

Some people argue that randomised controlled trials of interventions undertaken in microsettings have little relevance for practitioners who need to deliver population-wide effects.<sup>6</sup> This view was partly supported by van Sluijs and colleagues' review,<sup>5</sup> which found multicomponent interventions more effective in adolescents. Thus, despite the methodological challenges posed, more trials of complex interventions are needed.

Importantly, the interventions themselves need to be subjected to the same level of scrutiny as the study design when assessed for funding and publication, and in systematic reviews. Reviewers need to consider whether the proposed "dose" of intervention is sufficient to produce an effect and how fidelity with the proposed protocol will be (or was) assessed (for example, process evaluation). They also need to consider whether adequate formative research was undertaken or proposed, to ensure that the intervention is suited to the target group and the setting, whether the intervention is based on theory, and whether it included efforts to create a supportive physical or social environment (or both). All of these factors will contribute to the effectiveness of interventions.

In the wake of the obesity epidemic, promising multicomponent interventions need to be disseminated, while the evidence base continues to be built. High quality adequately funded evaluation of programmes based on best practice principles is also needed. Given the

complexities involved, partnerships between academics and practitioners are essential.

- 1 Boreham C, Riddoch C. The physical activity, fitness and health of children. *J Sports Sci* 2001;19:915-29.
- 2 Biddle S, Gorely T, Stensel D. Health-enhancing physical activity and sedentary behaviour in children and adolescents. *J Sports Sci* 2004;22:679-701.
- 3 Department of Health. *At least five a week: evidence on the impact of physical activity and its relationship to health*. 2004. [www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4080994](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4080994).
- 4 Jotangia D, Moody A, Stamatakis E, Wardle H. *Obesity among children under 11*. National Statistics. Prepared for Department of Health, in collaboration with the Health and Social Care Information Centre, 2005.
- 5 Van Sluijs EMF, McMinn AM, Griffin SJ. Effectiveness of interventions to promote physical activity in children and adolescents: systematic review of controlled trials. *BMJ* 2007 doi: 10.1136/bmj.39320.843947.BE.
- 6 Green LW, Orleans CT, Ottoson JM, Cameron R, Pierce JP, Bettinghaus EP. Inferring strategies for disseminating physical activity policies, programs, and practices from the successes of tobacco control. *Am J Prev Med* 2006;31(4 suppl):S66-81.
- 7 Salmon J, Booth M, Phongsavan P, Murphy N, Timperio A. Promoting physical activity participation among children and adolescents: a narrative review. *Epidemiol Rev* 2007;29:144-59.
- 8 Sallis J, Prochaska J, Taylor W. A review of correlates of physical activity of children and adolescents. *Med Sci Sports Exerc* 2000;32:963-75.
- 9 Salmon J, Timperio A, Telford A, Carver A, Crawford D. Family environment and children's television viewing and low level physical activity. *Obes Res* 2005;13:1939-51.
- 10 Ogilvie D, Mitchell R, Mutrie N, Petticrew M, Platt S. Evaluating health effects of transport interventions methodologic case study. *Am J Prev Med* 2006;31:118-26.
- 11 Black C, Collins A, Snell M. Encouraging walking: the case of journey-to-school trips in compact urban areas. *Urban Stud* 2001;38:1121-41.
- 12 Susser M. The tribulations of trials-intervention in communities. *Am J Public Health* 1995;85:156-8.

## Occlusion therapy for amblyopia

Electronic monitoring of compliance shows that prescribing longer periods of occlusion is not always better

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Amblyopia affects about 3-5% of the population. Occlusion therapy using an eye patch to cover the non-amblyopic eye for a couple of hours each day has been the principal means of treatment. The sensitive period in which vision loss can develop and be recovered is generally up to 6 years of age.<sup>1</sup> In many European countries, population based screening and treatment by orthoptists has reduced the proportion of people with untreated or insufficiently treated amblyopia to about 1% of the population.<sup>2 3</sup>

The effectiveness of screening and treatment for amblyopia in the United Kingdom has been questioned because of insufficient evidence from randomised controlled trials,<sup>4</sup> and an effort is now being made to assess its effectiveness and cost. In this week's *BMJ*, a randomised controlled trial by Stewart and colleagues compares the effect of prescribing six or 12 hours of occlusion each day in 97 children with amblyopia associated with strabismus, anisometropia, or both.<sup>5</sup> It is the first randomised controlled trial to investigate the relation between the duration of occlusion and visual acuity, and so it greatly contributes to our understanding of the effectiveness of occlusion therapy.

