The manner in which we respond to stress is best described by Hans Selye with the General Adaption Syndrome (GAS).

GAS states that the body goes through a specific set of responses (short term) and adaptations (longer term) after being exposed by an external stressor. The theory holds that the body goes through three stages, two that contribute to survival and a third that involves a failure to adapt to the stressor resulting in overtraining.

The goal of training is keep the body adapting to new stimulus and recovering while avoiding the exhaustion phase with proper periodization.

Here are the stages of GAS and their relation to training:

**Stage 1**: Alarm or shock. Alarm or shock is the immediate response to stress and can include feeling flat, soreness, and stiffness. A slight reduction in performance occurs at this phase. The more advanced the athlete, the greater the stress needed to induce the shock phase.

**Stage 2**: Adaptation or resistance. Adaptation occurs as the body responds to the training and attempts to equip itself with the tools to survive exposures to stress. In training this can include hormonal adaptations, nervous system adaptations, and tissue building. Adaptation is unique to each individual.

**Stage 3**: Exhaustion. Simply put, is overtraining. This occurs when the stimulus is too great for the body to adapt. This signals that excessively high intensity, frequency, and duration exercise should be avoided.

In training the goal is to maximize adaptation, while avoiding exhausting. When recovery is maximized in the 2nd phase, neurological, muscular, and mechanical changes lead to increased performance. (Baechle & Earle, 2008)

Simply put, gains are maximized when stress from training disrupts homeostasis, but doesn’t overwhelm the body. Once sufficient stress is applied, recovery comes in to drive progress forward.

Adapted from the article “Adaptation: How it Works” by Eric Bach at http://deansomerset.com/recovery-adaptation-missing-piece-training-programs