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LETTER TO THE EDITOR

On an in vitro method of simulating drug release from viscous eye drops

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In the report on 'an in vitro method of simulating drug release from viscous eye drops in rabbit and man' (Melis-Decerf et al 1979), the experiment is based on an incorrect interpretation of the relationship of the blink and drug penetration into the eye.

There is a marked difference between the blink rates of man and rabbit (about every 10 s and 15 min respectively). As lid movement is involved in recoating the cornea with drug molecules associated with conjunctiva, the greater the blink rate the greater the probability that the drug will penetrate the cornea rather than be absorbed across the conjunctiva or lost via tear outflow. But the blink *speed* has little, if any, relationship to transcorneal drug penetration. Furthermore as the duration of the blink is a small fraction of the interblink period (assume the blink duration of 0·05 s—an interblink period of 10 s and 15 min for man and rabbit respectively) the tear film is undisturbed by lid movement for more than 99% of the time. Therefore the rationale for constructing a device that can continuously rotate test solutions in a cylinder at a speed similar to that of the lid during its *occasional* excursion over the cornea seems at fault, as also do the authors' assumptions that the rotational speed and that of the fluid at the inner membrane surface are identical and that the device mimicks the shearing action of the lid margin.

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