

Positive Health and Measurement

Presentation to the National Children's Study Advisory Committee

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Introduction

- Members of the Advisory Committee (AC) and Duane Alexander, director of NICHD, have expressed interest in the impact of various influences on (positive) health and concern with the lack of current hypotheses focusing on measuring positive health and on measuring how health develops in children.
- It is important to measure health, not just disease, and develop hypotheses that examine the relationship of various influences on health and development.



Introduction

- This is a valuable research topic, especially for the NCS goals.
- While there has been a lack of consensus in the field on how to conceptualize positive health for children and adults, as well as how to measure it, there are several recent and forthcoming reports that have demonstrated a converging set of notions and potential methods to accomplish this task.



Proposal

Given the interest by the AC in positive health and development, the potential importance as a theme or integrating construct for the NCS, and the lack of specific hypotheses that address the determinants of positive health, we propose a targeted set of activities over the next 6 months to formulate a conceptual approach. Specifically, this will consist of:



Proposal

- Formulating a conceptual framework for considering the influences on positive health and development
- Examining the current status of measurement approaches and specific measures of positive health and development
- Considering and proposing a series of hypotheses that could be tested on what influences positive health and development
- Proposing a set of options for the AC to consider how to most effectively integrate our findings within the study



Methods

- Convene an ad hoc working group of 8-10 people
- Include representatives from the AC and Working Groups including Development, Health Services, Social Environment, and Study Design
 - 3-4 people performing the primary work, others to review and comment
- Meeting in person in January, March and May with other meetings by phone
- Progress report in March to the AC
- Final Report in June with presentation to AC



Final Report

The Final Report will contain:

- The importance of understanding the influences on measuring positive health and development
- Challenges and opportunities presented by the NCS to measure positive health
- Proposed conceptual framework for considering health and development
- Proposed conceptual definitions that could be operationalized, measures that could be implemented and specific variables that should be considered



Final Report

- Proposed set of overarching, thematic and main effect hypotheses on positive health that could be tested
- Measurement issues and options to consider in order to develop a measurement strategy and set of valid and reliable variables
- Suggested approach to be adopted
 - How to move from here in order to test the hypotheses and measure key variables
- Other considerations for AC



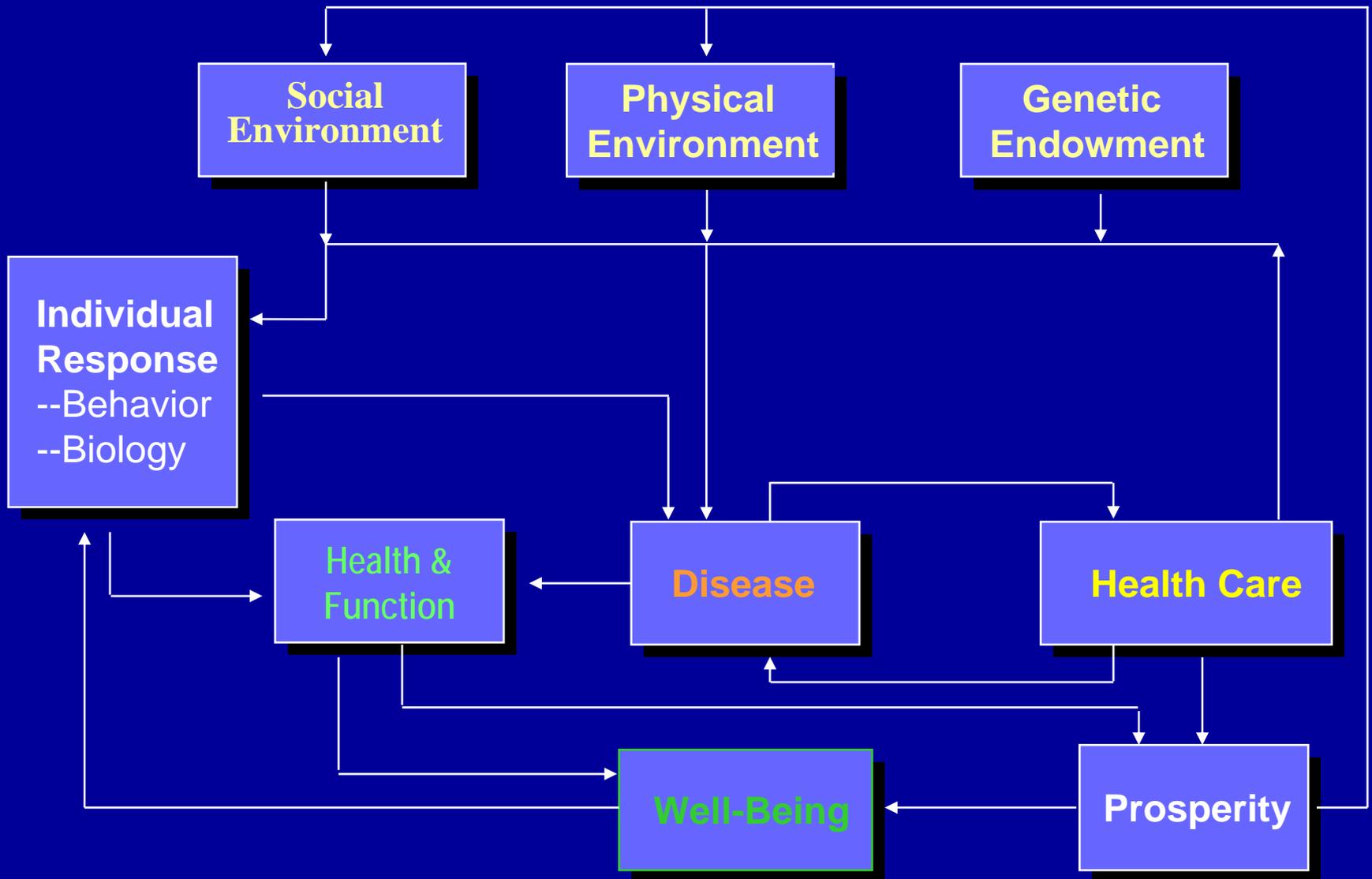
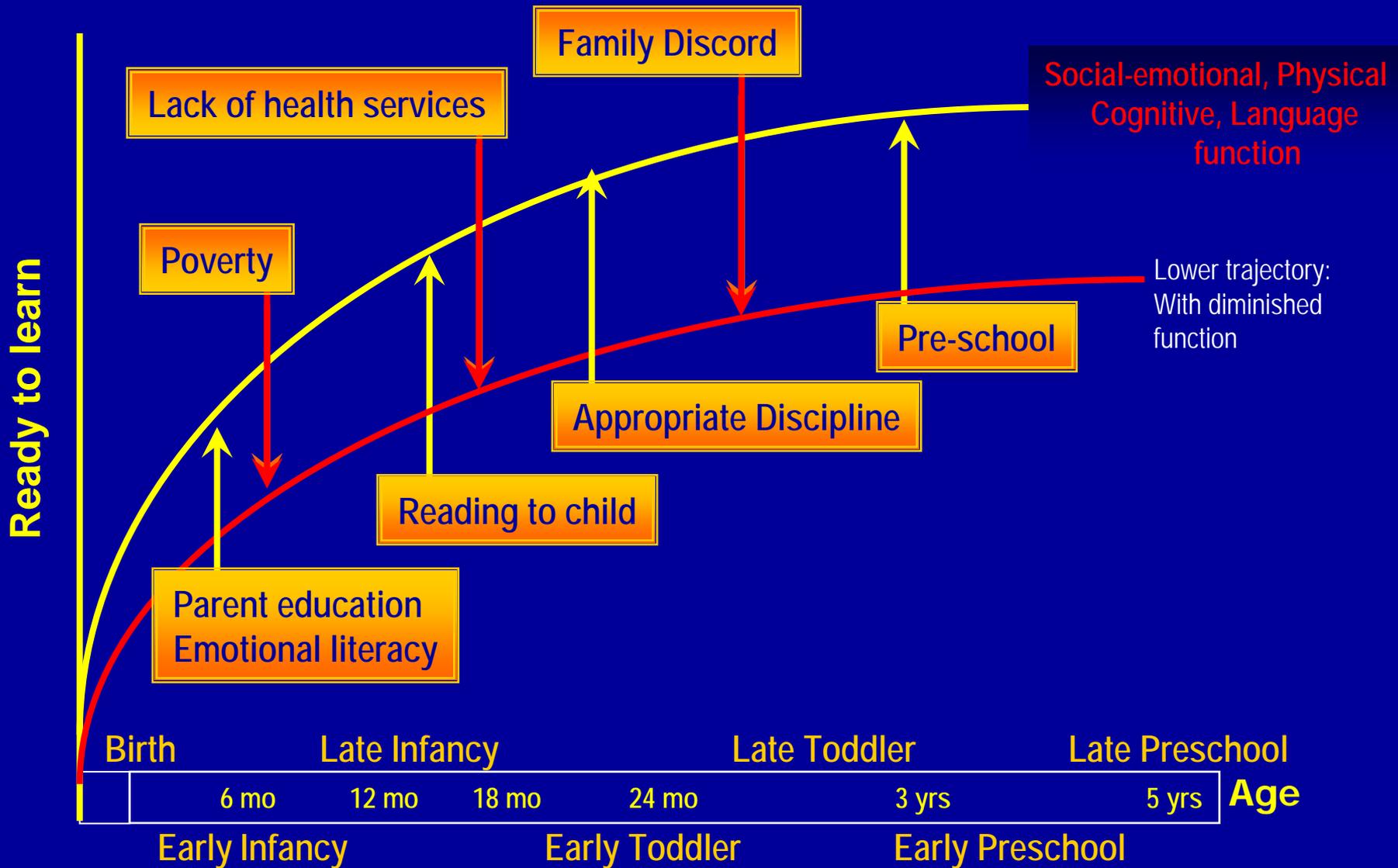