The potential costs that screening and treatment

could save in cases where vision in the better eye is lost can be calculated: when amblyopia is insufficiently treated, the duration of bilateral visual impairment (visual acuity 6/12 or less—not being able to read) in later life is 0.6 years longer than in people without amblyopia (average of 1.3 v 0.7 years).<sup>6</sup> For example, if 1% of the Dutch population had insufficiently treated amblyopia, 1800 people would be at risk each year for bilateral visual impairment. If a visually impaired person costs society €5000 (£3500; \$7000), a conservative estimate, a minimum of €5.4m could be saved annually in the Netherlands. Adding to this, the remaining patients with insufficiently treated amblyopia, who do not lose vision in their better eye, have slightly reduced quality of life.<sup>7</sup>

The main cause of insufficiently treated amblyopia is poor compliance.<sup>8 9</sup> Electronic monitoring of compliance with occlusion therapy is now possible with the occlusion dose monitor.<sup>10</sup> Previous studies using this monitor found that compliance averaged 50%,<sup>8</sup> even though parents knew that compliance was being monitored. Median compliance is 70%, but a considerable number of children do not occlude at all. The most important non-clinical predictor for poor compliance

is poor fluency in the national language. This can be remedied by giving information aimed primarily at the child.<sup>11</sup>

Few guidelines exist when prescribing occlusion therapy. Age, visual acuity, and, to a lesser extent, the cause of amblyopia (strabismus, or anisometropia, or both) seem to be important determinants when prescribing a certain number of hours. Electronic monitoring now allows a precise assessment of the relation between the duration of occlusion and the increase in visual acuity.

The study by Stewart and colleagues found no significantly different increase in visual acuity between children who were prescribed six hours of occlusion each day and those who were prescribed 12 hours. The beneficial effect of wearing glasses was analysed separately. Surprisingly, however, the six hour group had occluded on average 4 hours a day (standard deviation 1.7) and the 12 hour group on average 6 hours a day (4.1). The study confirmed that older children need more hours of occlusion each day—common knowledge among orthoptists.<sup>8</sup> Children younger than 4 years needed less occlusion (less than three hours a day) than children older than 6 (who needed three to

six hours). Occluding for six hours or more each day marginally improved acuity, even in older children. A greater number of occlusion hours hastened the response but did not improve the final outcome.

Although the study was a randomised controlled trial, it was analysed on an “as treated” basis, which relates the outcome to the occlusion time actually received. However, poor initial visual acuity is the most important clinical predictor for poor treatment outcome. One reason for this is that children are less likely to accept the patch when visual acuity is low.

So what do these results mean for clinical practice? As Stewart and colleagues suggest, when evaluating compliance or a dose-response relation, compliance should be monitored electronically. Relying on patients' reports or diaries is not good enough. Their results also show that the perceived hardship of wearing a patch for 12 hours a day, imposed on the child and his or her parents, has a negative effect on compliance. Orthoptists and ophthalmologists are becoming increasingly aware that when compliance is faltering it may be better to prescribe fewer hours of occlusion if it means that their instructions are actually carried out.

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## Mental health in disaster settings

New humanitarian guidelines include the needs of people with severe mental disorders

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Guidelines on mental health and psychosocial support in emergency settings were launched in Geneva last week by the Inter-Agency Standing Committee (IASC).<sup>1</sup> They will provide guidance on protecting and promoting the mental and social wellbeing of all people affected by emergencies created by conflict or natural disasters. Among the many topics covered, the guidelines also give special attention to people with severe mental disorders in the community.

Mental disorders account for four of the 10 leading causes of disability worldwide.<sup>2</sup> Yet mental health is one of the most under-resourced specialties, and no country meets its mental health needs even when no emergency exists.<sup>3</sup> In emergencies, the proportion of people with severe mental disorders (such as psychosis or severely disabling moods, anxiety, and stress related disorders) is projected to be about 1% higher than the estimated baseline of 2-3%.<sup>4</sup> In a large emergency this can amount to thousands of people.

People with severe pre-existing mental disorders are particularly vulnerable.<sup>5 6</sup> A pre-existing disorder may be exacerbated by stressful events, by disrupted supplies of drugs, and by the lack of social support that previously sustained these people. Established traditional means of care, such as those provided by local spiritual healers, may not function. Patients in institutional care may be abandoned by the staff and the institution itself may be targeted, taken over, or

destroyed. People with severe mental disorders may not understand the risk of remaining in their surroundings, or they may be abandoned by their families and communities. If they can be persuaded to escape, they may be chained, stoned, and exposed to life threatening situations in refugee camps. They are also without adequate care and protection because of a lack of drugs and trained staff. Stigma may cause families to hide a family member who is mentally ill, so the person is unable to speak for themself.

Community interventions for people with severe mental disorders in emergencies include assessing existing services and identifying those in need; building a relationship with healers and facilitating the use of supportive traditional healing methods where appropriate; ensuring sustainable supplies of psychotropic drugs; initiating rapid training and ongoing supervision for emergency primary healthcare staff; and establishing an accessible advertised service while avoiding the creation of parallel mental health services focused on specific diagnoses (such as post-traumatic stress disorder) or on narrow groups (such as widows). The service should provide basic biological and psychosocial interventions to relieve symptoms and restore function; educate and support existing carers; work with local community structures and groups to enable protection of people who are severely disabled by mental disorder; plan for the return home of any