



3rd meeting
SLD

Plan

Dysgraphia

Dyscalculia

Dyspraxia

DYSGRAPHIA

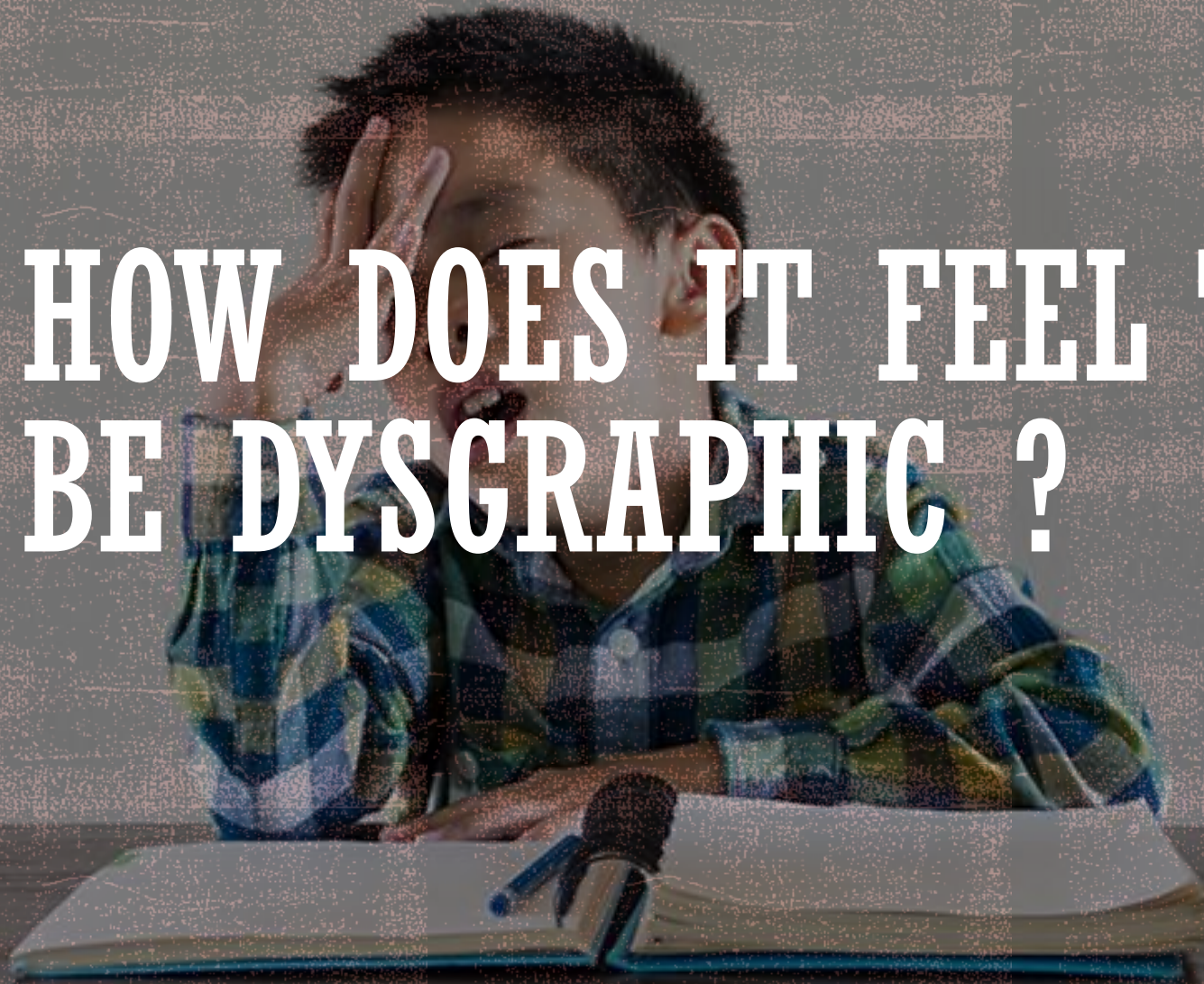


0. Azwei e Luftballons des
Abdarrötehs

4. Er spielt mit den
schönen Holzauto.
5. Stolz trägt er
ein Stofftier weg.

THIS IS A SAMPLE OF
MY PRE-HANDWRITING
I WILL LOOK AT IT
AGAIN. THE NEW I WILL SEE
HOW MY WRITING HAS
IMPROVED.

**HOW DOES IT FEEL TO
BE DYSGRAPHIC ?**



DYSGRAPHIA - DEFINITION

- *Dysgraphia is a condition that causes trouble with written expression. The term comes from the Greek words dys (“impaired”) and graphia (“making letter forms by hand”).*
- *It's very messy writing, that is often illegible and incomprehensible.*



WRITING - WHAT DOES IT MEAN.....?

Writing as a process of letter recording

Written language production – one of the four language skills (reading, writing, spelling, listening)

Written production of thoughts

- The function of writing becomes the representation and communication of thoughts

(singing, drawing or reading) is way of making and potential sharing the meaning – Writing as a process of



DYSGRAPHIA - SYMPTOMS



Visual-Spatial Difficulties

- Has trouble with shape-discrimination and letter spacing
- Has trouble organizing words on the page from left to right
- Writes letters that go in all directions, and letters and words that run together on the page

Fine Motor Difficulties

- Has trouble holding a pencil correctly, tracing, cutting food, tying shoes, doing puzzles, texting and keyboarding
- Is unable to use scissors well or to color inside the lines
- Holds his wrist, arm, body or paper in an awkward position when writing

Spelling Issues/Handwriting Issues/Grammar Issues

- Has a hard time understanding spelling rules
- Has trouble telling if a word is misspelled
- Doesn't know how to use punctuation

Organization of Written Language

Dyslexic dysgraphia

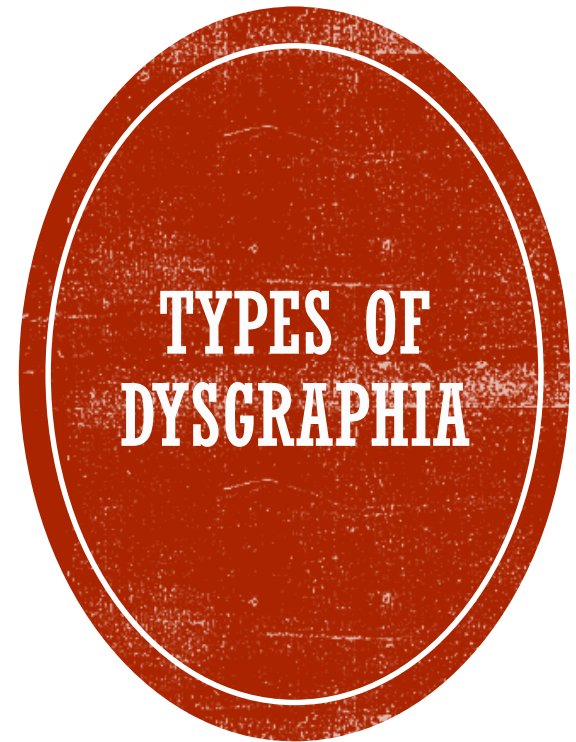
- Spontaneously **written work is illegible, copied work is fairly good, and spelling is bad**. Copied writing or drawings, may be clear. A Dyslexic Dysgraphic does not necessarily have dyslexia.