FIGURE 2: THE MULTIPLE DETERMINANTS OF HEALTH MODEL. “Multiple determinants” models of health production illustrate the different kinds of factors (eg. social, physical, genetic) that determine health, and the pathways through which these factors create health. Multiple determinants models have played an important public policy role, broadening the range of issues that are understood to be health issues, and illustrating the relationships between environmental, social and economic factors. Adapted from: Evans, Robert G., et al. [eds.] *Why Are Some People Healthy and Others Not? The Determinants of Health Populations*. New York: Aldine de Gruyter. Copyright 1994, Walter de Gruyter Inc., New York.

Strategies to Improve School Readiness Trajectories



How Risk Reduction and Health Promotion Strategies influence Health Development

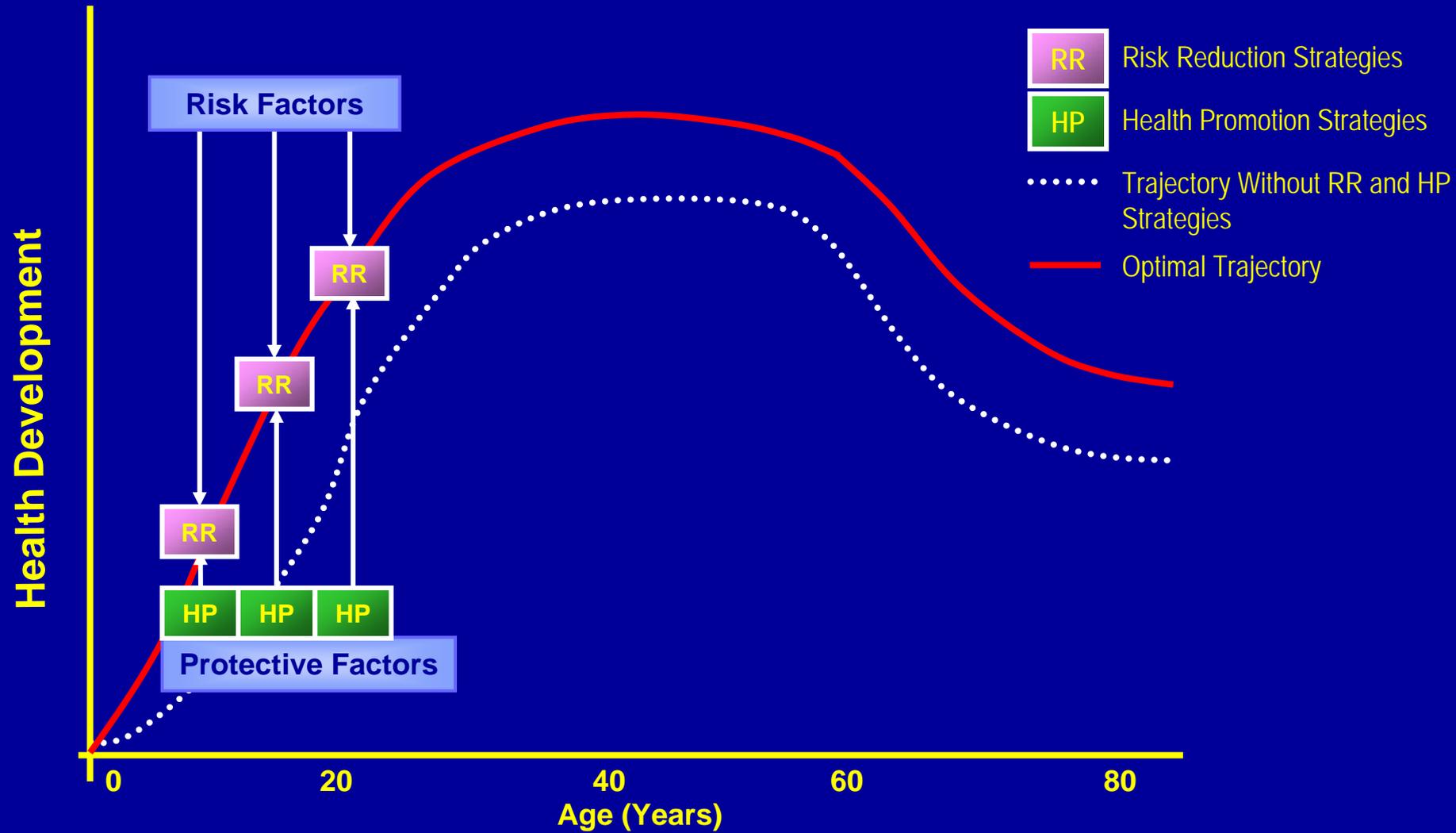
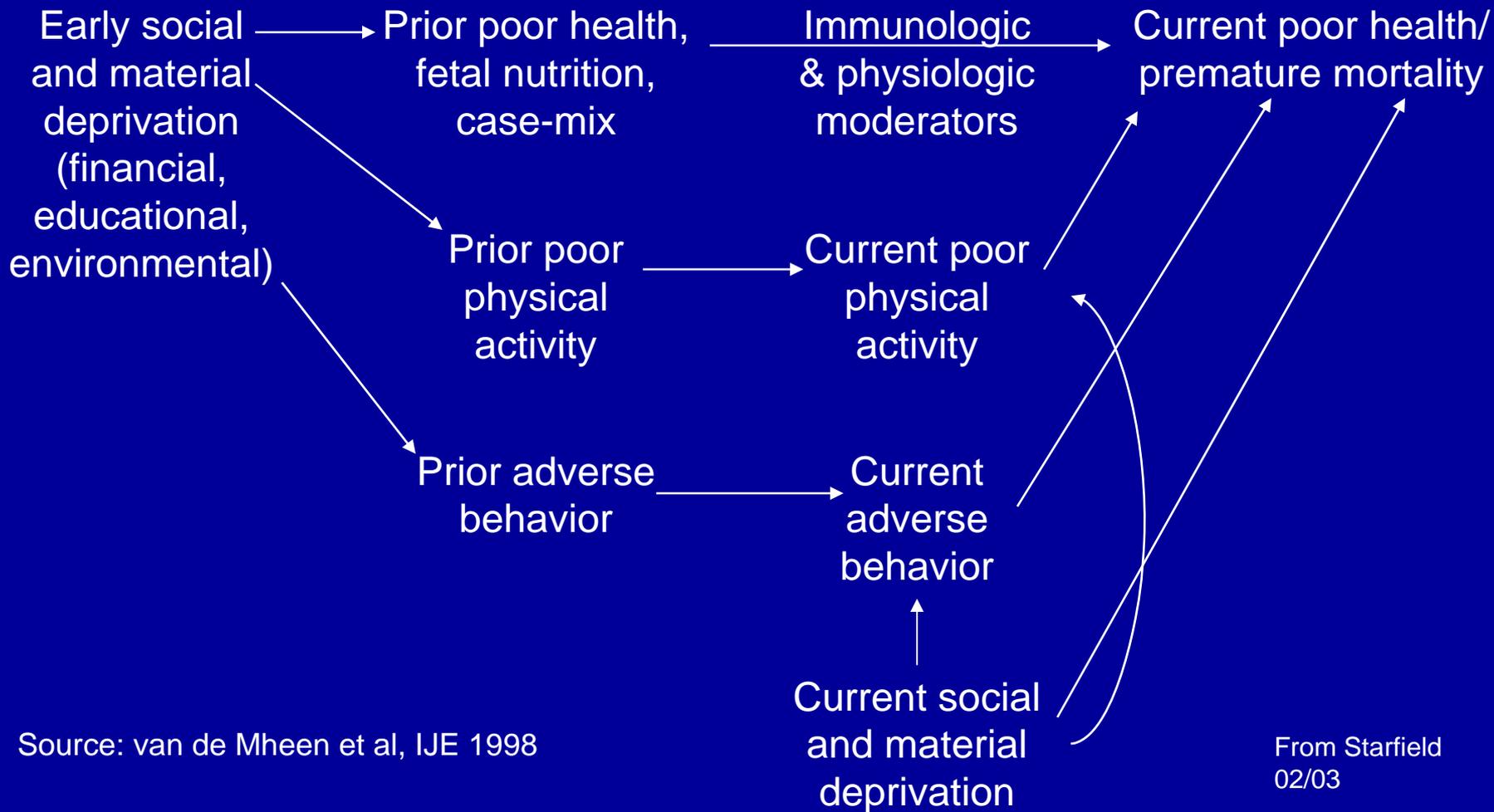


