

인지적 예비능의 전생애적 발달과 성공적 노화

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1. What is Cognitive Reserve?

Some people can tolerate disease burden better than others. Cognitive reserve (CR) is a hypothetical concept to explain the discrepancy between an individuals' clinical manifestation and their level of brain pathology (or age-related changes). Initially, differences in brain size and other quantitative aspects of the brain were focused (brain reserve model). In contrast, CR refers the ability to make flexible and efficient use of available brain reserve when performing tasks, and it can be changed based on experience.

2. Lifespan developmental perspectives on CR

Understanding how CR develops across the life course is important. Cognitive development begins with prenatal environment. It grows until reaching the peak in the mid-20s and stable in middle-age, followed by decline in later life. Determinants of CR can include family social class at birth, early-life school performance, educational attainment, occupation complexity, physical activity, leisure activity, social engagement etc.

3. How to improve CR and successful aging

CR can be improved based on life-long experience. In terms of lifespan developmental perspectives, we need to focus on different elements of the cognitive trajectories over the lifespan and developing specific interventions for different life stages. Cognitive function in late life is the accumulation of both cognitive growth in childhood and early adulthood, and the degree of maintenance through middle-age. For successful cognitive aging, therefore, maximizing the peak of cognitive function in young adulthood will improve cognitive function for the remainder of the adult life. Similarly, trying to maintain cognitive function in middle-age by lifelong education, exercise and other activities will contribute to adults aging well, minimizing risk of cognitive impairment.