

as higher inspired concentrations that were maintained for as long as 80 minutes. If we were not right on the mark, consider that in two species we had to deepen anesthesia with some agents beyond the level of "prod reflex" depression before MAC was reached, while with another agent (chloroform) this was not the case. In addition, the ratios of concentrations necessary for reflex depression:respiratory arrest:cardiac arrest:MAC were different for several anesthetics. The differences were too great to be explained by imperfections in technique alone. We therefore hypothesize that specific and unique dose-response curves exist for each anesthetic agent for every end point, as previously indicated by de Jong *et al.*² MAC is a sum of these effects, and this sum may have different components with different agents. We like this working hypothesis

and hope that better studies in different species will examine it further.

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(Accepted for publication April 18, 1972.)

Neonatology

LUNG FUNCTION AND NEONATAL RDS This is a report of observations made in newborns requiring endotracheal intubation and positive-pressure ventilation at birth. Measurements of gas uptake and ventilatory function were made in the following groups of infants: 1) 12 infants who survived and remained well ("control" group); 2) 13 infants who subsequently died and had hyaline membrane disease proven at autopsy; 3) three infants with aspiration syndrome who survived; 4) six infants with either hypoplasia of the lung or intracranial hemorrhage proven at autopsy.

Findings: 1) Mean net gas uptake in the first 2 minutes after intubation (reflecting filling of FRC) was 22.4 ml/kg in the "control" group, 11.9 ml/kg in infants with hyaline membrane disease, low in infants with hypoplasia of the lung, and "normal" in those with aspiration and intracranial disease. 2) Total compliance rose to 0.82 ml/cm H₂O after 2-4 minutes in the "control" group, but was low in infants with hyaline membrane disease, aspiration, and hypoplasia of the lung. 3) Tidal volumes averaged 0.3 ml/kg in the "control" group; all the other infants, except those with intracranial hemorrhage, had low tidal volumes.

The authors conclude that their data reinforce the view that abnormal lung function (*e.g.*, low compliance, reduced functional residual capacity) is present from the moment of birth in babies who go on to develop respiratory distress. These abnormalities may be the result of changes caused by asphyxia *in utero*. They suggest that failure to achieve a normal functional residual capacity in the early minutes of life (as indicated by low initial gas uptake) is more important as a prognostic sign than failure to achieve normal compliance. (Hey, E., and Hull, D.: *Lung Function at Birth in Babies Developing Respiratory Distress*. *J. Obstet. Gynaecol. Br. Comm.* 78: 1137-1146, 1971.)