



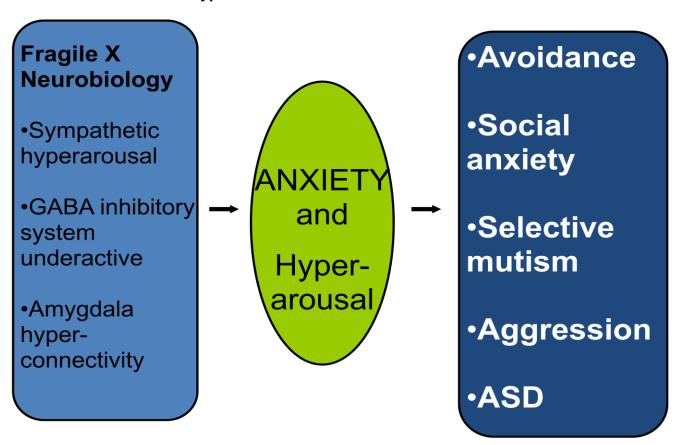
What is HYPERAROUSAL and What to Do About It

Hyperarousal is one of the more prevalent and troubling characteristics in fragile X syndrome. But just what is hyperarousal? Recent research has helped us to have a better definition of the concept of hyperarousal. From understanding the research findings, we can establish both better theory as well as better practice. This has important implications for intervention, from medical management and medication to the various therapies, including behavior/psychology, occupational therapy and speech language pathology.

What is Hyperarousal and what is its relation to behavior?

Hyperarousal is the tendency of the nervous system to become overwhelmed and overactivated by processing demands. Processing demands include those from the sensory environment, social interaction, as well as from internal processing loads for cognition, language and executive function. As the nervous system becomes overstimulated, it tends to shift out of a balanced state into one of heighted responding and reactivity; toward low level, automatic fear/fight/flight type of responses. Since the nervous system takes over the responding pattern, much of the behavior is no longer under a person's self-regulatory control.

What do we know about hyperarousal in FXS?



Research Findings on Hyperarousal in FXS:

Starting with Belser and Sudhalter's landmark work (1995) documenting the realities of hyperarousal in FXS, several researchers have added to our understanding.

Miller, McIntosh, McGrath, Shyu, Lampe, Taylor, Tassone, Neitzel, Stackhouse, & Hagerman (1999) - EDR and Sensory Hyperarousal

Boccia & Roberts (2000) - ANS and Behavior

Roberts, Boccia, Bailey, Hatton & Skinner(2001) - Physiological Arousal

Baranek, Chin, Hess, Hankee, Hatton, & Hooper (2002) - Sensory Processing and Behavior Hessl, Glaser, Dyerr-Friedman, Blasey, Hastie, Gunnar, Reiss (2002) - Cortisol and Behavior Roberts, Symonds, Johnson, Hatton, Boccia (2005) – Blink rate and altered Dopamine Roberts, Boccia, Hatton, Skinner & Sideris (2006) – Vagal Tone, Temperament Baranek, Roberts, David, Sideris, Mirrett, Hatton, & Bailey (2008) Sensory and Development

What are the best intervention practices for managing hyperarousal?

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•	Medications:	
•	Positive Behavioral Supports:	
	Relationship based Approaches:	
	Sensory Based Strategies:	
	Doutings and Language Paged Strategies	
	Routines and Language Based Strategies:	