# Supplementary Materials

**Table S1**

*Overview of all variables in the original clinical database and rationale why variables were included in the final dataset.*

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| --- | --- | --- | --- |
| Variable | More information | Included?  | Reason  |
| 1. Client ID
 | Unique Client Identification Code | No  | Not relevant and privacy sensitive information. |
| 1. Cycle
 | Number of times a client received a cycle of care at the clinic | No  | Administrative variable. Not relevant for the network analysis. |
| 1. DBC start date
 | DBC = diagnosis-treatment combination. Start date of insured health care trajectory. | No  | Administrative variable. Not relevant for the network analysis. |
| 1. DBC end date
 | End date of insured health care trajectory. | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Year start DBC
 | Year in which insured health care started. | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Start date remediation
 | Start treatment | No | Used to calculate the duration of the intervention period but not included in the network analysis.  |
| 1. Outtake decision
 | Diagnostic code indicating whether or not treatment would be covered by the Dutch basic Health Care Act (and under which type of arrangement). | No  | Not relevant for the network analysis. |
| 1. Outtake date
 | Date on which the outtake of the diagnostic assessment took place. | No  | Not relevant for the network analysis. |
| 1. Date diagnostic assessment
 | Date of the first test session of the diagnostic assessment. | No  | Not relevant for the network analysis. |
| 1. End date diagnostic assessment
 | Date of the last test session of the diagnostic assessment. | No  | Not relevant for the network analysis. |
| 1. Remediation status
 | Categorical variable that indicated whether client already received remediation, was on a waiting list to receive remediation, stopped with remediation etc. | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Acceptance for diagnostic assessment status
 | Categorical variable that indicated whether client was accepted for diagnostic assessment | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Date acceptance for diagnostic assessment
 | Date on which client was accepted for diagnostic assessment. | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Reason acceptance for diagnostic assessment
 | Reasons for accepting (or not accepting) client for diagnostic assessment. | No | Administrative variable. Not relevant for the network analysis. |
| 1. Location diagnostic assessment
 | At which location diagnostic assessment was conducted, as data was collected at a nationwide, clinical center.  | No  | Clients’ postal code was used as a sociodemographic variable in the network analysis. As provision of care was strictly protocolized over locations, we did not expect this information to provide extra information.  |
| 1. Year registration client
 | Year at which the client was registered at the clinic. | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Insurance mother company
 | Name of insurance mother company  | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Insurance name
 | Name of insurance  | No | Not relevant for the network analysis. |
| 1. UZOVI-code insurance
 | Unique healthcare insurer identification | No  | Administrative variable related to insurance company. Not relevant for the network analysis. |
| 1. Age
 | Age in months | Yes  | To control for differences in scores as a result of age. |
| 1. School name
 | Name of school | No | Privacy sensitive information and not relevant for the network analysis. |
| 1. ZIP school
 | Postal code of school | No | Clients’ postal code was used as a sociodemographic variable in the network analysis. As children in the Netherlands commonly go to a school in their neighborhood, we did not expect this variable to provide extra information above that of clients’ postal code.  |
| 1. School grade
 |  | No | We did not expect this variable to provide extra information beyond that of clients’ age. |
| 1. School type
 | Indicated the type of school: elementary, secondary, higher education  | Yes | To select only children of elementary school to control for differences in test materials. |
| 1. Hometown
 | Town where the child lived | No | Privacy sensitive information. |
| 1. Home ZIP
 | Postal code home address | No  | This variable was used to calculate the mean disposable income per household as a proxy of socio-economic status but home ZIP itself was immediately removed after calculation as this is privacy sensitive information. |
| 1. Gender
 |  | Yes | To examine gender differences.  |
| 1. Name child
 |  | No  | Privacy sensitive information and not relevant for the network analysis. |
| 1. Birth date
 |  | No  | Used to calculate a variable age based on the birth date and the date of diagnostic assessment. Birth date itself was removed from our dataset as this is privacy sensitive information.  |
| 1. BSN number
 | Citizen service number | No  | Administrative variable and privacy sensitive. Not relevant for the network analysis. |
| 1. Type of care
 | Categorical variable that indicated whether care was reimbursed or private | Yes  | To include only children that received reimbursed care in the sample. |
