

[Am J Physiol.](#) 1990 Aug;259(2 Pt 2):H269-80.

Cerebral blood flow and energy metabolism during stress.

[Bryan RM Jr.](#)

Source

Department of Surgery (Division of Neurosurgery), Milton S. Hershey Medical Center, Pennsylvania State University, Hershey 17033.

Abstract

Many, but not all, stressful events are accompanied by increases in cerebral blood flow and/or energy metabolism. The stressful events include pharmacological paralysis, footshock, conditioned fear, hypotension, hypoglycemia, hypoxia, noise, and ethanol withdrawal. These increases are significant because 1) all brain regions are often affected, i.e., certain stressful events have global effects on cerebral blood flow and energy metabolism; and 2) various stressful events appear to have a common adrenergic mechanism for increasing cerebral blood flow and energy metabolism. The adrenergic mechanism involves beta-adrenergic receptor stimulation by either epinephrine secreted from the adrenal medulla or possibly norepinephrine endogenous to the brain. While adrenergic mechanisms are not the only mechanism controlling flow and metabolism for a given stressful condition, they do appear to be common to many situations. At least part of the increase in cerebral blood flow and energy metabolism during many conditions appears to be the result of the stress response and not directly a result of the condition itself.

PMID:

2167019

[PubMed - indexed for MEDLINE]