Motor dysgraphia

- Dysgraphia is due to deficient fine motor skills, poor dexterity, poor muscle tone, and/or unspecified motor clumsiness. Generally, **written work is poor to illegible, even if copied** by sight from another document. Letter formation may be acceptable in very short samples of writing, but this requires extreme effort and an unreasonable amount of time to accomplish, and cannot be sustained for a significant length of time. **Spelling skills are not impaired**.

Spatial dysgraphia

- Dysgraphia due to a defect in the understanding of space. Child has **illegible spontaneously written work, illegible copied work, but normal spelling**,
- Some children may have a combination of any two or all three of these. Symptoms in actuality may vary in presentation from what is listed here.



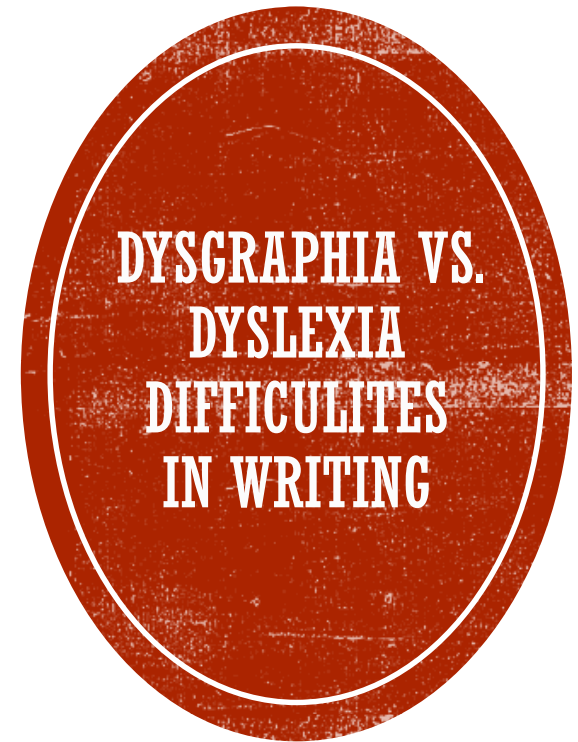
▪ **Dysgraphia**

- Child with dysgraphia knows how to write, but is unable to develop proper motor plan to create it, even if the letter, shape, the word is in front of them

Dyslexia

- Child with dyslexia is physically able to copy, but might have trouble writing due to difficulty in phonological awareness, spelling, memory deficits and less severe fine motor deficits

Dyslexia and Dysgraphia seems unrelated according to the researches!



DYSGRAPHIA IN THE DEVELOPMENT



- **Preschool children** may be hesitant to write and draw and say that they hate coloring.
- **School-age children** may have illegible handwriting that can be mix of cursive and print. They may have trouble writing on a line and may print letters that are uneven in size and height. Some children also may need to say words out loud when writing or have trouble putting their thoughts on paper.
- **Teenagers** may write in simple sentences. Their writing may have many more grammatical mistakes than the writing of other kids their age.

Von Dresner, Kara Sandor. "Criteria and Assessment of Dyslexia and Dysgraphia."
Cba-va.org. Chesapeake Bay Academy.



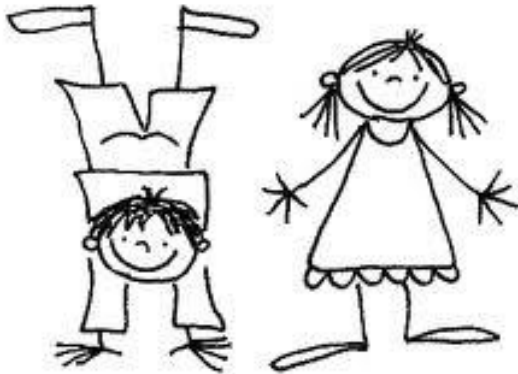
PREVALENCE ? ...

PREVALENCE

- Reynolds, USA 2007
 - Prevalence of dysgraphia is estimated at 5 – 20 % of all students having some type of writing deficit
- Döhla & Heim, USA - 2016
 - There are 7 – 15 % of school-age children exhibit some form of development writing deficit
- Chung, Patel & Nizami, USA- 2020
 - Between 10 % and 30 % of children experience difficulty in writing



INTERVENTION IN DYSGRAPHIA



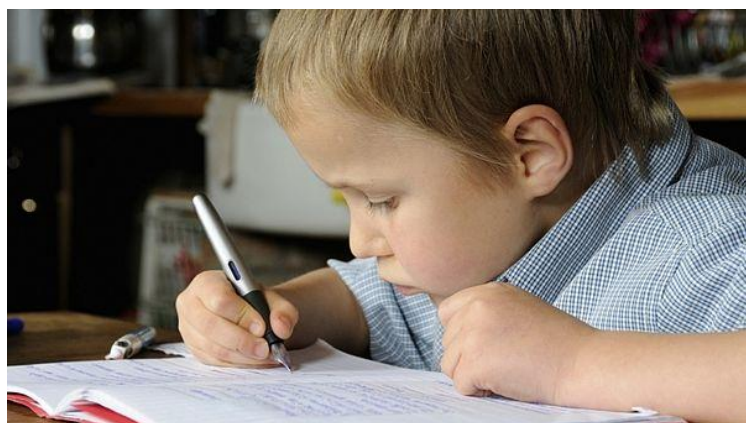
- Gross and Fine motor Skills
- Exercise for graphomotor exercise
- Letter shape – Letter size – Letter linking