| 1. Reading problems elementary school (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | We did not expect this variable to provide extra information above the reading test scores we included in the network analysis (see variable 146).  |
| 1. Spelling problems elementary school (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | We did not expect this variable to provide extra information above the spelling test scores we included in the network analysis. |
| 1. Multiplication tables problems elementary school (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | As the focus was on dyslexia (i.e. reading and spelling problems), we did not include qualitative information on math skills. |
| 1. Math problems elementary school (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | As the focus was on dyslexia (i.e. reading and spelling problems), we did not include qualitative information on math skills. |
| 1. Extra attention reading elementary school (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | This variable was not informative as all children in the study received extra support at school prior to referral.  |
| 1. Remedial teaching reading (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | This variable was not informative as all children in the study received extra support at school prior to referral. |
| 1. Extra attention spelling elementary school (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | This variable was not informative as all children in the study received extra support at school prior to referral. |
| 1. Remedial teaching spelling (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | This variable was not informative as all children in the study received extra support at school prior to referral. |
| 1. Extra attention math elementary school (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | As the focus was on dyslexia (i.e. reading and spelling problems), we did not include information related to math.  |
| 1. Remedial teaching math (yes/no)
 | Qualitative information on school history of the child, provided by the parents. | No | As the focus was on dyslexia (i.e. reading and spelling problems), we did not include information related to math. |
| 1. School change elementary school (yes/no)
 |  | No | Used by the clinician to judge whether the child received adequate reading instruction. If not, the child was not accepted for clinical care (based on definition and health care protocol) and therefore this variable was not informative for this study. |
| 1. Number of school changes
 |  | No | Used by the clinician to judge whether the child received adequate reading instruction. If not, the child was not accepted for clinical care (based on definition and health care protocol) and therefore this variable was not informative for this study. |
| 1. Absenteeism elementary school (yes/no)
 |  | No | Used by the clinician to judge whether the child received adequate reading instruction. If not, the child was not accepted for clinical care (based on definition and health care protocol) and therefore this variable was not informative for this study. |
| 1. Absenteeism reason
 | Reason of absenteeism | No | Used by the clinician to judge whether the child received adequate reading instruction. If not, the child was not accepted for clinical care (based on definition and health care protocol) and therefore this variable was not informative for this study. |
| 1. Start Dutch education (grade)
 | Indicated in which grade the child started Dutch education. | No  | Used by the clinician to judge whether the child received adequate reading instruction. If not, the child was not accepted for clinical care (based on definition and health care protocol) and therefore this variable was not informative for this study. |
| 1. Grade retention (yes/no)
 | Indicated whether the child had to retake a grade or not. | Yes | To examine relation between grade retention and reading variables.  |
| 1. Grade retention (in which grade)
 | In which grade the child had to retake a grade. | Yes | Children in kindergarten often have to retake a grade when they are not ready for elementary school, therefore only children that had to retake a grade from Grade 3 onwards received a score of 1 on this binary variable. |
| 1. Language(s) spoken at home
 |  | Yes | Included as a binary measure for multilingualism (with only one language = 0, more than one language = 1) |
| 1. Date anamnesis
 | Date of the intake (anamnesis) | No  | Administrative variable. Not relevant for the network analysis. |
| 1. Forgetfulness (yes/no)
 | Qualitative information provided by the parents during anamnesis.  | No  | We did not expect this binary variable of parents’ judgement to provide additional information above the scores of memory tests we included in our analysis.  |
| 1. Attentional problems (yes/no)
 | Qualitative information provided by the parents during anamnesis. | Yes  | Although this was a binary variable based on parents’ overall judgement, we nonetheless decided to include it in the analysis given high co-occurrence ADHD and dyslexia.  |