FIGURE 4: This figure illustrates how risk reduction strategies can mitigate the influence of risk factors on the developmental trajectory, and how health promotion strategies can simultaneously support and optimize the developmental trajectory. In the absence of effective risk reduction and health promotion, the developmental trajectory will be sub-optimal (dotted curve). From: Halfon, N., M. Inkelas, and M. Hochstein. 2000. The Health Development Organization: An Organizational Approach to Achieving Child Health Development. *The Milbank Quarterly* 78(3): 447-497.

Early Childhood Antecedents of later Health

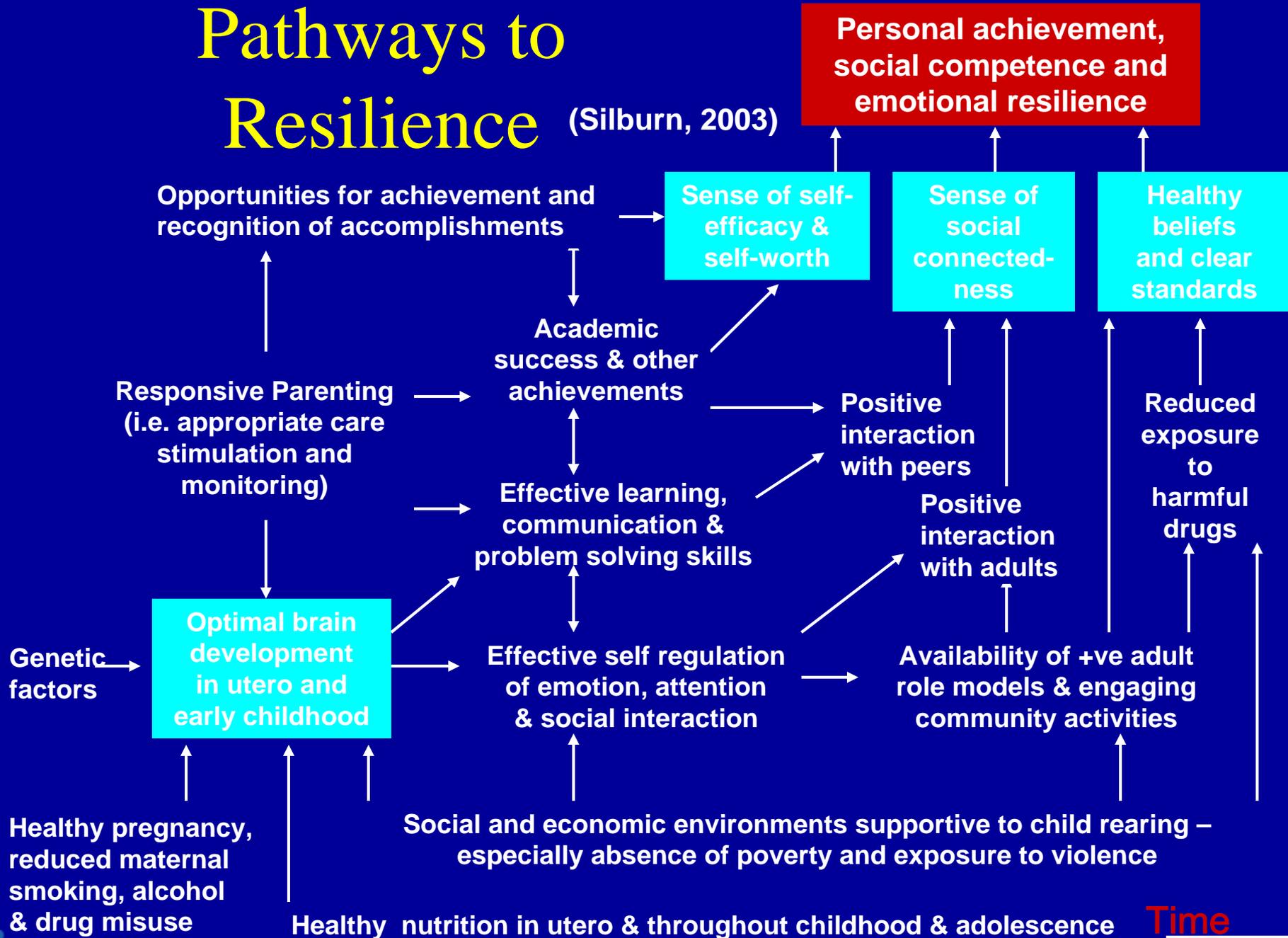


Source: van de Mheen et al, IJE 1998

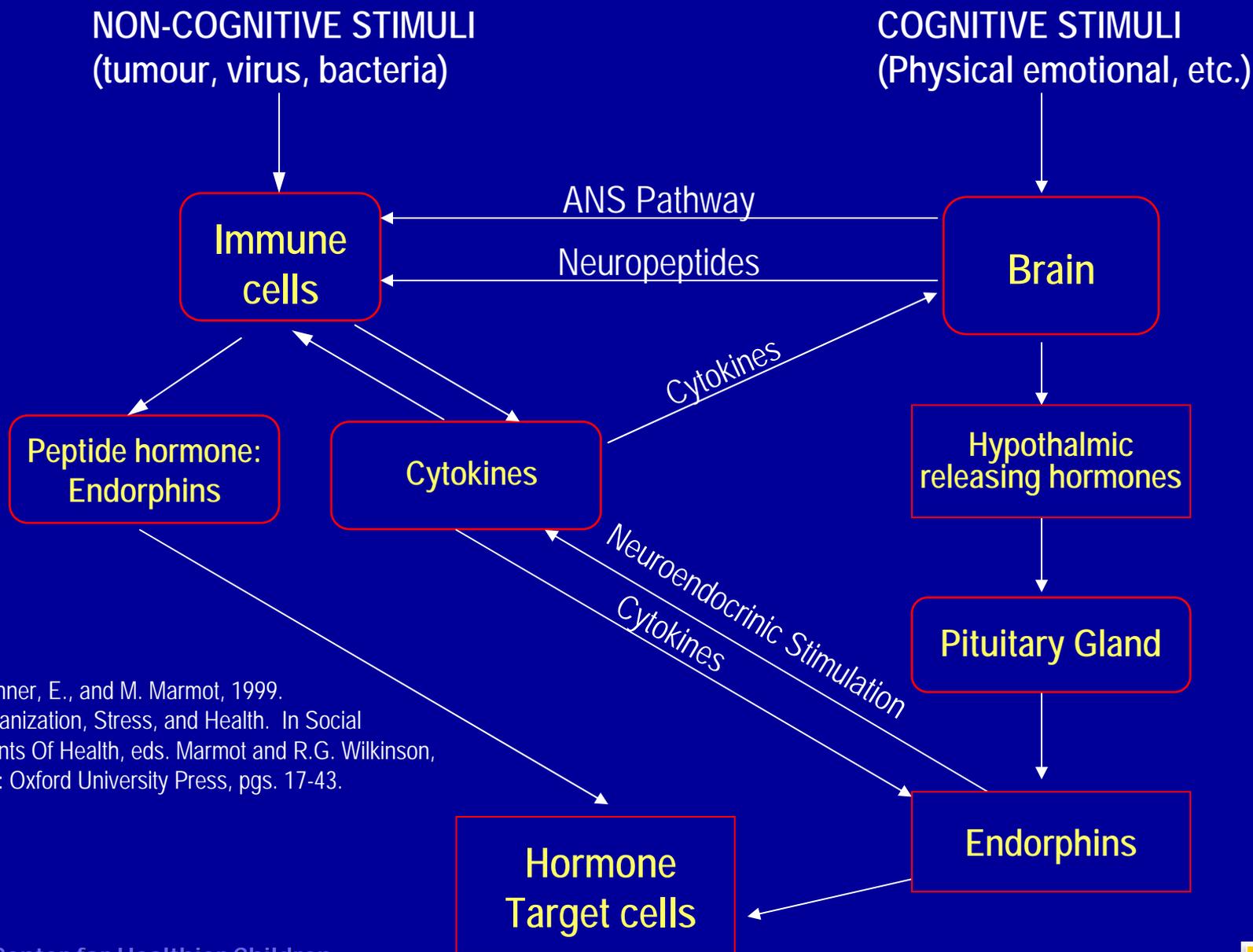
From Starfield
02/03



Pathways to Resilience (Silburn, 2003)



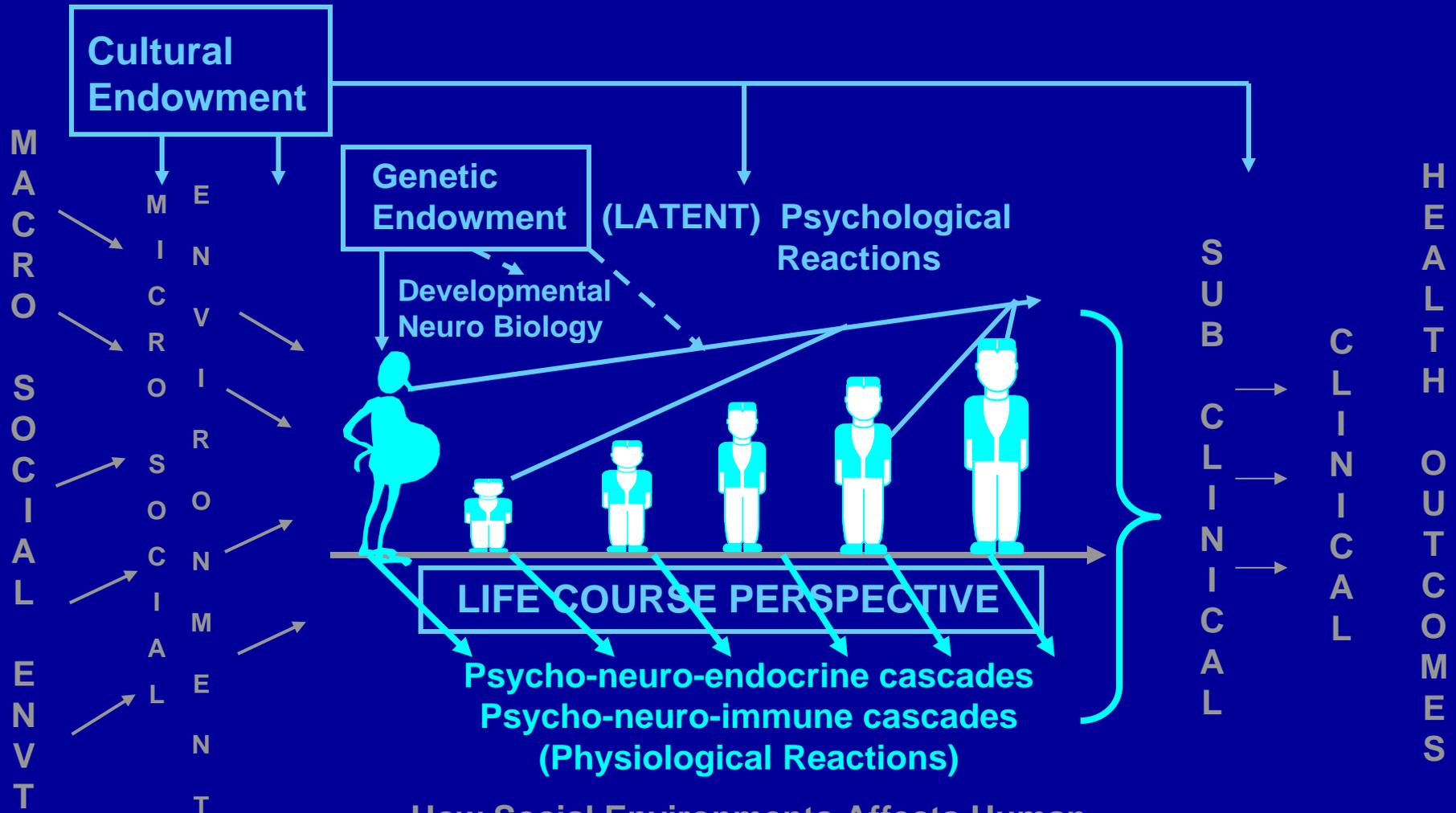
How external environments “get under the skin”



From: Brunner, E., and M. Marmot, 1999.
Social Organization, Stress, and Health. In Social
Determinants Of Health, eds. Marmot and R.G. Wilkinson,
New York: Oxford University Press, pgs. 17-43.