- Stimulation depends on the:
 - Severity of motor deficits
 - Severity of the deficits in cognitive and perceptual functions (spatial orientation, memory, phonological awareness)
 - Cursive vs. print letters use





https://www.youtube.com/watch?v=r2tBH_XyeJc
Finger exercise



SPRÁVNÉ DRŽENÍ TUŽKY - PASTELKY - PERA

SPRÁVNÉ DRŽENÍ TUŽKY
„ŠPETKOVÝM ÚCHOPEM“



NESPRÁVNÉ DRŽENÍ TUŽKY - PASTELKY-PERA



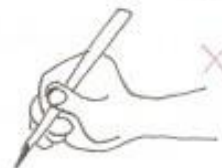
KŘEČOVITÉ DRŽENÍ TUŽKY



ŠPETKOVÝ ÚCHOP S PALCEM,
KTERÝ PŘESAHUJE PŘES UKAZOVÁČEK



SMYČCOVÝ ÚCHOP



PĚSTIČKOVÝ ÚCHOP



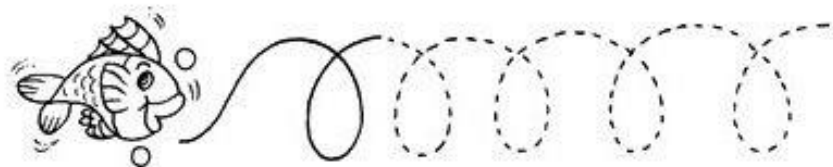
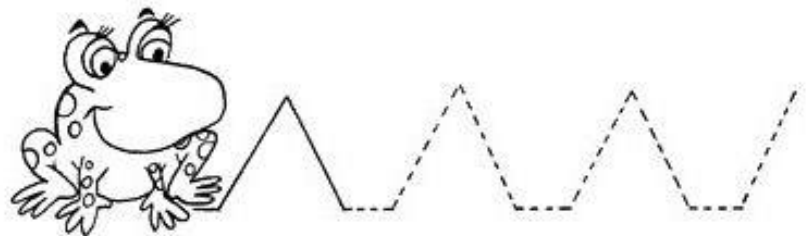
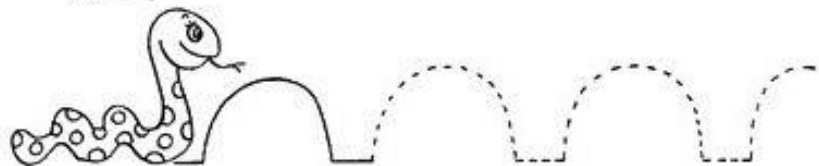
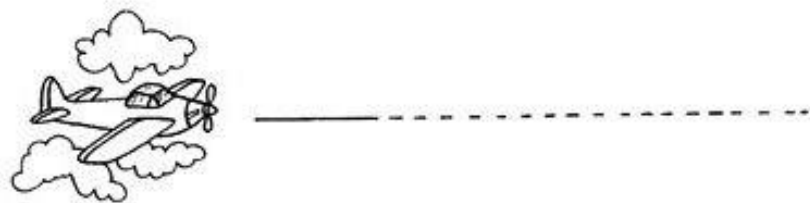
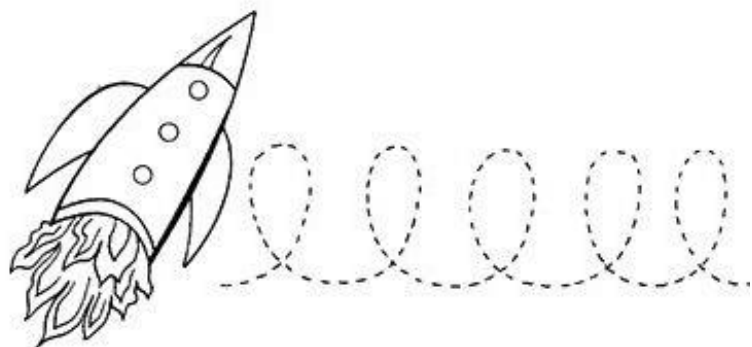
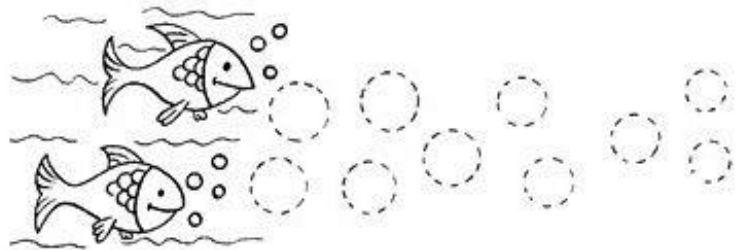
VAREČKOVÝ ÚCHOP



HRSTIČKOVÝ ÚCHOP



PROTAŽENÁ HRSTIČKA



overcame his love for food and was always miserable when he couldn't get enough. As years passed, Niley married and raised a family, but poverty dogged his footsteps, on not a day with had enough to eat. He always slept half hungry. He was once invited to the wedding of a rich
lence, if you are able to write fast and legibly your thinking process does not get disturbed. This will also ensure you are able to complete all the questions and obviously score higher in your exams. Remember you always write for someone to read

PRINTING VS. CURSIVE HANDWRITING



Norwegian alphabet

Aa ah <i>Aa</i>	Bb beh <i>Bb</i>	Cc seh <i>Cc</i>	Dd deh <i>Dd</i>	Ee eh <i>Ee</i>	Ff eff <i>Ff</i>	Gg geh <i>Gg</i>	Hh haw <i>Hh</i>	Ii ee <i>Ii</i>	Jj yod <i>Jj</i>
Kk kaw <i>Kk</i>	Ll ell <i>Ll</i>	Mm emm <i>Mm</i>	Nn enn <i>Nn</i>	Oo ooo <i>Oo</i>	Pp peh <i>Pp</i>	Qq koo <i>Qq</i>	Rr er <i>Rr</i>	Ss es <i>Ss</i>	Tt teh <i>Tt</i>
Uu oo <i>Uu</i>	Vv veh <i>Vv</i>	Ww dobbelveh <i>Ww</i>	Xx eks <i>Xx</i>	Yy ly <i>Yy</i>	Zz sett <i>Zz</i>	Ææ a <i>Ææ</i>	Øø uh <i>Øø</i>	Åå awe <i>Åå</i>	



Αα

Alpha
al-fah

Ββ

Beta
bay-tah

Γγ

Gamma
gam-mah

Δδ

Delta
del-tah

Εε

Epsilon
ep-si-lon

Ζζ

Zeta
zay-tah

Ηη

Eta
ay-tah

Θθ

Theta
thay-tah

Ιι

Iota
eye-o-tah

Κκ

Kappa
cap-ah

Λλ

Lambda
lamb-dah

Μμ

Mu
mew

Νν

Nu
new

Ξξ

Xi
zz-eye

Οο

Omicron
om-e-cron

Ππ

Pi
pie

Ρρ

Rho
roe

Σσς

Sigma
sig-mah

Ττ

Tau
taw

Υυ

Upsilon
oop-si-lon

Φφ

Phi
fie

Χχ

Chi
k-eye

Ψψ

Psi
sigh

Ωω

Omega
o-may-gah



THE SPANISH ALPHABET



A

a

ah

B

be

beh

C

ce

seh

CH

che

ch eh

D

de

deh

E

e

eh

F

efe

EH-feh

G

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heh

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AH-cheh

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EHR-Reh

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EH-seh

T

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teh



U

u

oo

V

ve

beh

W

doble ve

DOH-bleh beh

X

equis

EH-kees

Y

igriega

ee-gree-EH-gah

Z

zeta

SEH-tah



SHOOT

SIT

SPELL

Write the following in past simple.

