

Could Carbon Dioxide Replace Antibiotics in Surgery?

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The journal *Medical Hypotheses* , an Elsevier publication, has announced the winner of the 2008 David Horrobin Prize for medical theory.

Written by Mikael Persson and Jan van der Linden from the Karolinska Institute in Sweden, the article “Intraoperative CO₂ insufflation can decrease the risk of surgical site infection” was judged to best embody the spirit of the journal.

The paper explains that wound infection is a serious surgical complication leading to longer stays in hospital and greater risk of death. Problems include bacterial contamination of the wound, drying of body tissues and heat loss.

The authors suggest that a wound could continuously be flooded with carbon dioxide gas (CO₂) during surgery. Carbon dioxide could prevent airborne bacteria from reaching the wound and would also suffocate germs. CO₂ is already used for this purpose in the food packaging business. Humidified CO₂ would also keep the wound warm and moist, which should reduce tissue damage and speed-up healing.

The authors have already tested their idea in the laboratory, and the next step should be a proper clinical trial in humans.

This year’s prize judge was Sir David Weatherall, Emeritus Regius Professor of Medicine at the University of Oxford. Sir David commented "I chose this because the hypothesis revolves around a very unusual approach to an extremely common and important clinical

problem and the authors seem to have gone some way to defining the route to which it could be tested by appropriate clinical trial."

The £1,000 prize, launched in 2004, is awarded annually and named in honour of Dr. David Horrobin, the renowned researcher, biotechnology expert and founder of Medical Hypotheses, who died in 2003.

Reference:

The full article reference is: M Persson, J van der Linden. Intraoperative CO₂ insufflation can decrease the risk of surgical site infection. *Medical Hypotheses*. 2008; 71: 8-13

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