Abstract: The presentation will focus on recent research that has examined the effects of exercise training interventions on cognitive and brain health. I will discuss research that has examined changes in brain structure and/or function along with behavioral measures of cognition in interventions lasting from several weeks to 1 year. Study populations will include children, young and middle-aged individuals, and the elderly in addition to a variety of patient groups. Although the focus will be on training to improve cardiorespiratory fitness I will also briefly cover resistance training and well as multi-modal cognitive and exercise training program. Finally, the presentation will identify gaps in the literature and potential solutions.