not oxygen consumption in dogs after hemorrhage. Blood volume expansion decreased
temperature and oxygen uptake. Acute hematocrit changes did not affect CO or oxygen
consumption. The hematocrit in the LMDX group dropped to 12 per cent, whereas in the
LMDX-plus-blood group it was 35 per cent. The effects of treatment observed were not
caused by the particular flow properties of LMDX but rather by volume expansion, which
was comparable in the two treated groups. (Smith, L. L., and others: Effect of Low
Molecular Weight Dextran on Circulatory Dynamics and Oxygen Consumption in Experi-

Respiration

HYPOXIA EEG findings during hypoxia in
dogs showed that the phylogenetically young-
est cells of the cerebral cortex were the most
sensitive to hypoxia, while the deeper struc-
tures were affected only by prolonged hypoxia.
(Kulcsar, A.: EEG Studies during Central Isch-
emia, Der Anaesthesist 18: 278 (Aug.) 1969.)

OXYGEN THERAPY Effects of breathing
two different concentrations of oxygen (20 per
cent and 50 per cent) on oxygen uptake
(V_{O_2}), arterial blood pH, P_{CO_2} and P_{O_2} were
studied in ten patients (five patients with post-
operative atelectasis and five with septic shock)
and ten mongrel dogs rendered hypoxic by in-
fation of a bronchial balloon which caused
atelectasis of one lung. All patients had low
P_{O_2} values while breathing room air. Increasing
the inspired concentration of oxygen to 50 per
cent caused an increase in average P_{O_2} but no increase in V_{O_2}. Similar findings were
obtained in dogs with induced atelectasis.
Since tissue oxygen utilization (expressed in
terms of oxygen uptake) did not change with
increases in P_{O_2}, complicated respiratory re-
suscitative measures (e.g., tracheostomy and
mechanical ventilation) should not be ini-
tiated solely on the basis of low P_{O_2} values
but after complete assessment of the condition
of the patient. (Groves, A. C., and others:
Oxygen Consumption after Oxygen Therapy
for Hypoxemia, J. Thorac. Cardiovasc. Surg. 58:
842 (Dec.) 1969.)

OXYGEN THERAPY DEVICES The
relative degrees of efficacy of ten techniques
of oxygen administration were evaluated in
healthy volunteers. Each individual received
oxygen by each technique at flow rates of 5
and 10 l/min and after ten minutes arterial P_{O_2}
was measured. Control values for each patient
were established during inhalation of room air
before and at several intervals during the
experimental period. Devices having reservoir
bags were most effective. The nasal cannula
and catheter techniques were also quite effective,
with the former being more comfortable
for the patient, particularly at high flow rates.
These studies also demonstrated the impor-
tance of proper baffling in mask-type devices
not utilizing reservoir bags. (Shulman, M.,
Schmidt, G., and Sadove, M. S.: Evaluation
of Oxygen Therapy Devices by Arterial Oxygen

POSTOPERATIVE RESPIRATORY
FAILURE Respiratory failure has been di-
agnosed arbitrarily when P_{CO_2} is greater than
60 and P_{O_2} is less than 60 mm Hg. The carbon
dioxide electrode provides the best available
information about alveolar ventilation.
Absence of traditional danger signals is an in-
sufficient basis for assuming that respiratory
homeostasis is present. Of 40 patients who
were considered to be progressing satisfactorily
in the recovery room following a variety of
surgical procedures, four had P_{O_2} values be-
low 60 mm Hg and one of those had a P_{CO_2}
value above 60 mm Hg. Upper abdominal oper-
ations commonly are associated with respi-
atory complications, particularly in patients
with chronic pulmonary disease. When car-
bon dioxide retention is present, mechanical
assistance of ventilation is necessary. For pe-
riods of five days or less, in adults, properly
maintained nasal tubes are effective and usu-
ally preferable to tracheotomy. (Didier, E. P.,
and Sessler, A. D.: Postoperative Respiratory
1969.)