TABLE 1. Pa_{O_2} Changes with Body Position (A) and with PEEP (B) during Halothane Anesthesia and Mechanical Ventilation in Goats

	A		B	
	n = 7;	F_{IO_2} = 1	n = 8;	F_{IO_2} = 0.21
	Supine ZEEP	Prone ZEEP	Prone ZEEP	Prone 8 cm H_2O PEEP
Pa_{O_2} mmHg (Mean ± SD)	151 ± 79	496 ± 71	91 ± 10	102 ± 7

in ruminants is situated in the dorsal part of the thorax and that the diaphragm lies at an oblique angle to the vertebral column. In the supine position the abdominal contents press backwards on the diaphragm, leading rapidly to collapse of dependent lung zones with resultant arterial hypoxemia. Our experience with goats is summarized in table 1. This shows that when the animals are ventilated with oxygen using a tidal volume of 22 ml/kg, oxygenation is well-maintained in the prone position, whereas there is a marked increase in alveolar-arterial O_2 tension difference in the supine position (A). Addition of PEEP to animals ventilated with air in the prone position produced little increase in arterial blood P_{O_2} (B).

Our recent practice is as follows: (1) Fast for 24 h and withhold water for four hours before anesthesia. (2) After induction, empty the rumen with a large bore tube and if possible, allow drainage to continue throughout the experiment. (3) Maintain tidal volumes of more than 20 ml/kg with a PEEP of 5–10 cmH_2O during surgery in the supine position. Hyperinflate to +30 cmH_2O for 3–6 breaths every 20–30 min. (4) When surgery is completed, turn to the prone position with forelegs folded back under the chest. Hyperinflate and maintain tidal volumes of more than 20 ml/kg using added CO_2 or a deadspace to maintain Pa_{CO_2} close to the normal value of about 35 mmHg.[2] With this technique it is possible to maintain normal Pa_{O_2} values without hyperinflation or PEEP for 30–60 min. For longer periods it may be necessary to hyperinflate the lungs at intervals.

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The Neonatal Neurologic and Adaptive Capacity Score (NACS)

To the Editor:—In his recent editorial, "A Critique of the Neonatal Neurologic and Adaptive Capacity Score (NACS),"[1] E. Tronick condemned the examination because, from his perspective, it probably would not prove to be "a useful clinical instrument" as "it is unlikely that it can be sensitive to the kinds of effects it hopes to detect."

As in many other aspects of medicine, this score is the result of a compromise, and will appear far too simple or too complicated according to the individual's personal tendencies and needs. According to Tronick, a psychologist and non-physician, this rapid clinical examination, which obviously does not test all of the neonate's capabilities and responsiveness, should not be used. However, since, as Tronick points out, there is no single test available that can *fully* assess a neonate, should the anesthesiologist, obstetrician, and pediatrician then simply measure neonatal acid-base balance and blood levels of anesthetic drugs without ever looking at the baby itself? We believe the NACS,[2] which modified and selected items from the Brazelton Neurobehavioral Assessment Scale (NBAS),[3] the Scanlon Early Neonatal Neurobehavioral Scale (ENNS),[4] and the Amiel-Tison Neurologic Evaluation,[5,6] provides the clinician with a potentially useful clinical instrument for looking at the baby itself. The items selected were those that were easy to elicit during the immediate postnatal period, were readily observable and simple to score, and had been shown previously to be sensitive to the effects of analgesia and anesthetic drugs as well as to birth asphyxia. No matter how simple our examination appears on the surface, subtle effects related to obstetric medication, birth trauma, or asphyxia should be ascertainable using this neurologic examination.

Almost all of Tronick's criticisms of our examination

apply equally to the Scanlon ENNS, a test that Tronick himself used in evaluating anesthetic drugs.[7] As fully described in our article[2] we believe our examination is superior to the widely used and respected ENNS. Our examination puts more emphasis on neonatal tone, avoids aversive stimuli such as repeated pinprick and Moro maneuvers, and rather than compiling twenty or more assessments of the infant's state of consciousness, which Tronick apparently would prefer—evaluates the *predominant* state of alertness during the three-minute examination.

We accept the criticism that the NACS has been submitted for publication before full demonstration of its validity. We anticipate that many physicians involved in maternal-fetal medicine will be stimulated to apply and evaluate this neonatal examination. As pointed out by Dr. Michenfelder, "determination of the validity, sensitivity and merits of the examination will follow."[8]

Finally, we would like to congratulate Dr. Michenfelder for possibly setting a new record for peer review of manuscripts (seven reviewers!); and for following the advise of La Fontaine in his fable, "The Miller, His Son and the Donkey": "On ne peut pas plaire à tout le monde," which loosely translated means, "Try to please all and you end by pleasing none."

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