Expect the Unexpected: CNS Dysfunction in Exertional Heat Stroke at a Warm-Weather Road Race

John F. Jardine, MD

KSI
Korey Stringer Institute

John Jardine, MD

- NY State EMT/Paramedic 1981-1992
- Board-certified Emergency Medicine physician 25 years
- Medical Director Falmouth Road Race since 2001
  - Treated >500 cases of Exertional Heat Stroke
- Sports Medicine Committee MIAA
- Chief Medical Officer Korey Stringer Institute (KSI) at UCONN
- Expert and Advisory Board, World Academy for Endurance Medicine, World Athletics

Conflict of Interest

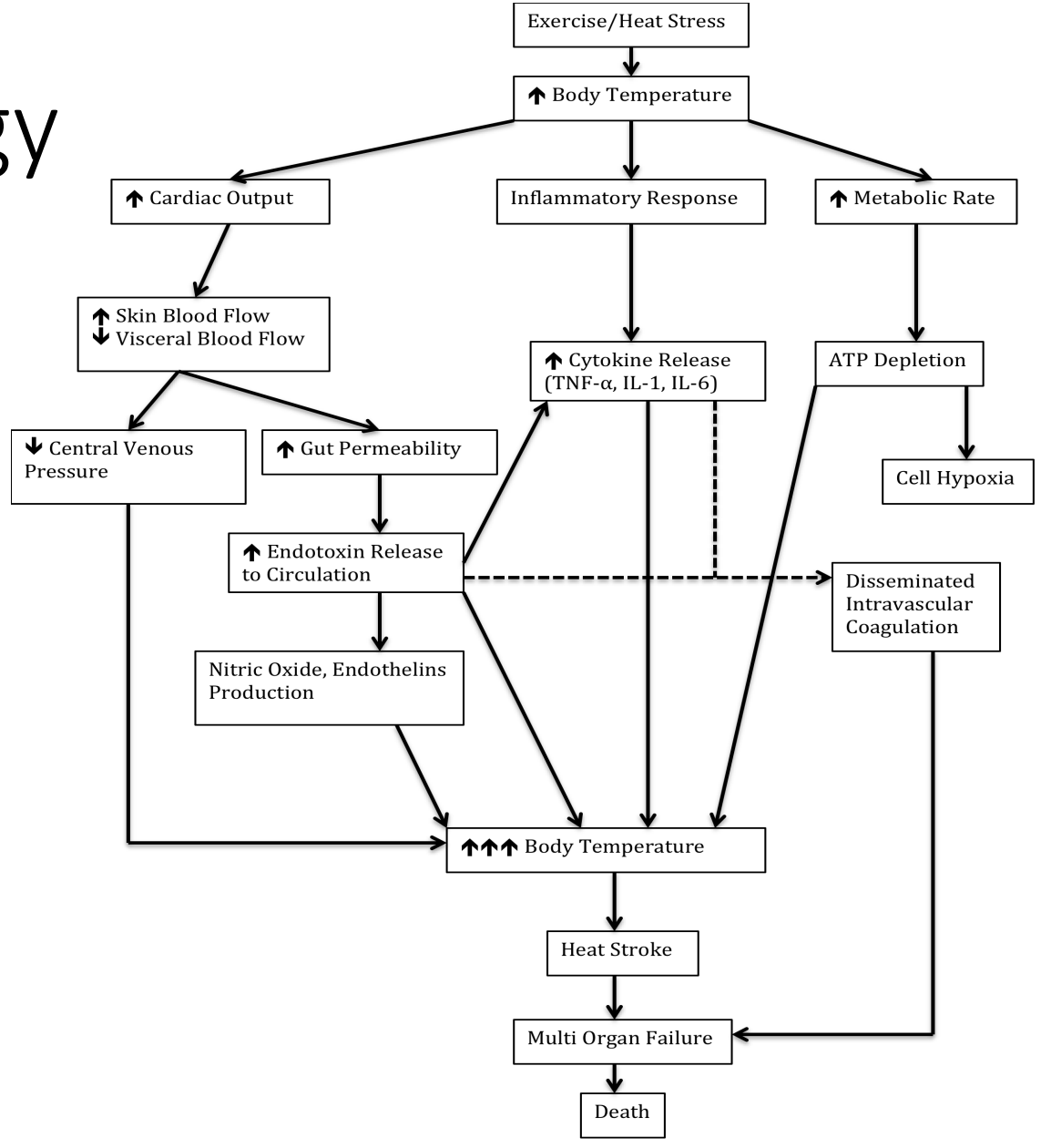
In compliance with continuing education requirements, all presenters must disclose any financial or other associations with companies to which they have a direct link and/or financial relationship that is related to the topic/content of their presentation.

- An employee at the University of Connecticut's Korey Stringer Institute which is a 501.3(c) not for profit. KSI works with corporate partners listed below who help fund the initiatives of KSI from a health and safety perspective.