| 1. Stomach pain (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No  | No indications present in the relevant literature to expect an association between stomach pain and reading disabilities. |
| 1. Headache (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between headaches and reading disabilities. |
| 1. Stuttering (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between stuttering and reading disabilities. |
| 1. Anxiety (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | As this was a binary variable based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis. |
| 1. Insomnia (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | As this was a binary variable based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis. |
| 1. Aggressive behavior (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | As this was a binary variable based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis. |
| 1. Motivational problems at school (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | As this was a binary variable based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis. |
| 1. Social behavior problems (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | As this was a binary variable based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis. |
| 1. Perinatal problems (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | As this was a binary variable based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis. |
| 1. Gestational age
 |  | Yes | Measure of prematurity, as preterm delivery influences reading development. |
| 1. Neonatal incubation (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between neonatal incubation and reading disabilities. |
| 1. Duration neonatal incubation
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between neonatal incubation and reading disabilities. |
| 1. Birth weight
 |  | Yes | Measure of prematurity as preterm delivery influences reading development. |
| 1. Hospitalization during first year (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between hospitalization during first year and reading disabilities. |
| 1. Duration hospitalization
 |  | No | No indications present in the relevant literature to expect an association between hospitalization during first year and reading disabilities. |
| 1. Sitting and walking (early/average/late)
 | Qualitative information provided by the parents during anamnesis. | No | As this variable was based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis.  |
| 1. Talking (early/average/late)
 | Qualitative information provided by the parents during anamnesis. | No | As this variable was based on parents’ overall judgement, we decided that this was too general and unreliable to be included in the analysis. |
| 1. Family risk dyslexia (yes/no)
 |  | Yes | Family risk important factor in predicting dyslexia. |
| 1. Strabismus (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Depth vision problems (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Amblyopia (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Amblyopia year detection
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Amblyopia correction (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Blurry vision (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Blurry vision year detection
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Blurry vision correction (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Other vision problems (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | We did not expect this variable to provide extra information above the cognitive measure for visual perception we included in the network (see variable 158). Furthermore, children with a profound visual handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Hearing loss (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between hearing problems and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition.  |
| 1. Hearing loss year detection
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between hearing problems and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition. |
| 1. Hearing loss correction (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between hearing problems and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition. |
| 1. Middle ear infection (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between middle ear infections and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition. |
| 1. Middle ear infection year detection
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between middle ear infections and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition. |
| 1. Ear tubes (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between having ear tubes and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition. |
| 1. Ear tubes year
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between having ear tubes and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition. |
| 1. Other hearing problems (yes/no)
 | Qualitative information provided by the parents during anamnesis. | No | No indications present in the relevant literature to expect an association between hearing problems and reading disabilities. Furthermore, children with a profound hearing handicap will not receive the dyslexia diagnosis according to the DSM-5 definition. |