1. Tom goes to school.

2. Jim drives a car.

3. Bob doesn't like cats.

4. Dave throws a ball.

5. I don't feel well.

Handwritten notes:
SIT
SPEL
SIT
SPEL

Handwritten student work:
Tom went to school.
Jim drove a car.
Bob didn't like cats.
Dave threw a ball.
I don't feel well.



HOW CAN WE HELP A CHILD WITH DYSGRAPHIA IN THE CLASS?

CHILD WITH DYSGRAPHIA IN THE CLASS



- Inappropriate practices
 - Completing written tasks during the break and at home
 - Task rewriting – inefficient, often of poorer quality
- Extra time subsidy
- Compensation
 - Writing in block letters – eliminating the stress of connecting letters
 - Typing on a computer combined with writing short tasks by hand
- Provide student with copied materials for the lessons
- The pupil should use the time in which others write, for example, to draw sketches in a workbook, dealing with additional questions to text, etc.

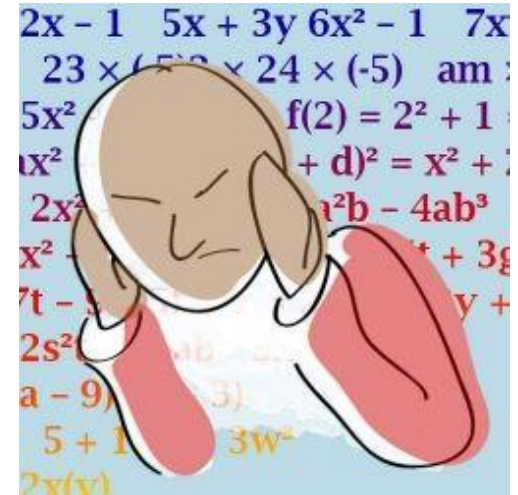


DYSCALCULIA



DYSCALCULIA - DEFINITION

- *Developmental Dyscalculia (DD) is a specific learning disorder that is characterised by impairments in learning basic arithmetic facts, processing numerical magnitude and performing accurate and fluent calculations.*
- 3–7% of all children, adolescents, and adults suffer from dyscalculia
- High comorbidity with
 - Dyslexia - 30–40%
 - ADHD - 10–20%
 - Anxiety, School phobia – 20 %

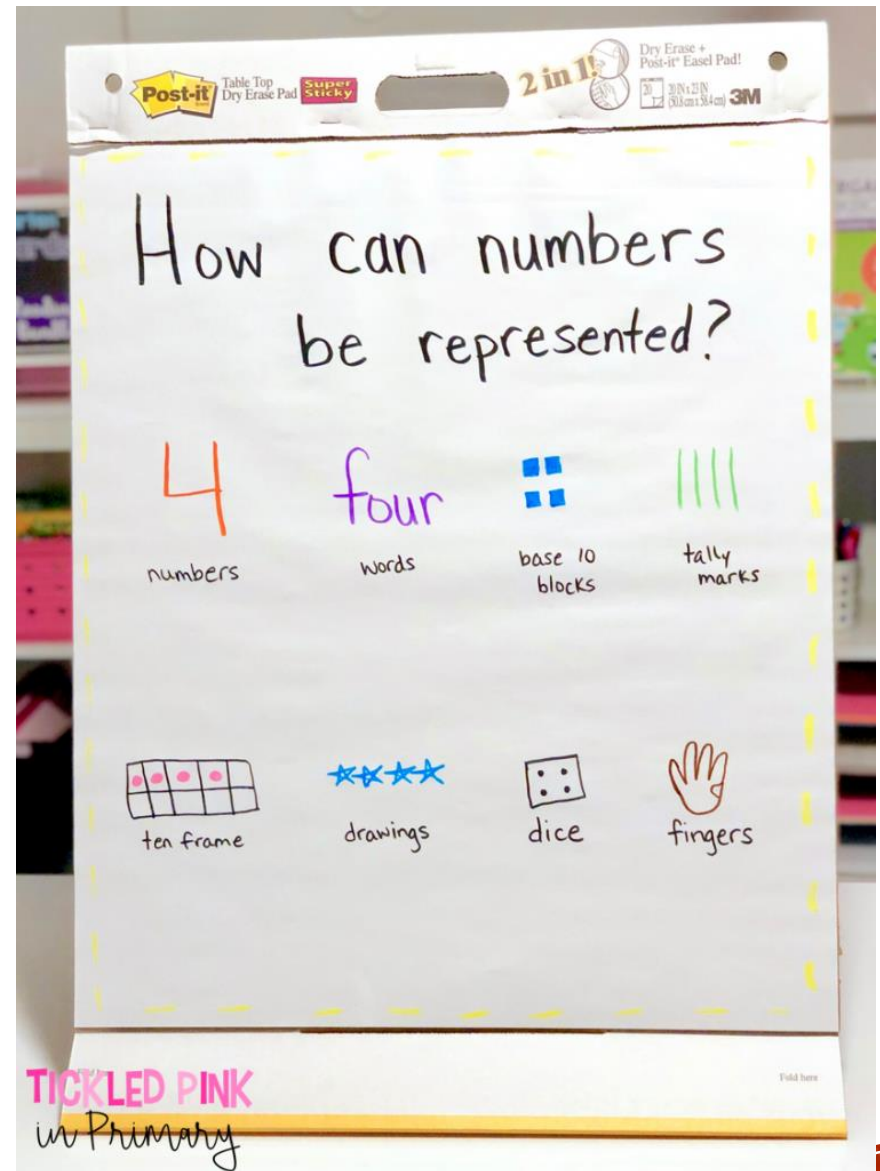


British Dyslexia
Association



NUMBER SENSE

- Child's fluidity and flexibility with numbers
- It helps children understand what numbers mean, improving their performance of mental mathematics, and giving them the tools to look at maths in the outside world and make comparisons



DYSCALCULIA - SYMPTOMS



- **1. Delay in counting.** 5 to 7 year-old dyscalculic children show less understanding of basic counting principles than their peers (e.g. that it doesn't matter which order objects are counted in).
- **2. Delay in using counting strategies** for addition. Dyscalculic children tend to keep using inefficient strategies for calculating addition facts much longer than their peers.
- **3. Difficulties in memorizing arithmetic facts.** Dyscalculic children have great difficulty in memorizing simple addition, subtraction and multiplication facts (eg. $5 + 4 = 9$), and this difficulty persists up to at least the age of thirteen.




