

carbon monoxide affinity ratio of all bloods examined fall between 1 : 254 and 1 : 378, and (2) these variations bear no relation to the hemoglobin percentage of the blood nor to the age and condition of the subject.

Subject.	Age.	Sex.	Condition.	Hemoglobin.	Affinity at 20° C.
				Per cent.	
H. S.	59	Male	Pernicious anemia	38	1 : 310
M. G.	27	Female	Pernicious anemia, recent transfusion	60	1 : 323
W. F.	38	Male	Diabetes mellitus	60	1 : 310
J. B.	28	"	Pulmonary tuberculosis	80	1 : 286
M. H.	3	Female	Broncho pneumonia	80	1 : 298
H. C.	31	Male	Chronic endocarditis	85	1 : 323
E. K.	12	"	Lobar pneumonia	85	1 : 254
M. M.	14	Female	Diphtheria (convalescent)	85	1 : 275
M. B.	48	"	Tumor of spinal cord	85	1 : 364
F. B.	53	"	Mucous colitis	85	1 : 323
S. C.	8	"	Tuberculosis of hip joint	90	1 : 275
E. G.	30	Male	Diabetes mellitus	100	1 : 323
F. W.	20	"	Normal	100	1 : 286
M. G. T.	30	"	"	100	1 : 378
R. M. W.	23	Female	"	100	1 : 378
A. L. P.	36	Male	"	105	1 : 364
Y. H.	46	"	"	110	1 : 275
H. W. H.	28	"	"	110	1 : 323

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The elimination of carbon monoxide and a method of acceleration.

By HOWARD W. HAGGARD (by invitation).

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Carbon monoxide combines with hemoglobin with an affinity about 300 times as great as that of oxygen for hemoglobin. Blood is deprived of its oxygen-carrying power by combining with CO and the organism suffers from a corresponding degree of anoxemia. The severity of the damage done to the victim is dependent upon the degree of anoxemia and especially upon the duration. Evidently the rate of elimination is extremely important.

A study has been made of the normal rate of elimination in dogs gassed to 60 to 80 per cent. saturation of the hemoglobin with

CO. If the animals survived, the blood was practically free of CO in from two to three hours.

The curve so obtained was relatively flat for the first half of the period of elimination. A dog with 80 per cent. of the hemoglobin combined with CO, at the end of an hour still showed 60 to 70 per cent. During the remainder of the elimination period the drop in the curve was rapid.

It is evident that considerable damage may be wrought even after the inhalation of CO has stopped.

The elimination of CO was studied in animals inhaling oxygen, carbon dioxide, and oxygen-carbon dioxide mixtures following gassing.

With the inhalation of oxygen the rapidity of elimination was increased to approximately double. The curve of elimination of CO from the blood still maintained its normal shape. Deaths from respiratory failure still occurred.

Inhalations of 6 per cent. carbon dioxide in air, increased the pulmonary ventilation, and thus accelerated greatly the period of elimination to one half or less of the normal. The curve of CO-hemoglobin in the blood tended to approach more nearly a straight line.

Inhalations of oxygen containing 6 per cent. carbon dioxide resulted in complete elimination of the CO from the blood in from 15 to 20 minutes. The curve obtained was a straight line.

With the inhalations of carbon dioxide death from respiratory failure was prevented.

III (1571)

The influence of oxygen in expelling CO₂ from the blood.

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Considerable theoretical significance attaches to the interaction of oxygen and CO₂ in blood. That variations of CO₂ tension influence the capacity for oxygen is generally accepted. There has not been, however, universal agreement among observers