## NCBI US National Library of Medicine National Institutes of Health

Psychol Rev. 2000 Jul;107(3):411-29.

## Biobehavioral responses to stress in females: tend-and-befriend, not fight-or-flight.

Taylor SE<sup>1</sup>, Klein LC, Lewis BP, Gruenewald TL, Gurung RA, Updegraff JA.

## Abstract

The human stress response has been characterized, both physiologically and behaviorally, as "fight-or-flight." Although fight-or-flight may characterize the primary physiological responses to stress for both males and females, we propose that, behaviorally, females' responses are more marked by a pattern of "tend-and-befriend."

Tending involves nurturant activities designed to protect the self and offspring that promote safety and reduce distress; befriending is the creation and maintenance of social networks that may aid in this process.

The biobehavioral mechanism that underlies the tend-and-befriend pattern appears to draw on the attachment-caregiving system, and neuroendocrine evidence from animal and human studies suggests that oxytocin, in conjunction with female reproductive hormones and endogenous opioid peptide mechanisms, may be at its core. This previously unexplored stress regulatory system has manifold implications for the study of stress.

https://www.ncbi.nlm.nih.gov/pubmed/10941275