DYSCALCULIA TYPES

DYSCALCULIA.ORG.USA



- **Practognostic** dyscalculia
 - These children are able to understand mathematical concepts but have trouble listing, comparing, and manipulating mathematical equations.
- **Verbal** dyscalculia
 - Difficulty naming and understanding the mathematical concepts presented verbally. Children are able to read or write numbers, but have a hard time recognizing them when presented verbally.
- **Lexical** dyscalculia
 - Trouble reading and understanding mathematical symbols and numbers, as well as mathematical expressions or equations.
- **Graphical** dyscalculia - Difficulty writing mathematical symbols; Difficulties in geometry
- **Ideognostical** dyscalculia
 - Difficulty carrying out mental operations without using numbers to answer math problems and understand mathematical concepts.
- **Operational** dyscalculia
 - This type of dyscalculia presents itself with a difficulty to complete written or spoken mathematical operations or calculations.





MATH DIFFICULTIES — PRIMARY SCHOOL (BLAŽKOVÁ, 2009)

- Pre-numerical skills
- Propaedeutic exercises to create the term number
- Numbers as category
- General mathematical operations
- Verbal tasks
- Geometry
- Unit conversions
- Estimation of results
- Mathematics in everyday life – financial literacy, spatial orientation





Želvy a kostky
Přiraď ke každé kostce správné číslo.

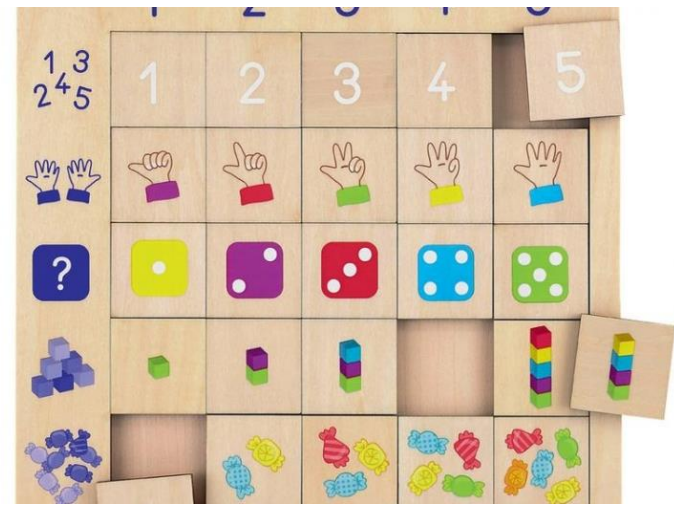
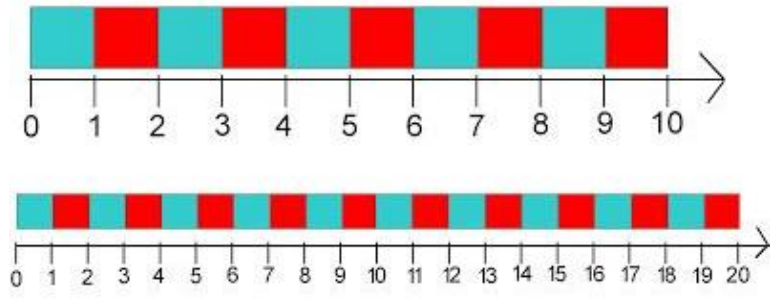




UNDERSTANDING NUMBERS AS A CATEGORY

- Handling of objects with verbalization – the child takes a hand and counts
- Orientation on the numerical axis (show number on axis, show number before/after,...)
- Comparing numbers – larger, smaller, same
- Sort cards by Size – 42, 24, 204, 4002, 422
- Write numbers using table numbers
- Reading numerals ascending and descending, dithering numbers
- Graphical representation of numbers in a grid of 10×10 squares (thousands, hundreds, tens, units)





NUMBER AXIS




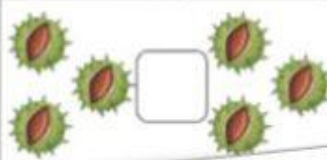




COMPARE 1 - 10



AUTOR: MGR. EVA HUFOVÁ
©POROZUMÍM AUTISMU 2017

Upokojtej obrázky a napiš do okénka správný znak

JMÉNU:

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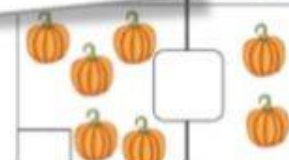

© Porozumím autismu 2017



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	<input type="checkbox"/>		<input type="checkbox"/>

Upokojtej obrázky a napiš do okénka správný znak

JMÉNU:

	<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>



WRITE NUMBERS INTO THE CHART

	DT	T	H	D	U
9 651		9	6	5	1
3 284		3	2	8	4
7 497		7	4	9	7
6 848		6	8	4	8
2 369		2	3	6	9
10 000	1	0	0	0	0



GENERAL MATH OPERATIONS



addition
add
plus
more
and
total
increase
sum
together



subtraction
subtract
minus
take away
decrease
take from
reduce
fewer

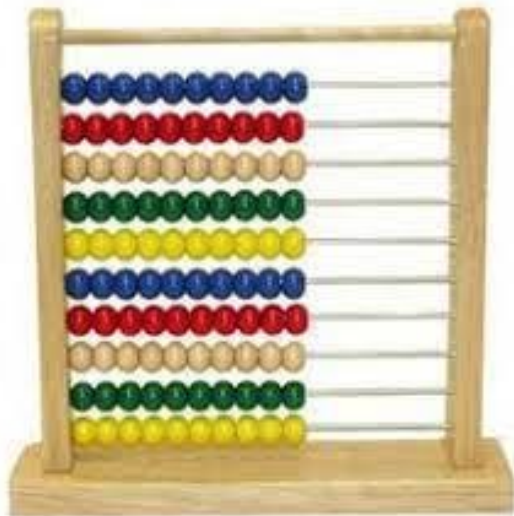


multiplication
multiply
product
times
lots of
multiplied by
times table
groups of



division
share
group
divide
divide into
divided by
divisible by
share equally





Counting frame



Transition over 10 - Add to 9 and find out the result

$$9 + \begin{matrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ 1+0 & 1+1 & 1+2 & 1+3 & 1+4 & 1+5 & 1+6 & 1+7 & 1+8 & 1+9 \end{matrix}$$

●●●●●● ●●●●○	$9+1$	$9 + 1 = 10$
●●●●●● ●●●●○ ○	$9+1+1$	$9 + 2 = 11$
●●●●●● ●●●●○ ○○	$9+1+2$	$9 + 3 = 12$
●●●●●● ●●●●○ ○○○	$9+1+3$	$9 + 4 = 13$
●●●●●● ●●●●○ ○○○○	$9+1+4$	$9 + 5 = 14$
●●●●●● ●●●●○ ○○○○○	$9+1+5$	$9 + 6 =$
●●●●●● ●●●●○ ○○○○○ ○	$9+1+6$	$9 + 7 =$
●●●●●● ●●●●○ ○○○○○ ○○	$9+1+7$	$9 + 8 =$
●●●●●● ●●●●○ ○○○○○ ○○○	$9+1+8$	$9 + 9 =$
●●●●●● ●●●●○ ○○○○○ ○○○○	$9+1+9$	$9 + 10 =$

