# Article information:

Heat stress causes dysfunctional autophagy in oxidative skeletal muscle - Brownstein - 2017 - Physiological Reports - Wiley Online Library
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# Article summary:

1. Heat stress poses a significant threat to human and animal health, as well as agricultural economics and food security.

2. Heat stress appears to be distinct from physiological changes occurring during heat stroke, with increased free radical injury being a conserved response to both.

3. Autophagy may serve as a cytoprotective mechanism in response to oxidative stress and mitochondrial dysfunction caused by heat stress, though it may be dysregulated in skeletal muscle.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article is generally reliable and trustworthy, providing evidence for its claims through references to previous studies and experiments conducted by the authors themselves. The authors provide an extensive background on the topic of heat stress, including its effects on human and animal health, agricultural economics, and food security. They also discuss the differences between heat stress and heat stroke, noting that increased free radical injury is a conserved response to both conditions.

The authors then go on to discuss how autophagy may serve as a cytoprotective mechanism in response to oxidative stress and mitochondrial dysfunction caused by heat stress, though it may be dysregulated in skeletal muscle. To test this hypothesis they conducted experiments involving female pigs kept at thermoneutral (TN) conditions or subjected to continuous heat for 1 or 3 days (HS1 or HS3). Immunochemistry was used to measure protein abundance of various autophagic signaling proteins while qPCR was used to measure transcript abundance of SQSTM1.

The article does not appear to have any major biases or one-sided reporting; all points are presented objectively with evidence provided for each claim made. There are no unsupported claims or missing points of consideration; all relevant information is included in the article. The authors also provide detailed descriptions of their experimental methods so that readers can assess the validity of their results for themselves. Furthermore, there is no promotional content or partiality present in the article; all sides are presented equally without bias towards any particular viewpoint. Finally, possible risks associated with conducting such experiments are noted throughout the article so readers can make informed decisions about whether they agree with the authors' conclusions or not.

# Topics for further research:

* Heat Stress and Human Health
* Heat Stress and Animal Health
* Heat Stress and Agricultural Economics
* Heat Stress and Food Security
* Autophagy and Oxidative Stress
* Autophagy and Mitochondrial Dysfunction

# Report location:

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