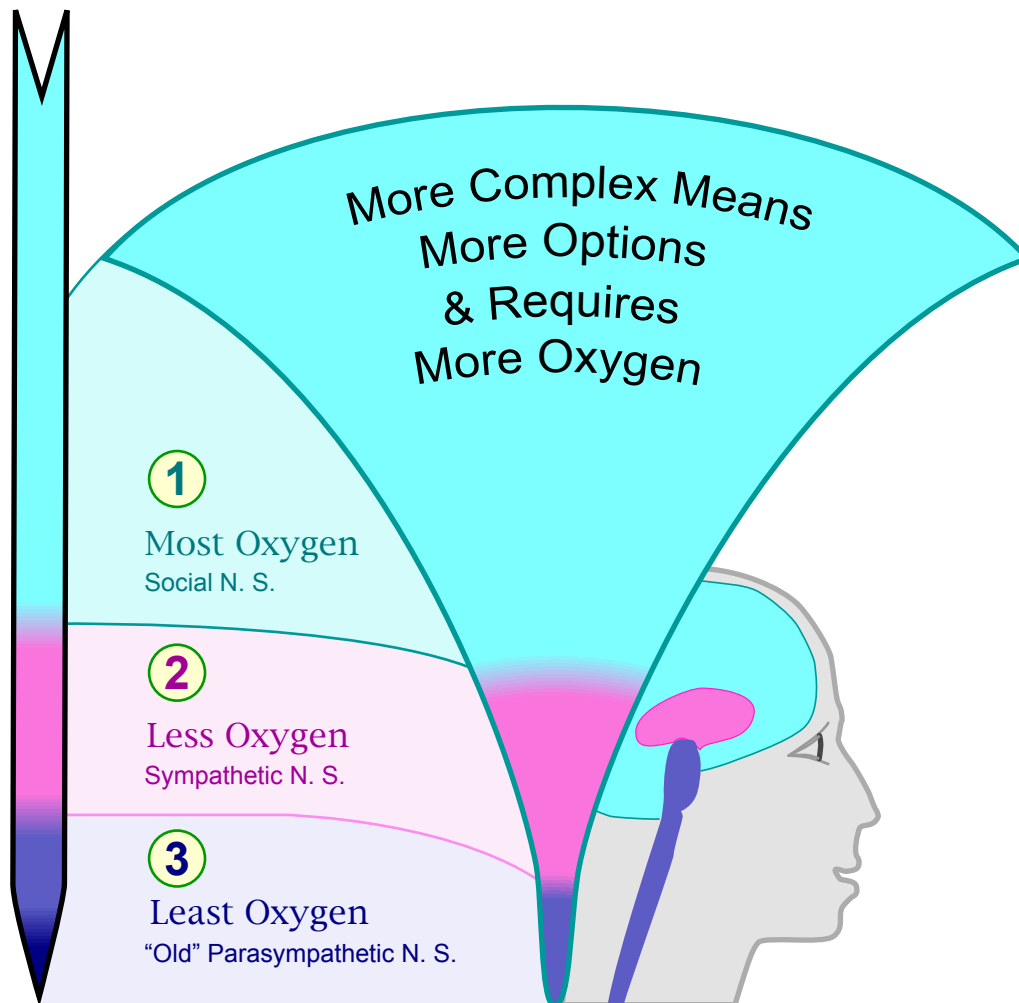


The ANS Regulates Oxygen Supply to Our Brain



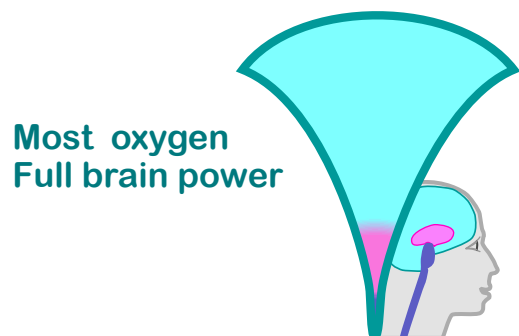
Autonomic threat responses often cut oxygen supply to the brain. Speech and even thinking can slow down or shut down.

