

D-score for measuring neurocognitive development 0-4  
years

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# Preface

This is an introductory booklet on the measurement of child development by means of the D-score. The D-score is a one-number summary that quantifies generic neurocognitive development for children with ages 0-4 years.

This is the *first* in a series of three booklets. The series consists of the following titles:

1. D-score for measuring development of children 0-4 years
2. D-score for international comparisons
3. D-score for creating better instruments

The development of this series is kindly supported by the Bill & Melinda Gates Foundation.



# Chapter 1

## Introduction

1.1 First 1000 days

1.2 Relevance of child development

1.3 Limitations of stunting

1.4 Measuring neurocognitive development





## Chapter 2

# Short history

2.1 Growth and development

2.2 Gesell maturation theory, Piaget stages, Kohlberg stages

2.3 One number for development

2.4 Current situation: Bayley, Griffiths, IQ, domains



## Chapter 3

# Comparisons

3.1 Types of comparisons needed

3.2 Problems of age-based measurement

3.3 What is a latent variable

3.4 Item response functions

3.5 Person response functions

3.6 Family of IRT models



## Chapter 4

# Rasch model

### 4.1 Rasch model

### 4.2 Perfect symmetry

### 4.3 Parameter separation

### 4.4 The model as ideal



## Chapter 5

# Items

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5.2 Empirical and fitted item response curves

5.3 Item fit

5.4 Item information at a given ability

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## Chapter 6

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