| 1. School dyslexia judgment (yes/no)
 |  | No | Administrative variable related to the reasons for referral by the school of the child. |
| 1. Student tracking system (Dutch: LVS) recent reading test
 | System to assess reading progress in elementary school.  | No | Variables 89-124 refer to information concerning support at Tier 2 and 3 provided by schools when referring a child to the clinic. As schools use different procedures and instruments, these data were neither provided by schools, nor entered into the database, in a standardized manner. Therefore, these variables were not included in the analysis. |
| 1. Date student tracking system recent reading test
 |  | No | See reason variable 89.  |
| 1. Student tracking system recent spelling test
 | System to assess spelling progress in elementary school. | No | See reason variable 89.  |
| 1. Date student tracking system recent spelling test
 |  | No | See reason variable 89.  |
| 1. Student tracking system math test
 | System to assess math progress in elementary school. | No | See reason variable 89.  |
| 1. Date student tracking system math test
 |  | No | See reason variable 89.  |
| 1. Pretest reading
 | Measures reading level prior to remedial teaching period 1. | No | See reason variable 89.  |
| 1. Date pretest reading
 |  | No | See reason variable 89.  |
| 1. Pretest spelling
 | Measures spelling level prior to remedial teaching period 1. | No | See reason variable 89.  |
| 1. Date pretest spelling
 |  | No | See reason variable 89.  |
| 1. Interimtest reading
 | Measures reading level between remedial teaching period 1 and 2. | No | See reason variable 89.  |
| 1. Date interimtest reading
 |  | No | See reason variable 89.  |
| 1. Interimtest spelling
 | Measures spelling level between remedial teaching period 1 and 2. | No | See reason variable 89.  |
| 1. Date interimtest spelling
 |  | No | See reason variable 89.  |
| 1. Posttest reading
 | Measures reading level after remedial teaching period 2.  | No | See reason variable 89.  |
| 1. Date posttest reading
 |  | No | See reason variable 89.  |
| 1. Posttest spelling
 | Measures spelling level after remedial teaching period 2. | No | See reason variable 89.  |
| 1. Date posttest spelling
 |  | No  | See reason variable 89.  |
| 1. Remedial teaching period 1 (reading/spelling/both)
 | Categorical variable that indicates for which domain remedial teaching was needed. | No | See reason variable 89.  |
| 1. Grade at which remedial teaching period 1 started
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 1 start and end date
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 2 (reading/spelling/both)
 |  | No | See reason variable 89.  |
| 1. Grade at which remedial teaching period 2 started
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 2 start and end date
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 3 (reading/spelling/both)
 |  | No | See reason variable 89.  |
| 1. Grade at which remedial teaching period 3 started
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 3 start and end date
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 4 (reading/spelling/both)
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 4 starting at grade
 |  | No | See reason variable 89.  |
| 1. Remedial teaching period 4 start and end date
 |  | No | See reason variable 89.  |
| 1. Remedial teaching Tier 3 (reading/spelling/both)
 | School-based remedial teaching which intensively addressed specific needs of the child regarding reading/spelling. | No | See reason variable 89.  |
| 1. Remedial teaching Tier 3 duration in weeks
 |  | No | See reason variable 89.  |
| 1. Remedial teaching Tier 3 minutes/week
 |  | No | See reason variable 89.  |
| 1. Remedial teaching Tier 3 (individual/group)
 | Indicated whether children received remedial teaching individually or in group. | No | See reason variable 89.  |
| 1. Profession remedial teacher
 |  | No | See reason variable 89.  |
| 1. Remedial teaching Tier 3 method
 | Indicated which method was used for remedial teaching. | No | See reason variable 89.  |
| 1. IWAL reading text
 | Measured text reading skill (accuracy and speed). | No | This task was only administered to a subgroup of our sample (Grade 4 and older).  |
| 1. AVI-2009
 | Old version of a reading test measuring the child’s text reading level. | No | This task was only administered to a subgroup of our sample. |
| 1. AVI-new
 | New version of a reading test measuring the child’s text reading level. | No | This task was only administered to a subgroup of our sample. |
| 1. BRUS (One-minute test)
 | Measured word reading, in terms of the number of words read correctly within one minute. | Yes | Measure of reading fluency used to assess intervention progress as this variable had more records than other reading fluency measures.  |
| 1. IWAL-Brus tach
 | Computerized version of one-minute test in which words are shortly presented on the computer screen (10ms, 100ms, 300ms or 500ms).  | No  | This is an experimental task that was not systematically administered for the majority of clients and correlated strongly with the included word reading tasks. |
| 1. IWAL Dictation (words)
