## LEARNING TO BREATHE

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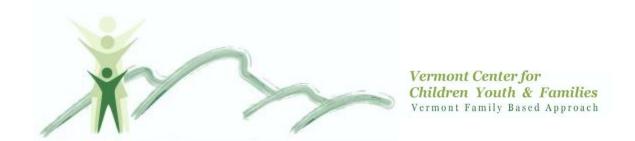
- 1. Show me how you breathe. Now let's practice belly (abdominal/diaphragmatic) breathing.
- 2. Move both hands to your belly. Imagine you are breathing behind your belly button. Feel your belly rise like a balloon.
- 3. As you breathe out, feel your belly drop as you let air out.

  Bonus: Now breathe through your nose only as you continue belly breathing. Next, notice your belly rising and falling without placing your hands on it.

PHYSICAL EXAM CORRELATE. When you place your stethoscope on the chest and back to auscultate the lungs, instruct the child to "place a hand on your belly and take a deep breath into your belly button so that your hand moves out."

APPLICATIONS: Abdominal breathing is a foundation of emotion regulation. Children may use this for a breathing break when they feel worried, upset, angry or other strong emotions, in order to self-regulate. They may also practice 5 belly breaths before bedtime to calm their minds and bodies, helping with insomnia. This could build into a longer practice as they are able and can be practiced jointly with caregivers and siblings when possible.

ONGOING DISCUSSION: Ask about sources of stress in the child's life.



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THE SCIENCE: The first step to full deep breathing and its benefits is diaphragmatic or abdominal breathing. This is a foundation for the more advanced 3-part breath. In adults (Lehrer 2013, Biofeedback) and adolescents (Kuppusamy et al., 2016, J Clin Diagn Res), breathing exercises increase parasympathetic tone, leading to reductions in blood pressure and heart rate. This is the body's "safety" system, giving a signal to the brain and body that the environment is not threatening so calmness and growth can be supported. A randomized control trial of 20 minutes of yogic breathing versus silent reading (Twal et al., 2016, BMC Complement Altern Med) suggests that breathing may exert some if its therapeutic effects by mitigating the inflammatory response. Adolescents with intellectual disability also benefitted from a *single session* of slow-paced breathing before a cognitively stressful task (Laborde et al. 2016, J Intell Dis Res).