Learning objectives

- Review the pathophysiology of exertional heat stroke (EHS)
- Review brain anatomy with the pathophysiologic response to heat injury
- Examine several cases of exertional heat stroke
- Discuss the importance of rectal thermometry in the treatment of EHS

EHS Pathophysiology



Vandermark LW, et. al. *Neurology in Tropics.* 2016

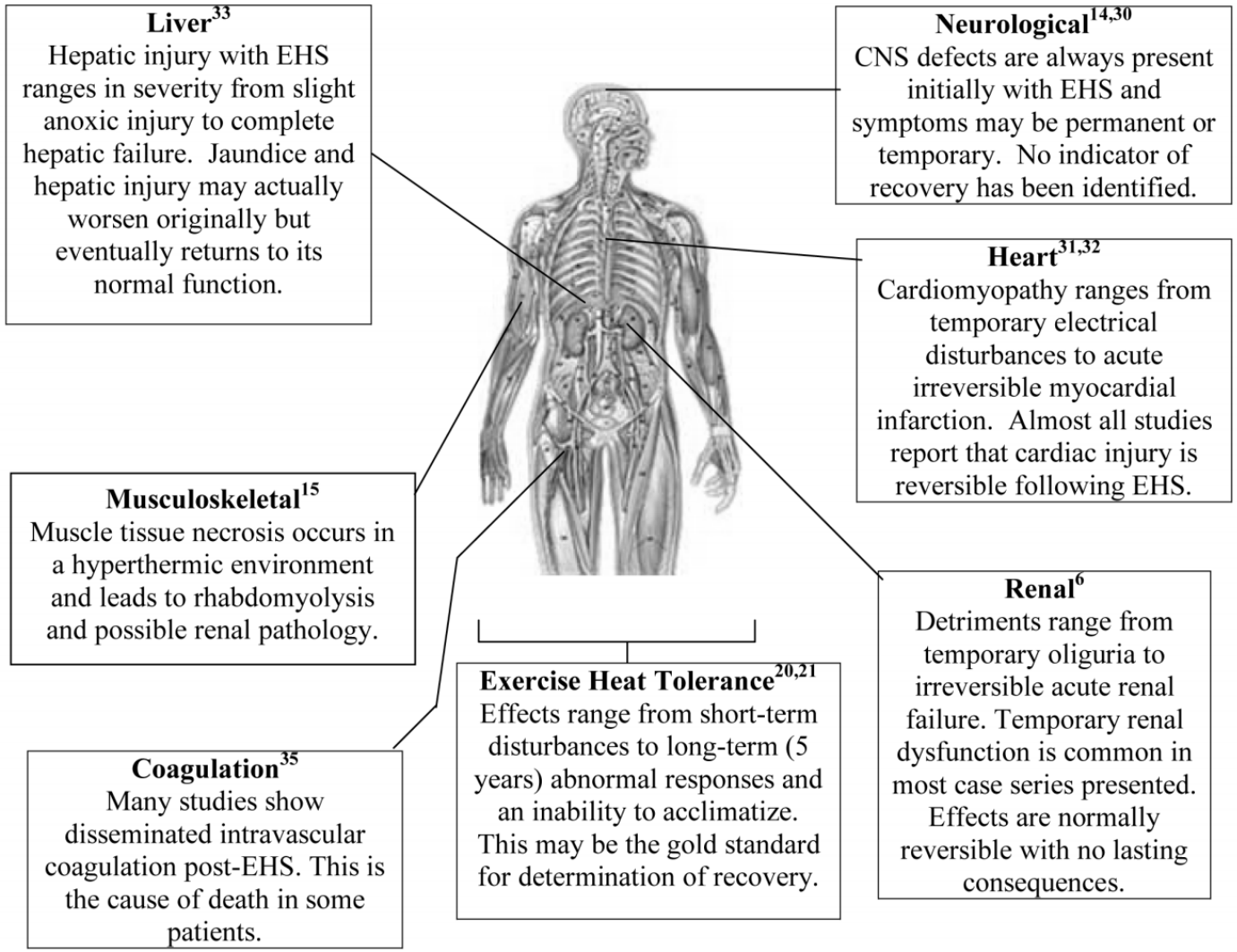


Figure 1 — Organs of the body possibly affected by the hyperthermia of EHS.