 | Children needed to write down 40 one-syllable words which were orally presented in short sentences to assess spelling skills. | No | The task was not systematically administered to children in Grade 4 and older as it measured the basics of Dutch spelling that are normally mastered in Grade 1 and 2.  |
| 1. IWAL Dictation (sentences)
 | Children needed to write down 14 orally presented sentences to assess spelling skills.  | No | The task was not systematically administered to children in Grade 4 and older as it measured the basics of Dutch spelling that are normally mastered in Grade 1 and 2. |
| 1. IWAL Standard Dictation
 | Children needed to write down 19 orally presented sentences that contained familiar words to all elementary school children | No | This test was only administered to a subgroup of our sample. |
| 1. IWAL picture dictation
 | Spelling task | No | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered. |
| 1. IWAL vocabulary
 | Receptive Vocabulary task | No | We included the Peabody Picture Vocabulary Test as measure of receptive vocabulary, as the IWAL vocabulary task was only administered to a subgroup of our sample. |
| 1. PI dictation
 | Spelling task | No | This task was not part of the standard diagnostic protocol, and therefore only incidentally administered. |
| 1. IWAL auditory analysis
 | Participants had to say monosyllabic words phone by phone; phoneme awareness task. | No | We included 3DM Phoneme Deletion as an index for phoneme awareness as this task was not part of the standard diagnostic protocol and therefore only incidentally administered. |
| 1. IWAL auditory interference test
 | Two groups of monosyllabic words were orally presented to produce inter-list interference. After presentation of the two groups, participants needed to repeat the first group and after that the second or first the second group and after that the first. | No | This task was not part of the standard diagnostic protocol, and therefore only incidentally administered (replaced as part of the standard protocol by 3DM test battery in 2009). |
| 1. Leidse Diagnostische Test (LDT) [Knox Cube Test]
 | Children needed to imitate a tapping pattern on four cubes showed by the test administrator.  |  | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered. |
| 1. LDT Sentence Imitation
 | Children had to listen to a story and had to reproduce the story sentences one by one immediately after hearing them. | No  | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered. |
| 1. LDT Story Questions
 | Children had to answer questions based on the story that has been told in the Sentence Imitation subtest of the LDT. | No | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (only for ages 4-8 and therefore only 20 records). |
| 1. CB&WL Rapid automatized naming
 | Rapid automatized naming of letters, digits, objects, and colors. | No | 3DM version of rapid automatized naming was used because this version contained more missing values. |
| 1. Taaltests voor Kinderen (TVK) vocabulary
 | Children needed to name 60 pictures. | No  | This test was only administered to younger children. |
| 1. TVK Word Closure
 | Children needed to say a word in which one or more phonemes were deleted and replaced by a short silence. | No  | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (replaced as part of the standard protocol by 3DM test battery in 2009). |
| 1. TVK Word forms Production
 | Each item comprised 2 sentences, of which the second sentence was not complete. Children needed to complete the second sentence with a word based on the first sentence (i.e. past participle form, diminutive or comparative). Measured word morphology. | No | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered. |
| 1. Peabody receptive vocabulary
 |  | Yes | Measure of receptive vocabulary. |
| 1. 3DM reading test (high, low and pseudowords)
 |  | Yes | Measure of word reading accuracy and fluency for high frequent, low frequent and pseudowords. |
| 1. 3DM spelling test
 |  | Yes | Measures accuracy and speed of spelling knowledge. |
| 1. 3DM letter-speech sound identification
 |  | Yes | Measures letter-speech sound associations, which is considered important in reading acquisition. |
| 1. 3DM phoneme deletion
 |  | Yes | Proxy of phoneme awareness. |
| 1. 3DM rapid naming (letters and digits)
 |   | Yes  | Rapid naming test with most records. |
| 1. ADIT-C
 | Dutch speech discrimination test for children (Auditieve Discriminatie Test). Tests peripheral auditory perception.  | No | No indications present in the relevant literature to expect an association between peripheral auditory perception and reading disabilities. |
| 1. HADIT-C
 | Same as ADIT-C but only half of the trials. | No | No indications present in the relevant literature to expect an association between peripheral auditory perception and reading disabilities. |
| 1. ASI identical figures
 | Visual perception test | No | This task was only administered to adults. |
| 1. HSI identical figures
 | Visual perception test | No | The task was only administered to children in secondary education. |
| 1. ASI silhouettes
 | Visual perception test | No | The task was only administered to adults. |
| 1. ASI picture memory