Schematic Depiction of Population Health



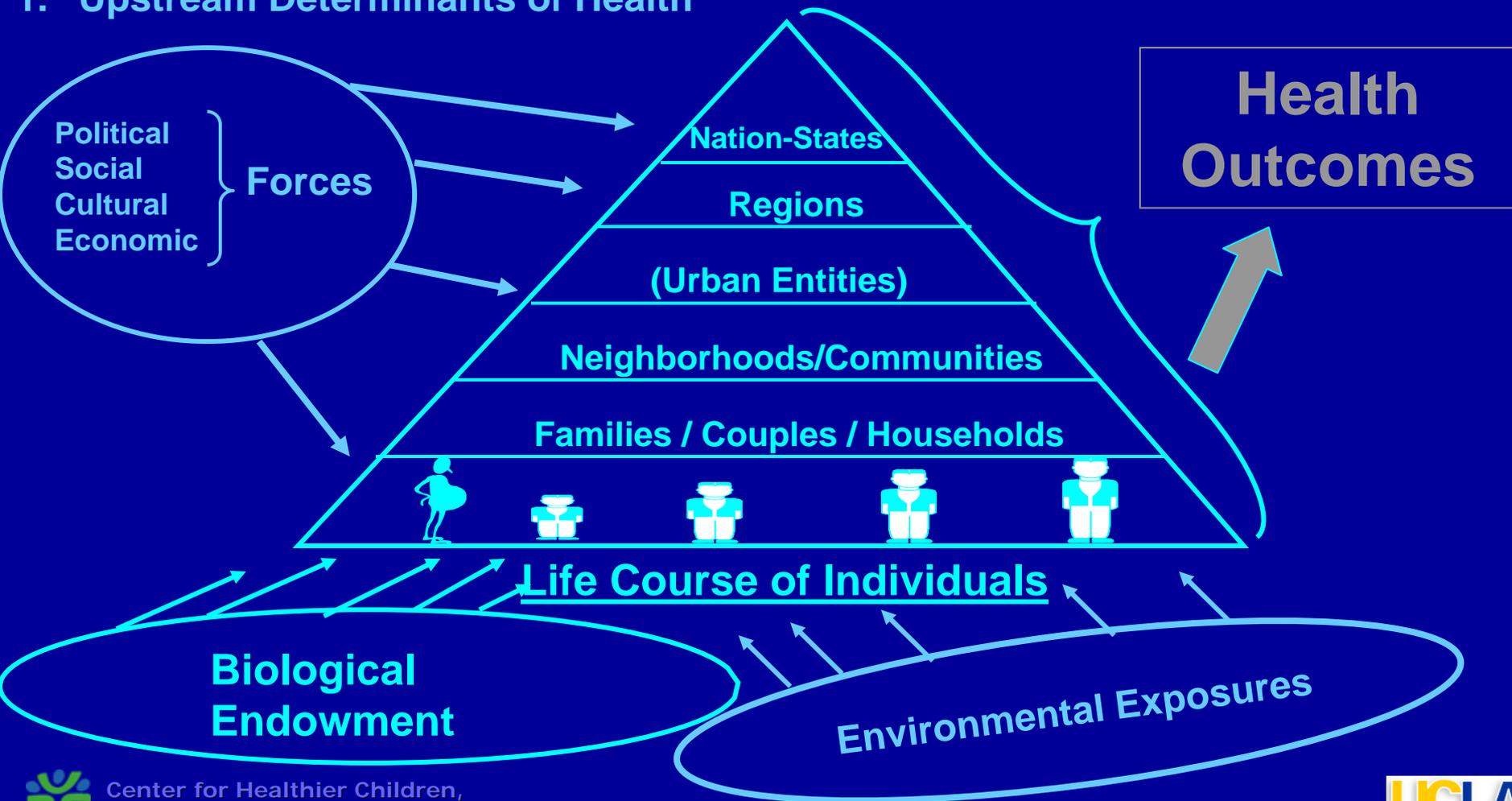
How Social Environments Affects Human Health Via Intermediary Pathways



Schematic Depiction of Population Health from Hertzman

Substantive Foci

1. "Upstream Determinants of Health"

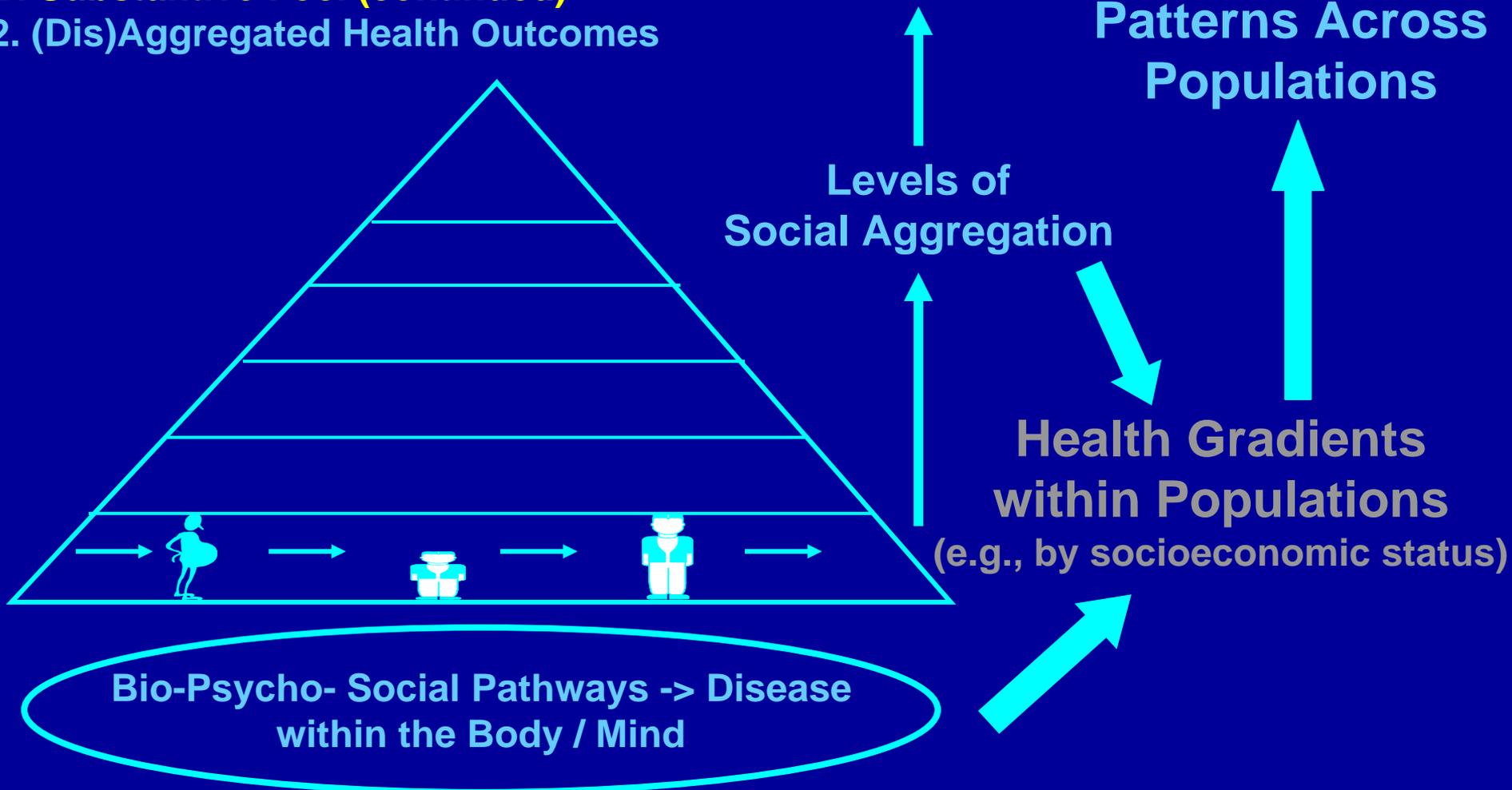


Schematic Depiction of Population Health (Sciences)