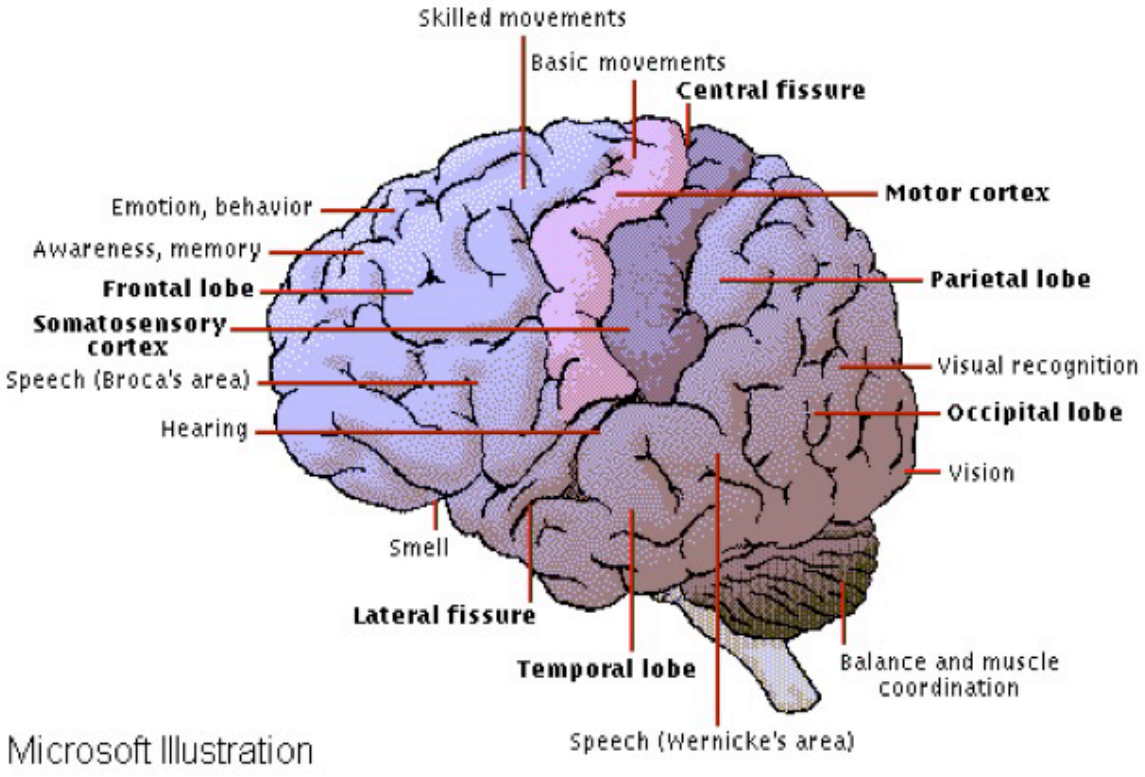
McDermott et al., *J Sport Rehab.* 2007

History

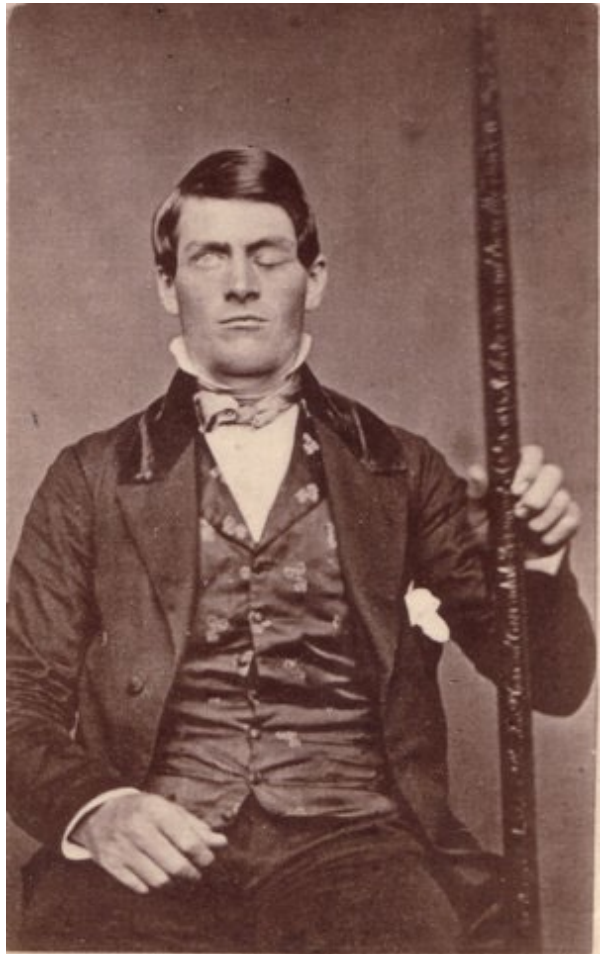
- 400 BC-Hippocrates first describes the phenomenon of sudden paralysis and coins the term *apoplexy*, meaning “struck down with violence” (“…as if by the hand of God”)
- 1599-the term “stroke” is first used as a fairly literal translation of the Greek “struck down”

- The predominance of encephalopathy in heat *stroke* may explain why this illness has been labeled as a type of stroke

The Brain



Microsoft Illustration



Phineas Gage
(1823-1860)