When your nervous system registers threat, it chooses a threat response for you. This happens fast, based on prior experience and without conscious thought. The options in order -from most oxygen to least oxygen- are:

- 1) Adjust for a social response. This means lots of oxygen gets sent to the brain so we can think and process language and communicate.
- 2) Rev up for fight or flight. This means most of the oxygen gets sent to the arms and legs for fighting or running, leaving the brain just enough oxygen to decide how to fight or where to run.
- 3) Shut way down for immobilization/freeze. This means very little oxygen goes anywhere and we have very little capacity to take action, or even think at all.

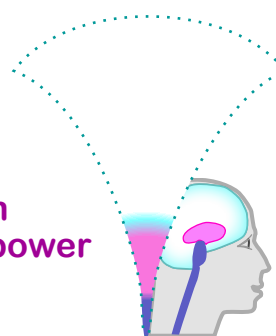
The Autonomic Nervous System regulates oxygen supply to the brain. Without enough oxygen, integration of our newer and more complex neural circuits breaks down, awareness fragments or narrows, and speech and language processing slow or stop. Social engagement and emotional regulation suffer. If we expect our brains to develop and function well, we must learn to shift out of unneeded threat responses that limit oxygen to the brain.

① Social Nervous System¹



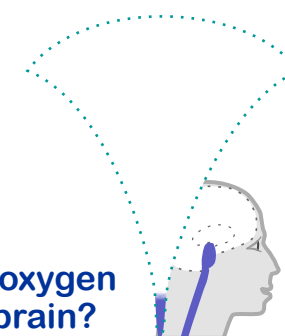
Most oxygen
Full brain power

② Sympathetic N. S.



Less oxygen
Less brain power

③ Old Parasympathetic N.S.



Least oxygen
What brain?

Oxygen and Threat Responses In Your 3 Layer Brain

“**The ANS** deals both with servicing the needs of the internal viscera and with responding to external challenges” (Porges p. 67). Autonomic regulation is the ongoing process of positioning ourselves to respond effectively to external challenges with minimum waste of energy, and positioning ourselves to rest, heal and build resources during safe times.

When there is a neuroception² of threat, internal processes often shutdown or slow down. Typically this means:

- Less oxygen goes to the brain.
- Our digestion and immune systems slow or shut down.
- Our faces and voices signal aggression, fear or unresponsiveness, rather than friendliness.
- We may have difficulty with complex tasks like speaking, processing language and accurately understanding other people's intentions.

Obviously all this is likely to interfere with our health and relationships. However, responding to external threat is essential and adaptive. Even overreacting to small threats is better than failing to react to big ones.

The more significant threat to our health and relationships is staying caught in unnecessary threat responses. Shifting quickly out of threat responses once they are not needed is the key to long term physical and relational health (Porges 2011).

We are herd animals and not well wired to feel safe or shift out of threat response in isolation. So, interactive strategies are the most efficient way to shift out of threat response. We are also individual human beings and, without a capacity for solo regulation, we can not regulate others or stick up for our own values in our partnerships, families and society. Without solo regulation skills, we can not build relationships with a sturdy capacity for mutual regulation. In today's world, full of big challenges (like grief, shame, parenting infants and teens, facing natural disasters, global warming, economic crises, and political gridlock) we need all the solo and interactive regulating capacity we can build.

1. The Social Nervous System, also called the New Parasympathetic N.S., was discovered and named by Stephen Porges as part of his Polyvagal System. It develops via interaction and language.

2. Neuroception is a subconscious system for assessing threat and safety. (Porges 2011). Our nervous systems assess and respond to threat quickly and unconsciously. At this physiological level, fear trumps logic.