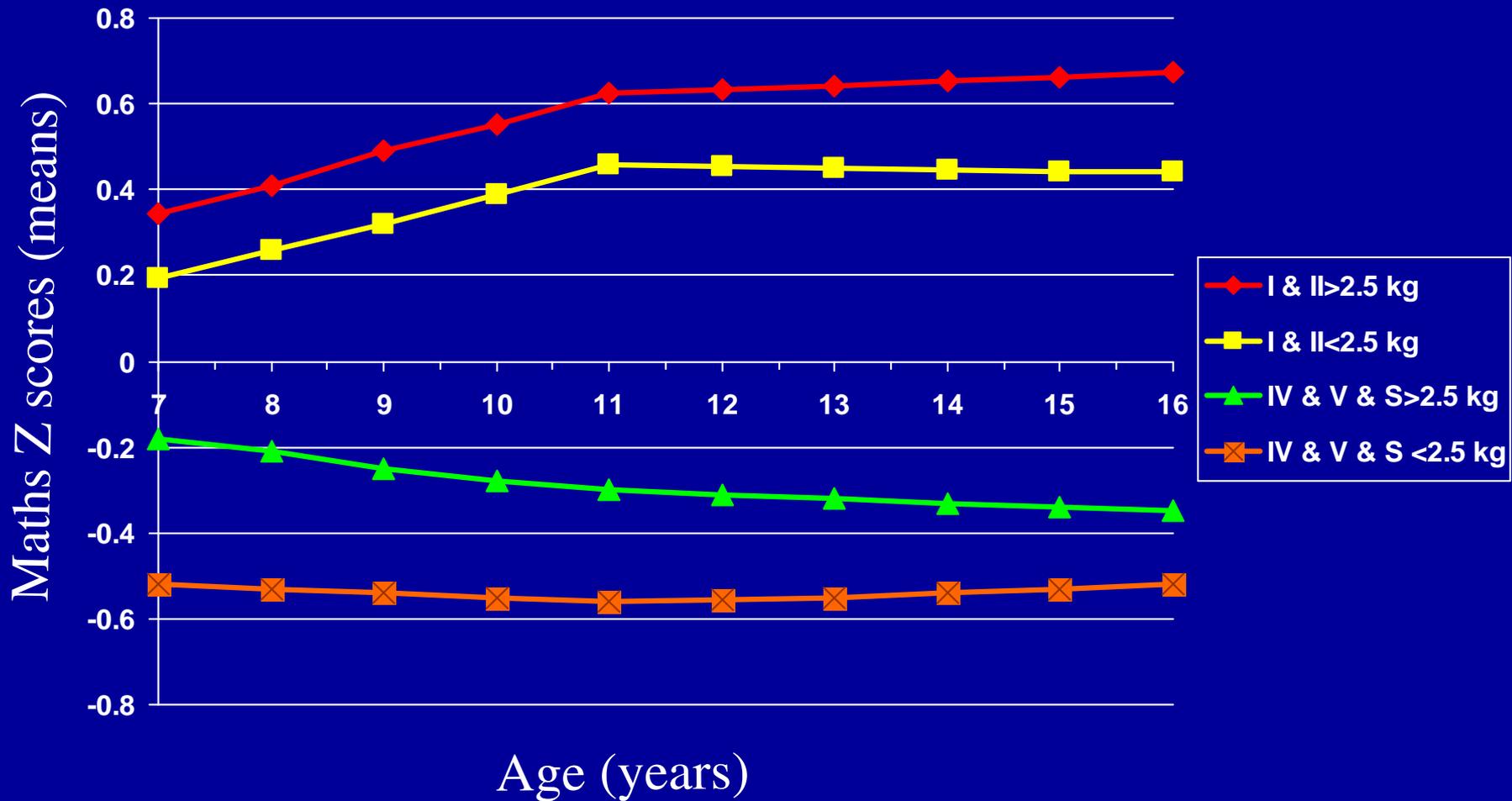
(continued)

B. Substantive Foci (continued)

2. (Dis)Aggregated Health Outcomes

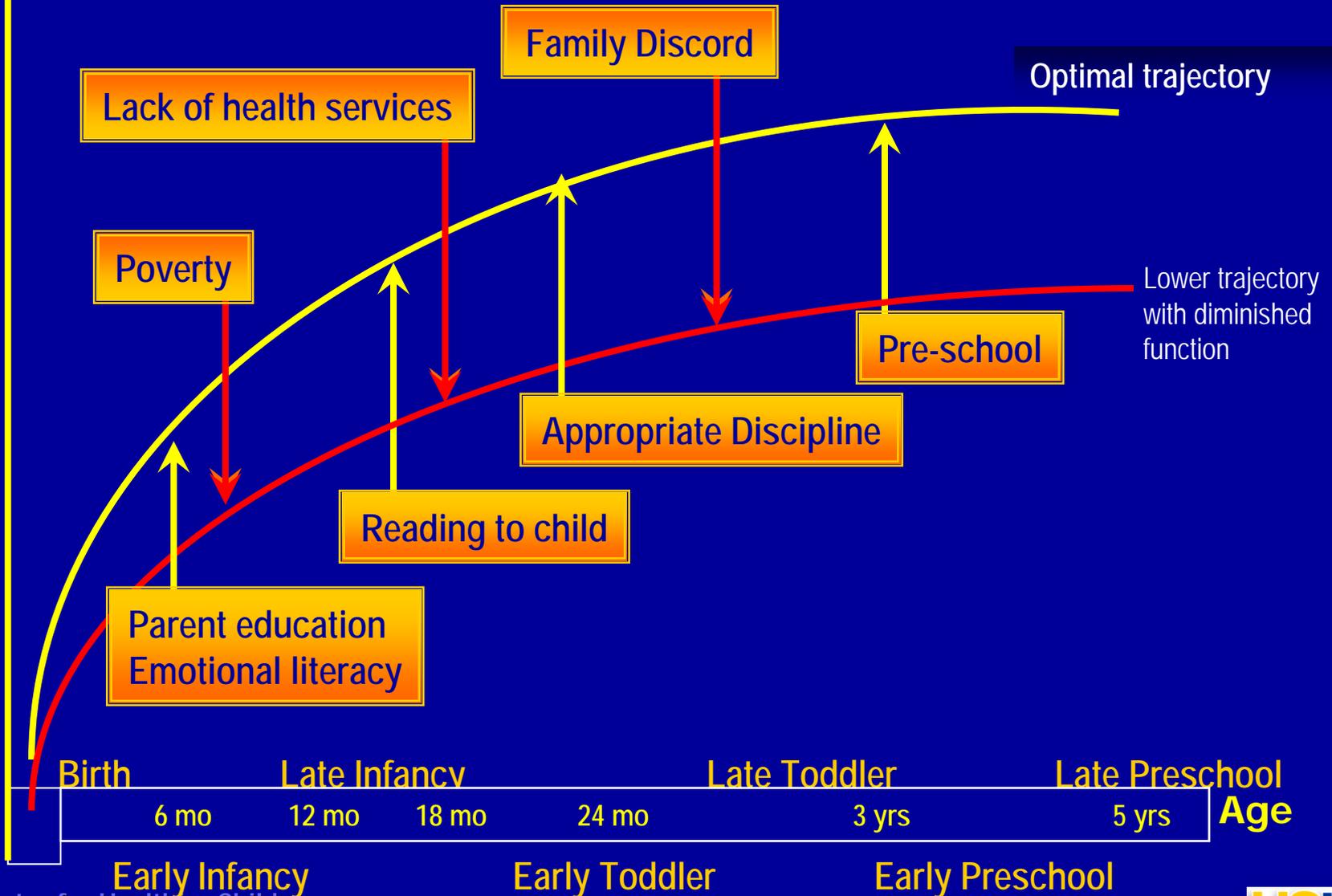


The Joint Impact of Low Birthweight and Social Class at Birth on Math Achievement (1958 British Birth Cohort)