 | Visual memory test | No | The task was only administered to adults. |
| 1. HSI silhouettes
 | Visual perception test | No | The task was only administered to children in secondary education. |
| 1. GSO perception
 | Visual perception test | Yes  | As a measure of visual perception.  |
| 1. WISC-III
 | Intelligence test | Yes | Included as intelligence estimation as this was the only intelligence test that was administered to the full age range of our sample. |
| 1. WAIS
 | Intelligence test | No  | WISC-III was chosen as intelligence estimation (This test was only administered to older children). |
| 1. SSON
 | Intelligence test | No  | WISC-III was chosen as intelligence estimation. |
| 1. Intelligentieschatter
 | Intelligence estimation, based on four subtests of WISC-III. | No | WISC-III was chosen as intelligence estimation |
| 1. Revisie Amsterdamse Kinder Intelligentie Test (RAKIT)
 | Intelligence test | No  | WISC-III was chosen as intelligence estimation |
| 1. Groninger Intelligence Test
 | Intelligence test | No  | WISC-III was chosen as intelligence estimation (This test was only administered to older children).  |
| 1. Raven progressive matrices
 | Intelligence test | No  | WISC-III was chosen as intelligence estimation (Raven was only incidentally administered). |
| 1. Raven colored matrices
 | Intelligence test | No  | WISC-III was chosen as intelligence estimation(Raven was only incidentally administered). |
| 1. 12 WT
 | Dutch version of Rey’s Auditory Verbal Learning Test | No  | Less records than 15 WT, not possible to combine two tests due to different number of items. |
| 1. 15 WT
 | Dutch version of Rey’s Auditory Verbal Learning Test | Yes | Measure of short- and long-term verbal memory, had more records than 12 WT. |
| 1. REY visual design learning test
 | Children had to memorize 15 geometric stimulus cards in 5 successive trials.  | No | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (Only 17 records).  |
| 1. Wechsler Memory Scale visual memory reproduction
 | Visual memory test | No  | This task was only administered to older children (only 112 records). |
| 1. IWAL visual recognition
 | Visual memory test | No | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (only 19 records). |
| 1. IWAL finger agnosia
 | Test for finger agnosia | No  | No indications present in the relevant literature to expect an association between finger agnosia and reading disabilities. |
| 1. Zelf-Beoordelings-Vragenlijst voor kinderen (ZBV-K)
 | Dutch version of State-Trait-Anxiety Inventory for children (STAI-C) | No | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (only 352 records). |
| 1. Competentie Belevingsschaal voor kinderen (CBSK)
 | Self-perception profile for children, measured self-concept in children.  | No  | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (only 385 records). |
| 1. Schoolvragenlijst (SVL) [School Attitude Questionnaire]
 | Questionnaire that measured socio-emotional functioning and attitudes towards school. | No  | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (only 22 records). |
| 1. Prestatie Motivatie Test-Kinderen (PMT-K) [Achievement Motivation Test for Children]
 | Questionnaire that measured achievement motivation, negative and positive test anxiety, and social desirability  | No  | This test was not part of the standard diagnostic protocol, and therefore only incidentally administered (only 80 records). |



*Figure S1.* Generalnetworks depicting the relationship between variables in the framework of reading disabilities estimated with a tuning parameter γ = 0 (left panel) and γ = 0.25 (right panel).



*Figure S2.* Bootstrapped sampling distribution of edge weights of the general network. Values indicate proportion of estimates whose absolute values were larger than zero. Black horizontal lines represent the 5% and 95% quantiles of the sampling distribution. For example, the edge weight between VerSTMem and VerLTMem was larger than zero in 100% of the bootstrap samples and its 5% and 95% quantiles lie around .55 and .65. Note that edges are ordered by the arithmetic mean of the sampling distribution in decreasing order and most edges that had a mean of (close to) zero were excluded for sake of brevity.



*Figure S2.* Bootstrapped sampling distribution of edge weights of the general network (continued).



*Figure S3.* Bootstrapped sampling distribution of edge weights of the intervention network with in the first column pairwise effects and in the second column moderation effects. Values indicate proportion of estimates whose absolute values were larger than zero. Black horizontal lines represent the 5% and 95% quantiles of the sampling distribution. Moderation effects refer to the effect of the variable Intervention Progress on all pairwise interactions (e.g. moderation effect of Intervention progress on Visual Perception-Visuo-constructional abilities). Note that edges are ordered by the arithmetic mean of the sampling distribution in decreasing order and most edges that had a mean of (close to) zero were excluded for sake of brevity.

*Figure S3.* Bootstrapped sampling distribution of edge weights of the general network (continued).

*Figure S2.* Bootstrapped sampling distribution of edge weights of the general network (continued).