Piš výsledky:





- ① obsah karty
- ② stupeň náročnosti
přední strana: ● lehčí
zadní strana: ● náročnější
- ③ symbol jednotlivých druhů úkolů
- ④ barva čísel ve sloupci odpovídá barvě kapsy

Kapsy

zelená
výpočet součtu
nebo rozdílu

červená
výpočet druhého
sčítance nebo
množitele

modrá
výpočet prvního
sčítance nebo
množitele



LOGICO PICCOLLO

zasaňte
kartu
a začněte

Přední strana s úkoly

Řešení a vlastní
kontrola na zadní
straně karty

správně

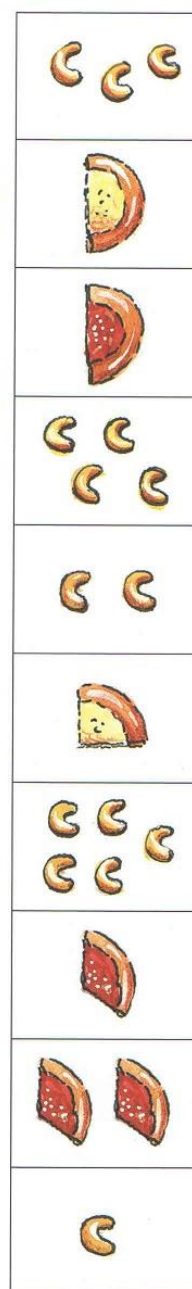
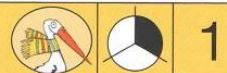


Sčítání a odčítání tří čísel
Počítej podle diagramu z



- $7 + 8 + 9 =$ ●
- $18 + 2 - 7 =$ ●
- $95 - 60 + 23 =$ ●
- $68 - 7 - 30 =$ ●
- $34 - 5 + 9 =$ ●

Spravedlivé dělení. Kolik rohlíčků a jak velký kus koláče dostane každý?

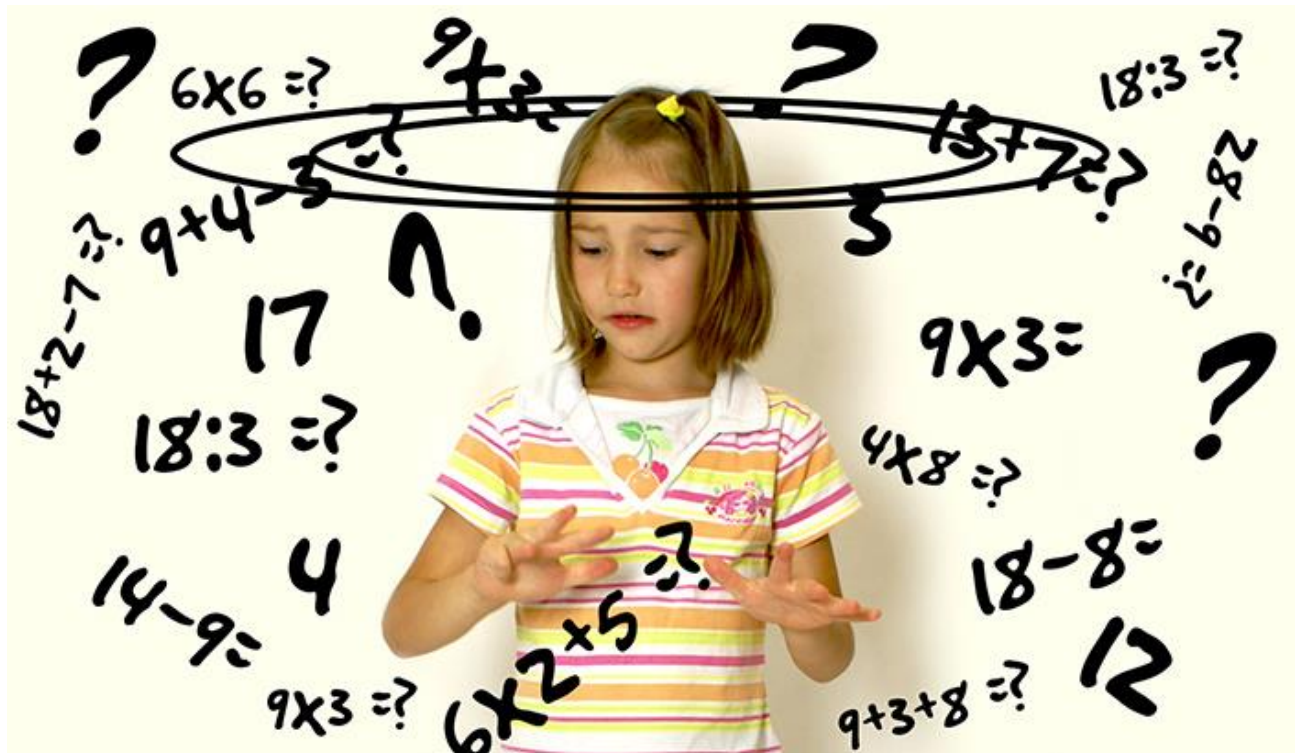


- 1,5 l
- 30,52 l
- 3,465 kg
- 9,98 s
- 38,6 °C
- 69,3 kg
- 2,8 km
- 0,5 l
- 1,5 m
- 3,70 Kč

OPERATIONS – COLORFUL PRISMS



HOW WE CAN HELP STUDENT WITH DYS CALCULIA IN THE CLASSROOM ?



IMPORTANT NOTES – WHAT DOES IT NEED TO BE TAKE INTO ACCOUNT?

HABERSTROH,S.; SCHULTE-KÖRNE G. 2019,

- Persons with dyscalculia **perform poorly in all areas of mathematics**, particularly in the processing of numbers and quantities, in basic arithmetic operations, and in the solving of word problems.
- The diagnosis of dyscalculia requires mathematical performance as assessed by a standardized test to be at least one standard deviation below the age- or grade-appropriate mean.
- **The treatment** should be disorder-specific, should be **initiated as early as possible**, and should be provided by an appropriately trained expert in an individual setting.
- **Comorbid symptoms** and disorders must be kept in mind during the diagnosis and treatment of dyscalculia, particularly comorbid dyslexia, attention deficit/hyperactivity disorder, and disorders of either the internalizing type (anxiety, depression) or the externalizing type (characterized by aggression or rule-breaking).



