

patient end of the Y piece, catheter connector, and the part of the catheter protruding from the patient's mouth (or nostril) together form a heat-and-moisture exchanger which stabilizes the humidity of inspired gases and minimizes variations which may have occurred in the inspiratory limb of the system. It is therefore not possible to compare their results directly with ours.

I agree with their last three points: Our results apply only to canisters similar in design to the one we have used. Humidity can be increased by wetting the inspiratory tube before use. Humidity can also be increased by introducing fresh gases on the other side of the absorber.

I claim no knowledge of the humidity outputs of systems essentially different from the one I have tested. The effect of wetting the inside of inspiratory tubes is not new; this was described 11 years ago.<sup>2</sup> Finally, I do not recommend introducing fresh gases on the other side of the canister. In the standard setting, water condenses in the expiratory dome valve and any bacterial growth which may occur in time in that water will be destroyed

by passage through the lime in the canister. If fresh gas inflow is received through the expiratory dome valve, the warm gas oversaturated with moisture which emerges from the absorber will be undiluted by fresh dry gas from the anesthesia machine, and will rain out large amounts of water which will condense in the inspiratory valve and inspiratory limb. Any resultant bacterial growth will be blown directly from there to the patient's lungs.

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### The "Sign of the Tear" in Cardiovascular Resuscitation

*To the Editor:*—These days, it is not fashionable to describe a clinical sign which is based on clinical observation alone, without an experimental model or objective demonstration by an independent observer. Nevertheless, we believe we found a useful clinical sign observable in the eyes of patients during cardiopulmonary resuscitation. The sign is wetness of the conjunctiva or the appearance of tears during cardiac massage. We call it the "sign of the tear."

The production of tears is related to the blood supply of the lacrimal glands through the internal carotid artery. During cardiac arrest or circulatory collapse no tears are produced and the conjunctiva are dry. The appearance of tears or the wetness during cardiac massage indicates sufficient blood supply to the lacrimal glands, and presumably to the brain. This estimation of the cerebral circulation may be of value in judging adequacy of cardiac massage.

In the last three years we have watched for this sign carefully in each of 14 cardiopulmonary resuscitations. In ten patients, the sign was present; seven of these survived. In the remaining three, the wetness disappeared, and these patients could not be resuscitated. In four patients, the "sign of tear" was never observed and resuscitation was unsuccessful.

We now routinely watch for the "sign of the tear," since we consider this simple observation a useful criterion for estimation of cerebral circulation during cardiac massage.

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