the method with illustrations (Duke-Elder S. *System of Ophthalmology*, Vol 7. Kimpton: London, 1962, pp 396–397).

In the booklet of Amsler charts, a pad of recording sheets was provided for convenience but not as an alternative. It appears that in recent years, the recording sheets have been given to patients at risk of macular disturbance asking them to use them at intervals to observe any distortion of the lines.

In my own practice, I have found that patients with central scotoma or metamorphopsia find difficulty in appreciating the defect on the recording charts, but do so easily on the proper white on black charts. This amply confirmed Professor Amsler's experience.

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Eye (2006) **20,** 508. doi:10.1038/sj.eye.6701915;
published online 13 May 2005

Sir,

More than meets the eye: alternatives to black-on-white visual field testing

The informative comments by Mr Roper-Hall and Dr Mutlukan are valued contributions to understanding the background to much modern psychophysical testing of the central visual field. The original quotes from Professor Amsler are very relevant to current practice in the use of Amsler grids and are sure to educate many contemporary ophthalmologists. Indeed, one cannot help but wonder why the current black grids on white paper were introduced, presumably as they would seem to be easier to print and thus might be more cost-effective in our predominantly state-run healthcare system in the United Kingdom.

We would emphasise, however, that our study was not to determine which type of chart is the best to use, nor the extent of visual field loss it detected, but rather an assessment of methodology that is normal current practice.[1] We found that the British National Health Service most often uses the Chart No. 1 by Keeler: a black grid on a white background. In short, our study found this to be an unsatisfactory test and Professor Amsler's original comments may indeed partly explain this. However, we stress that Amsler charts should continue to be dispensed as they do detect a fair proportion of subretinal membranes (approximately 30% in our study using black on white charts).

The significance of this area is increasing considerably with PDT laser and other treatment modalities for age-related macular degeneration that require early reliable detection of subretinal neovascular membranes.

We are in agreement that methods for early detection of submacular neovascularisation need revision. A trial using a white grid on a black background is justified. Certainly, the use of colour field test cards is a physiologically sound suggestion to test macular function. Their feasibility for elderly patients including those living at home needs to be assessed, but this would likely not be a major obstacle, although the cost of colour charts might be a more significant challenge. The benefits colour charts might confer over the black-on-white Amsler grid suggest a need for their inclusion in any rigorous comparison of practically feasible tests of central field.

Reference

1 Zaidi FH, Cheong-Leen R, Gair EJ, Weir R, Sharkawi E, Lee N *et al*. The Amsler chart is of doubtful value in retinal screening for early laser therapy of subretinal membranes. The West London Survey. *Eye* 2004; **18**(5): 503–508.

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Eye (2006) **20,** 508–509. doi:10.1038/sj.eye.6702006; published online 15 July 2005

Sir,

Treatment of bitumen burns: effective dissolution of hardened hydrocarbon residue on periorbital and eyelid burns using butter

A 35-year-old construction worker was referred having sustained molten bitumen burns when a road paving heater pipe loosened. He complained of an inability to open his left eye and facial pain. The burn had been irrigated immediately with large amounts of cold water for several minutes. On examination he had a 2.5% body area burn to the face (Figure 1a) and 1% to the hands.

Butter was allowed to soften to room temperature, applied directly onto the hardened bitumen (Figure 1b), gently mixed together and bitumen dissolved (Figure 1c). Using cotton buds the mixture was gently lifted off the skin. After 60 min later no visible bitumen remained (Figure 2a); exposing second-degree/partial thickness burns of red, mottled appearance with swelling and weeping of burst blistered surfaces (Figure 2b). His visual acuity, corneal, and ophthalmic assessment was otherwise normal. He was admitted for airway observation, given simple analgesics, no dressings, and clear fluids.

Hand burns were seen by a plastic surgeon. Facial scabs showing brownish trace residue precipitation at 1 week (Figure 2c) and healed without cicatrisation, pigmentation, contracture, or infection.

Bitumen is heated to 232C[1] for spray application and lower temperatures for road paving. When splattered, the temperature drops to 93–104C.[1] Molten bitumen cools to form a hardened water-resistant residue. A hardened surface coating, strongly adherent to underlying skin, characteristically covers thermal burns from bitumen. In a series of 92 bitumen burns,[2] 25% affected the critical areas of face, orbit, hands, and feet; 42% required surgical debridement and grafting. Bitumen skin residues persist.[3]

Bitumen is widely recognised as an occupational hazard and after topical application, bitumen-based paints induce DNA adducts in cells of adult and fetal human skin samples maintained in short-term tissue culture and inhibits human epidermal keratinocytes intercellular communication in a concentration-dependent fashion, an important effect of tumour promoters.[4] We are unaware of any studies of periocular neoplastic transformation. Oxidised or air-modified bitumen is classified as a possible human carcinogen with inadequate epidemiological evidence of a causal association for human cancers due to poor exposure data and potential confounders. Mice studies show increases in the incidence of skin and lung tumours.[5]

Facial Butt butter,[6] vegetable[7] and baby oil[8] have been reported as treatment in other bitumen burns with moist exposed burn ointment (MEBO) a suggested adjunct;[9] all contain a lipid solute to hardened bitumen. Rapid assessment enables early deep burn excision and grafting.