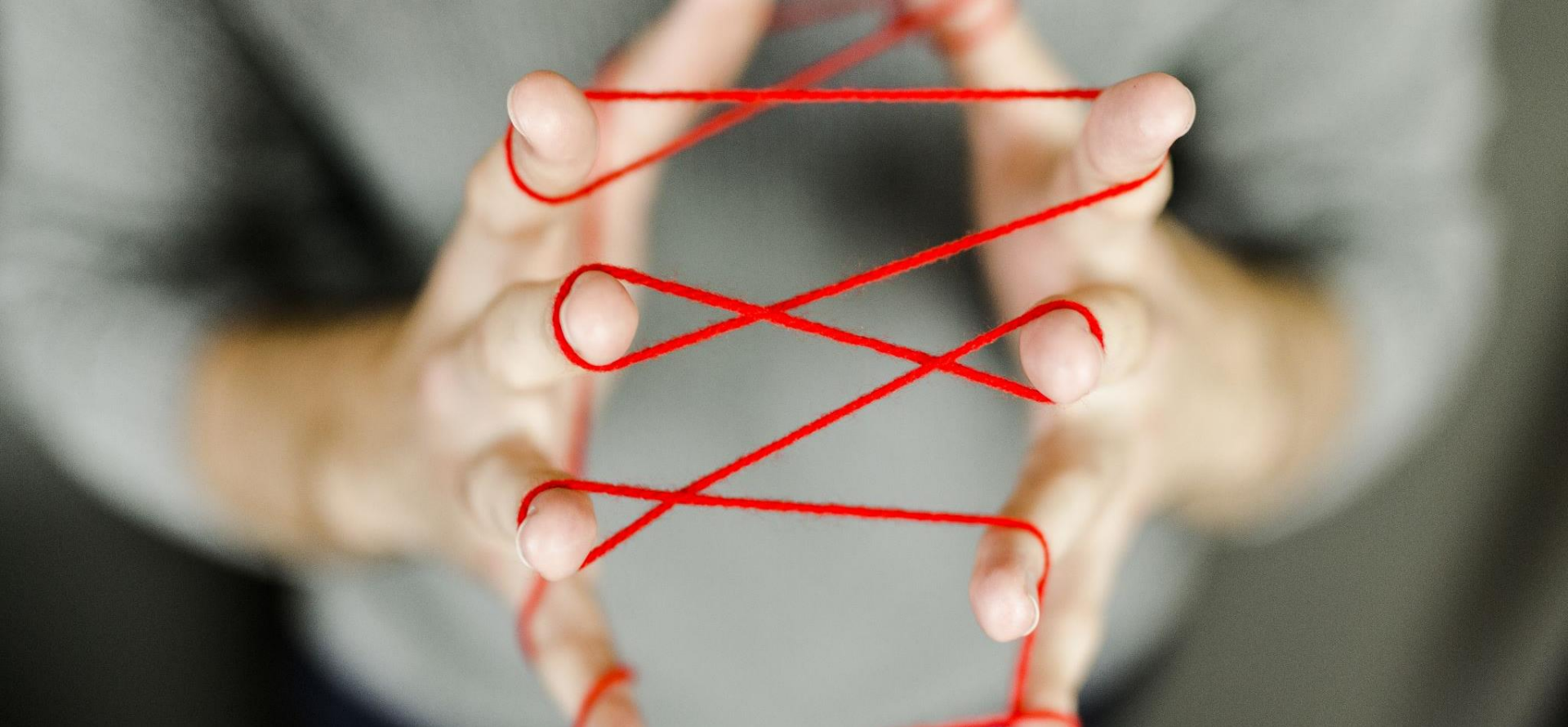
DYSCALCULIA — INTERVENTION

FREY, D. 2020. HOW TO TREAT THE SYMPTOMS OF DYSCALCULIA.



- **Allow extra time on tests.** Children with dyscalculia often feel rushed during standard-length math tests.
- **List the steps for multi-step problems and algorithms.** Post clearly numbered step-by-step instructions on the board.
- **Keep sample problems on the board**
- **Use plenty of brightly colored, uncluttered reference charts and diagrams.**
- **Whenever possible, allow calculator use**
- **Reduce the number of assigned problems.** Assigning 10 problems, rather than a full page, is enough to assess a student's understanding.





DEVELOPMENTAL COORDINATION DISORDER - DYSPRAXIA

DEVELOPMENTAL COORDINATION DISORDER (DCD)

- Developmental Coordination Disorder (DCD), also known as dyspraxia, is a common disorder affecting fine and/or gross motor coordination in children and adults.

Dyspraxia Foundation, UK, 2019

- Developmental Coordination Disorder (DCD) is a motor skills disorder that affects five to six percent (5 - 6 %) of all school-aged children – 2 % diagnosed.
 - The ratio of boys to girls varies from 2:1 to 5:1

CanChild, Canada, 2019




DEVELOPMENTAL COORDINATION DISORDER (DCD) – ETIOLOGY UNCLEAR

- By definition, children with DCD may have an identifiable medical or neurological condition that explains their coordination problems.

What Causes It?

Dyspraxia can run in families. A specific “dyspraxia gene” hasn’t been identified. But it’s not uncommon for parents of children with dyspraxia to say that other members of their family have had similar issues. Doctors will ask about family history when diagnosing the condition.



A red circular graphic with a white border, containing white text. The text is centered and reads: "DEVELOPMENTAL COORDINATION DISORDER (DCD) – TYPES BECKY L. SPIVEY, M.ED (2019)".

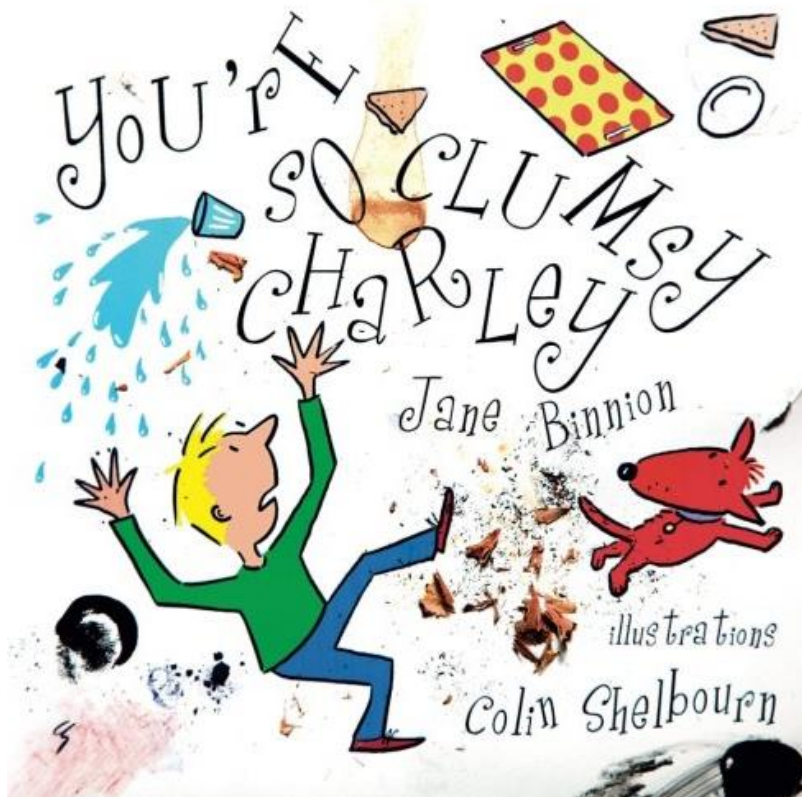
DEVELOPMENTAL
COORDINATION
DISORDER (DCD)
– TYPES
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- **Ideomotor Dyspraxia** – Completing single-step motor tasks such as combing hair and waving goodbye.
- **Ideational Dyspraxia** – Completing multi-step tasks: brushing teeth, making a bed, putting clothes on in order, buttoning, buckling, or lacing.
- **Oromotor Dyspraxia** – Coordinating muscle movements needed to pronounce words.
- **Constructional Dyspraxia** – Establishing spatial relationships, e.g., accurately positioning or moving objects from one place to another.