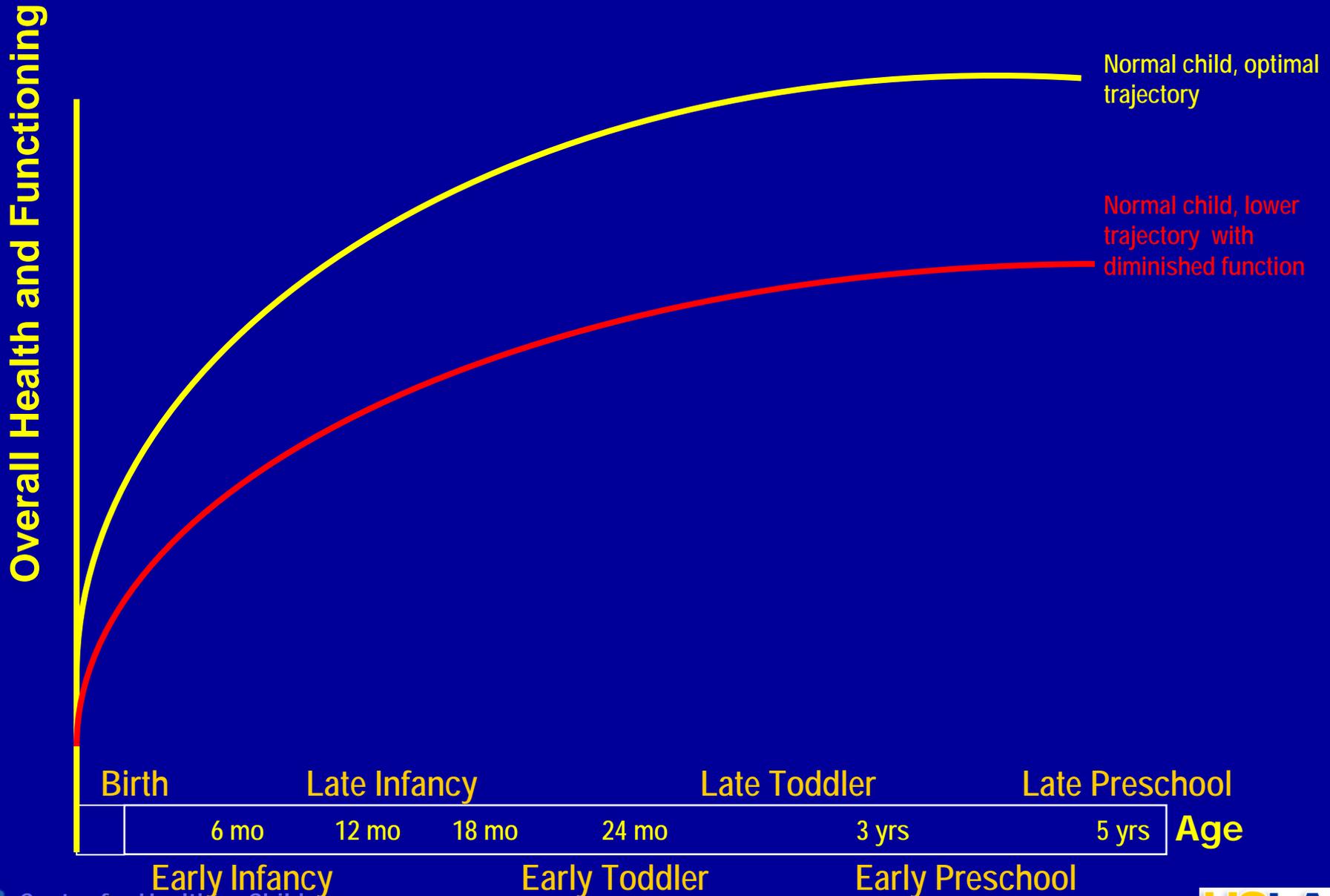


Health Trajectories

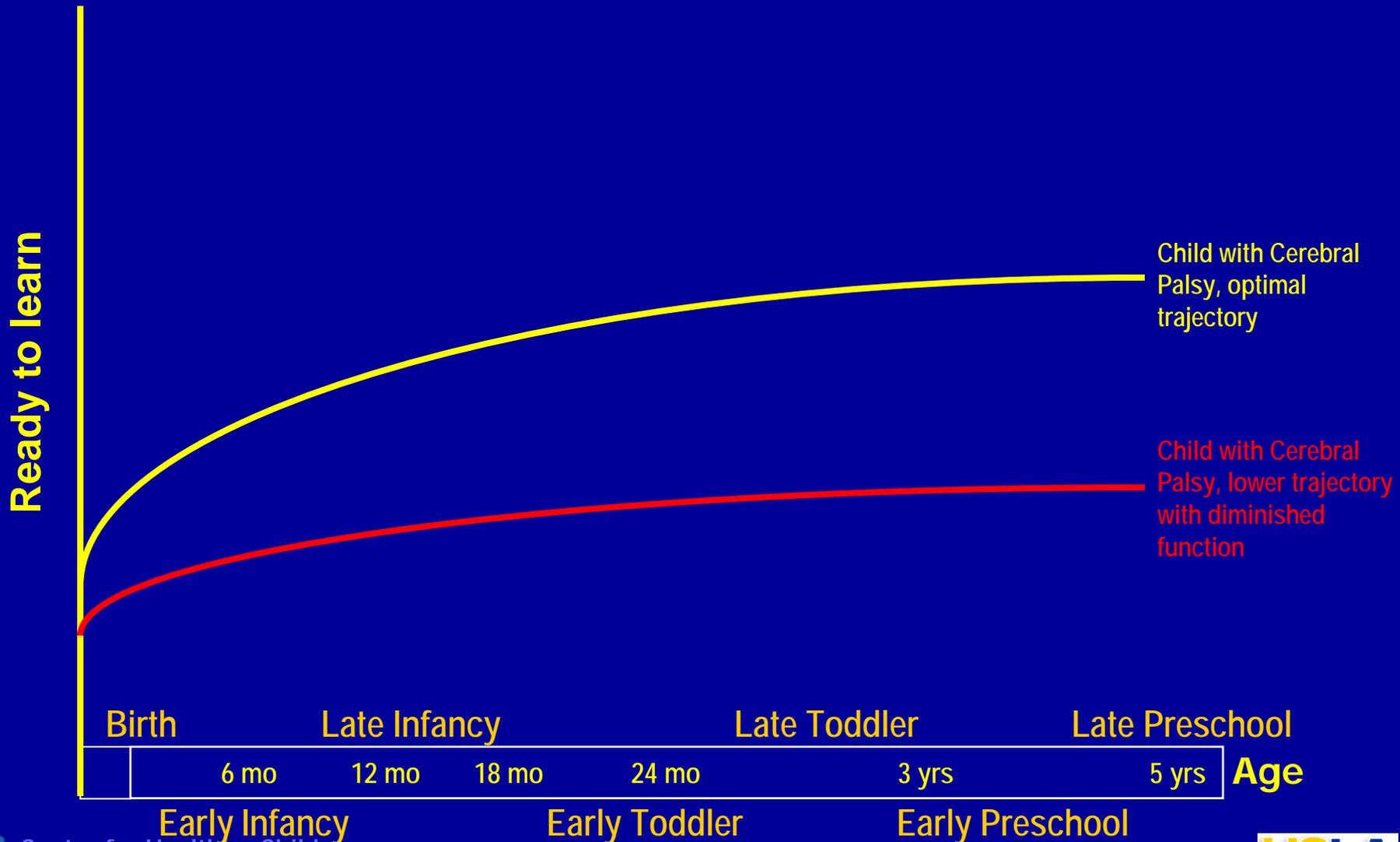
Overall Health and Functioning



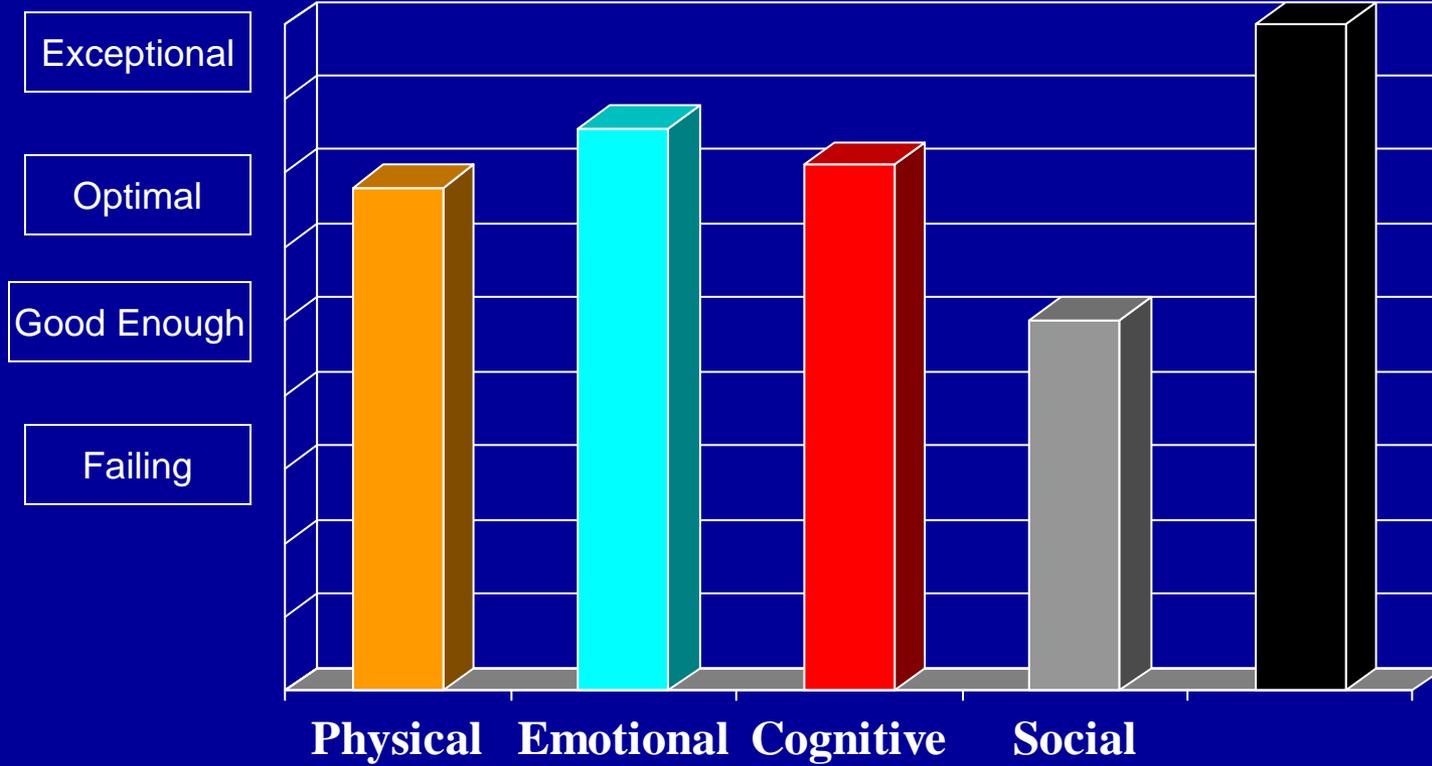
Health Trajectories of Normal Children



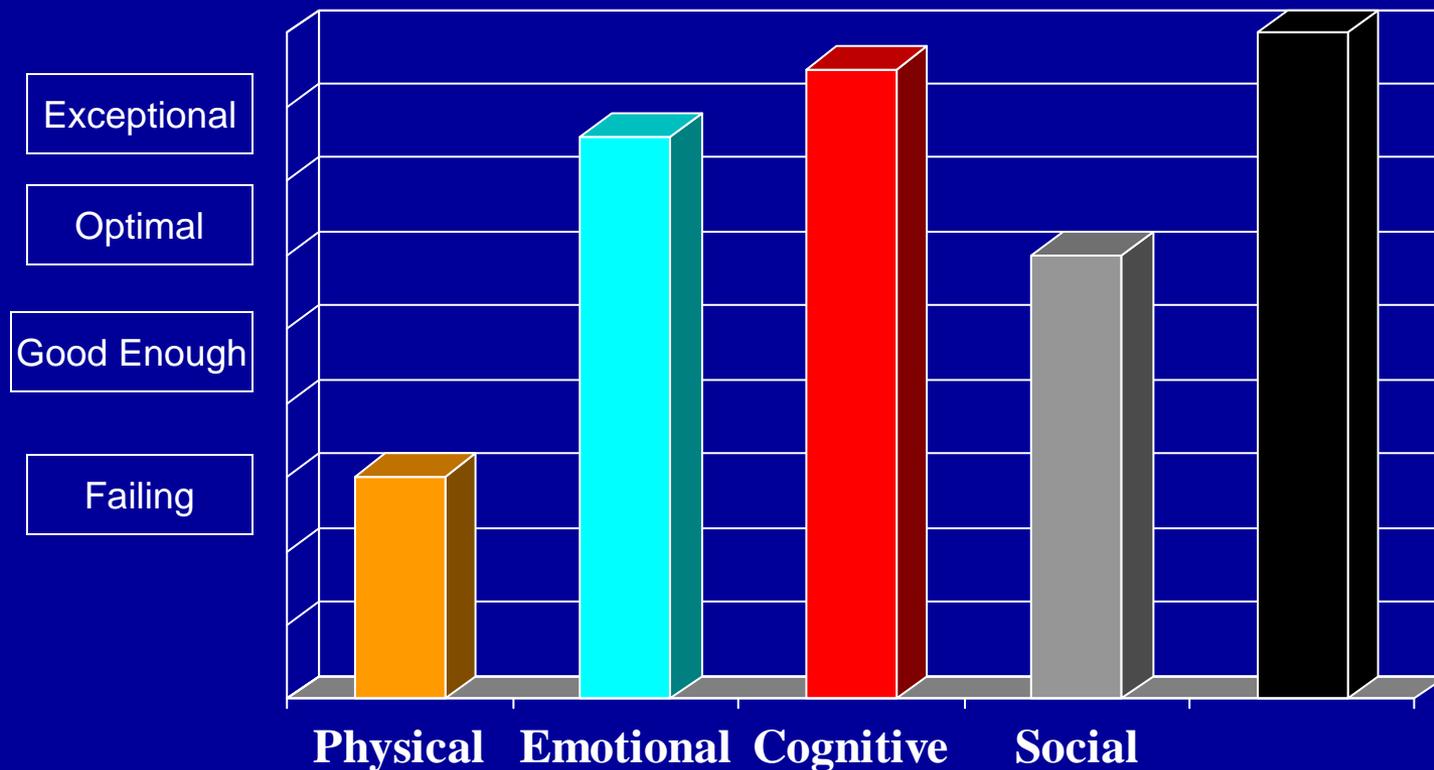
Health Trajectories of Children with Cerebral Palsy



Normal Development Outcomes Along Four Measurement Domains



Development outcomes for a child with cerebral palsy. High cognitive and emotional functioning are able to compensate for decreased physical functioning.



Development outcomes for a child with cerebral palsy and low compensatory outcomes in other domains.
Lack of protective factors reduces overall functioning.

