

**Is Blu-tack as effective at attenuating sound as over-the-counter ear plugs?**

*J Laryngol Otol* 2013;127:574–7

Dear Sirs,

We read with great interest the above article.<sup>1</sup> This prospective, case–control study demonstrates that Blu-tack (Bostik, Paris, France) has the potential to be used as a convenient hearing protection device.

We have a few comments and some positive feedback for the authors of this interesting article. Firstly, We would like to discuss the advantages and disadvantages of using Blu-tack as a hearing protection device, from a practical point of view. Secondly, We would like to make some suggestions regarding the content of future studies investigating Blu-tack as a hearing protection device.

Watson and colleagues' study found that Blu-tack was as effective as over-the-counter ear plugs at attenuating sound above 3 kHz (although less effective at attenuating sound at low frequencies). In addition to Blu-tack's effectiveness for hearing protection, other relevant factors include cost, accessibility and hygiene.

*Cost*

A search of the websites of established stationery retailers revealed that the cost of a pack of Blu-tack varied, being £1.42 at Ryman and £1.80 at Staples.<sup>2,3</sup> One pack of Blu-tack can produce at least 10 pairs of 'ear plugs', if not more, and these have the advantage of being disposable. Thus, Blu-tack is more cost-efficient than several types of over-the-counter disposable ear plugs, as priced online (i.e. E-A-Rsoft disposable yellow foam plugs, £1.75 per pair; Boots Muffles wax ear plugs, £2.55 for five pairs; and Boots Flight ear plugs, £4.69 per pair with carrying case).<sup>4</sup>

*Accessibility*

Blu-tack is much more easily available than ear plugs. Blu-tack is sold at most supermarkets, stationery stores and post offices. However, commercial ear plugs are mainly sold at pharmacies and airports. Practically, Blu-tack is a useful alternative to commercial ear plugs when one is in need of hearing protection devices and no ear plugs can be found.

*Hygiene*

It would be expected that users of Blu-tack ear plugs would be more willing to dispose of them after use, as they would be cheaper than standard disposable ear plugs. It is not surprising to see consumers re-using commercial ear plugs even though they are meant to be disposable. Thus, Blu-tack ear plugs are likely to be a more hygienic hearing protection option.

*Age of users*

In Watson and colleagues' study, only volunteers aged 17 to 56 years were selected to take part. An additional potential group of users is younger, secondary school students, who may need to use ear plugs when studying at home (especially if they have younger siblings around). Future studies should include subjects in this age group.

It is not recommended that younger children use Blu-tack, as a precaution, as stated in the Material Safety Data Sheet published by Bostik (Regulation (EC) number 1907/2006).<sup>5</sup> At present, the Bostik Material Safety Data Sheet refers to the use of Blu-tack as an alternative to drawing pins and adhesive tape; it does not mention use as ear plugs. This Data Sheet may need to be changed for legal reasons if Blu-tack were to be used for ear plugs in the future.

*Insertion technique*

In discussing the limitations of their study, Watson *et al.* quite rightly pointed out that, without clear instructions and supervision, Blu-tack could be incorrectly inserted. In reality, if Blu-tack is rolled into a ball of an approximate size to fit the conchal bowl, without supervision, the size will vary, and may not be appropriate to conform to the shape of the bowl and the outer aspect of the external auditory canal. However, if Blu-tack were to be more widely utilised as an alternative to commercial ear plugs, the provision of specific usage instructions could improve users' insertion technique, in a similar fashion to instructions for inhaler usage.

*Retention*

One issue requiring further investigation is the duration of Blu-tack retention within the conchal bowl. Blu-tack ear plugs would be of little use if they were retained for only a short period of time (e.g. 10–15 minutes). Most commercial ear plugs have a cone shape and can stay in situ even overnight, ensuring their performance as hearing protection devices. Blu-tack could lose its adhesiveness when attached to debris arising from the natural desquamation of the skin. Lateral displacement of Blu-tack would not cause serious harm, but medial displacement may require attendance at an ENT casualty clinic to remove the foreign body from the external auditory canal.

Despite the subjective nature of visual analogue scales used to assess the ease of Blu-tack insertion, degree of discomfort and users' peace of mind (i.e. in using Blu-tack ear plugs), such scales are still a very useful indicator that volunteers are psychologically willing to apply Blu-tack as ear plugs.

*Conclusion*

Watson and colleagues' pilot study has usefully demonstrated that Blu-tack has the potential to be used as an alternative hearing protection device. In order to confirm these authors' findings and to improve the evidence base, future

studies should recruit a larger number of subjects in order to better test the differences in attenuation in different age groups. Furthermore, the adhesiveness of Blu-tack should be plotted against time, to assess its long-term retention within the conchal bowl.

With proper instructions and insertion supervision, Blu-tack ear plugs may represent a cheaper, more hygienic and more convenient hearing protection alternative.

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#### References

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