DEVELOPMENTAL COORDINATION DISORDER (DCD) – SYMPTOMS

Young Children Trouble With:	School-Age Children Trouble With:	Teens and Adults Trouble With:
<ul style="list-style-type: none">• Learning to walk, jump, hop, skip, throw, or catch a ball• Pronouncing words and being understood• Establishing left- or right-handedness• Bumping into things• Moving the eyes— instead, moving the whole head• Being sensitive to touch: irritated by clothing on skin, hair brushing, nail-cutting, or teeth-brushing	<ul style="list-style-type: none">• Poor pencil grip and letter formation, slow handwriting• Fine motor skills: holding a pencil, buttoning, cutting with scissors• Playing sports, riding a bike, and other activities requiring coordination• Sensing direction• Speaking at a normal rate or in way that can be easily understood• Making social connections due to speech challenges• Phobias and obsessive behaviors	<ul style="list-style-type: none">• Speech control— volume, pitch, articulation• Writing and typing• Over- or under-sensitivity to light, touch, space, taste, or smells• Personal grooming and other self-help activities• Cooking or other household chores• Driving• Clumsiness

COOCURING DIFFICULTIES



- Attention deficit hyperactivity disorder (ADHD),
- Learning disabilities (LD),
- Specific language impairment (SLI) – Speech disorders
- Behavioural disorder
- Social and emotional difficulties
- Non-motor difficulties
 - Memory, perception and processing as well as additional problems with planning, organising and carrying out movements in the right order in everyday situations



**SENSORY
INTEGRATION
AS A
THERAPY FOR
DCD**



https://www.youtube.com/watch?v=1_Iuj8dr9oY

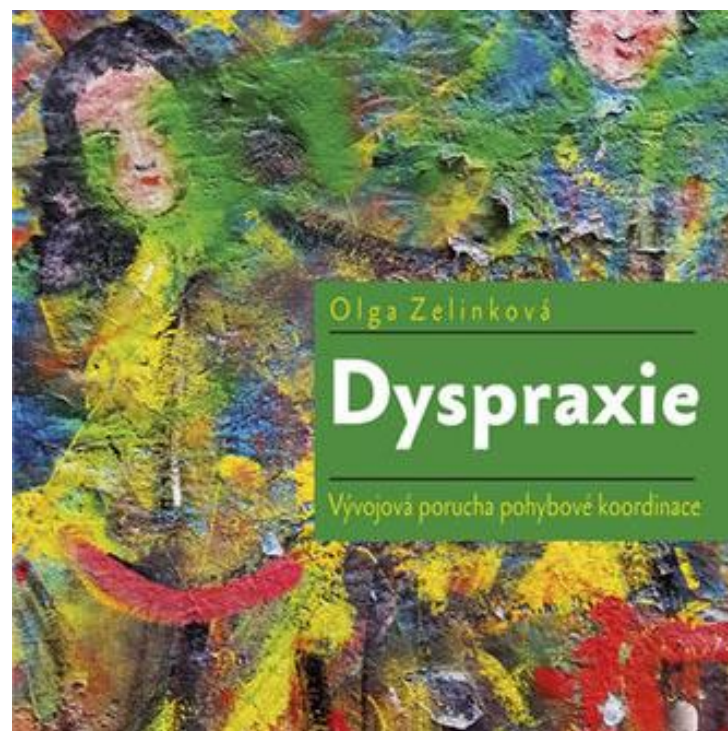
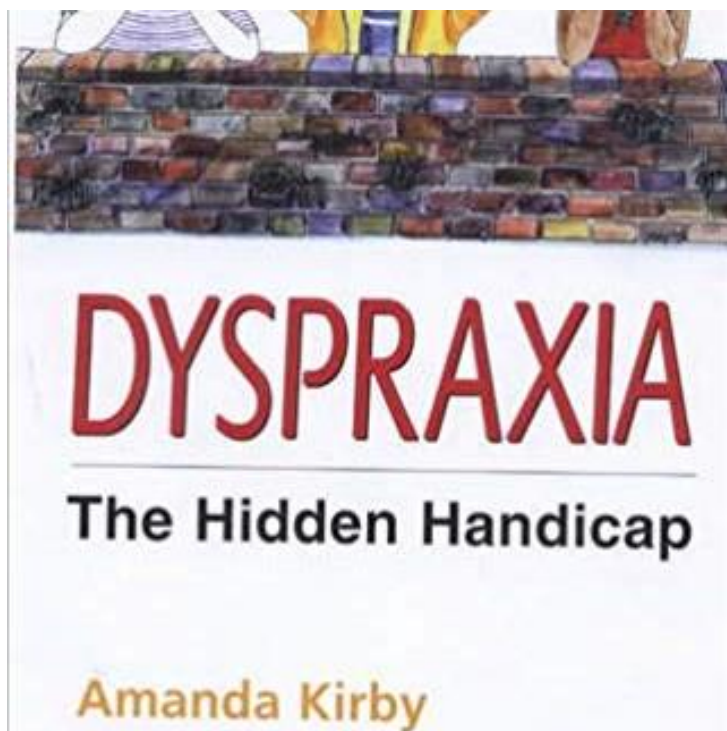




THERAPY IN CHILD WITH DYSPRAXIA IN THE CZECH

- Physiotherapy
 - Individual/Group
- Occupational therapy
- Health exercises for children
- Selected sports activities -
Swimming





AMANDA KIRBY — DYSPRAXIA
OLGA ZELINKOVÁ - DYSPRAXIE

