

# Memory in 22q11.2DS

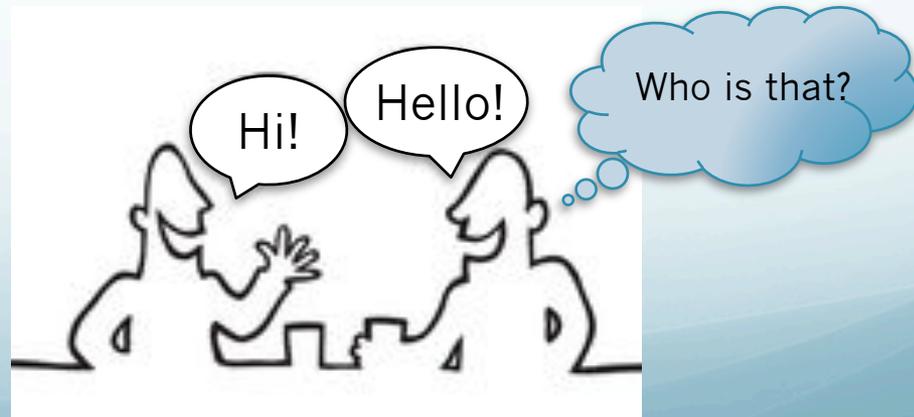
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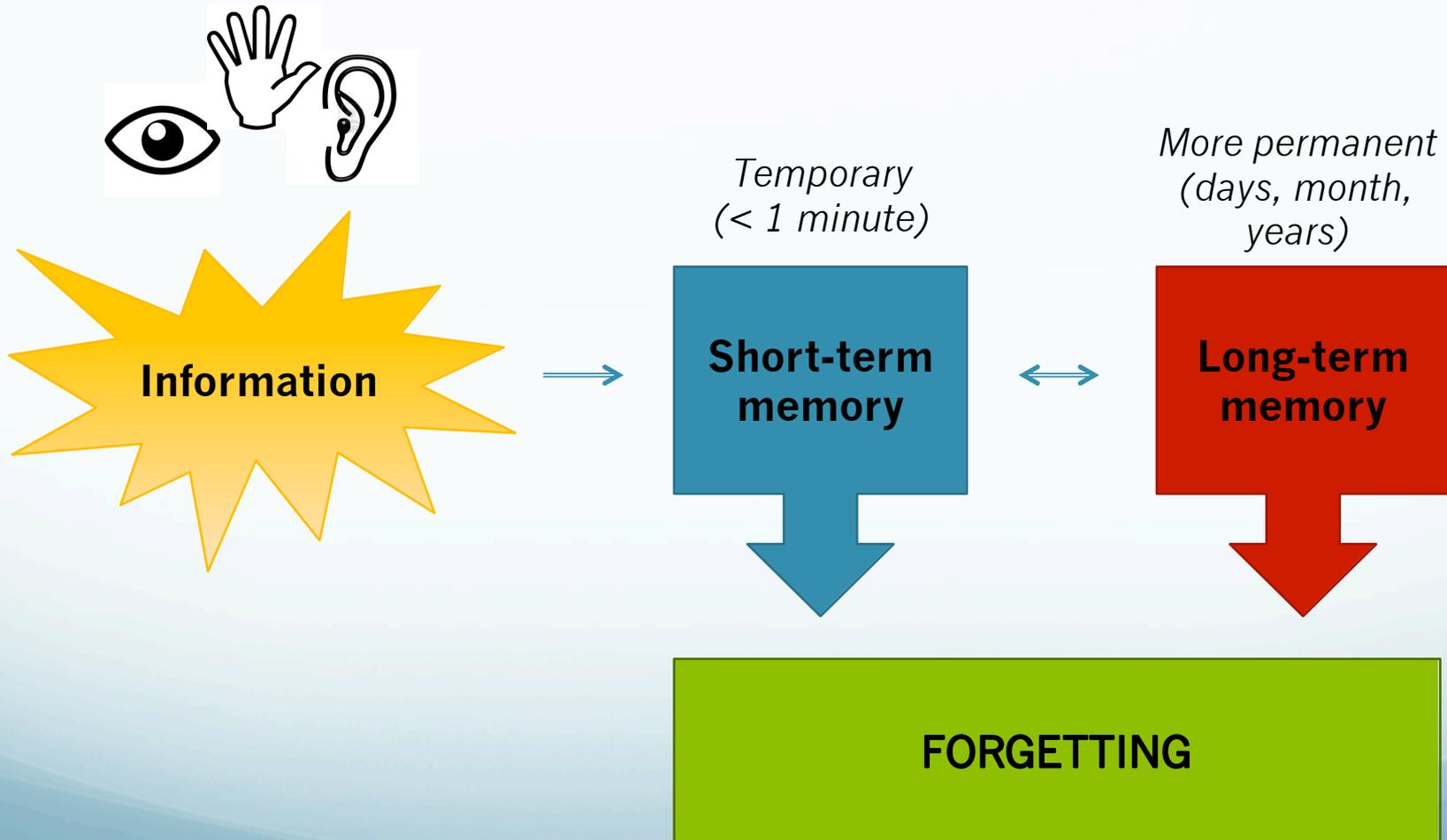
22q11-Europe, 7<sup>th</sup> October 2017

# Memory in everyday life

- Crucial in different parts of life:



# Memory



# Long term memory (LTM)

- Ability to store and recall information for a long lasting period
  - Events that occurred
  - Meaning of words
  - Skills
  - ...
- Characterized by structural and functional changes of the neural networks of the brain

# Memory in 22q11.2DS

- When measured by tests:
- Verbal memory reported to be an area of relative strength  
(Antschel, Fremont & Kates, 2008)
- Visual/visuo-spatial memory is impaired  
(Bostelmann et al., 2016)
- Reports from parents:

*He forgets easily  
what he has  
learned in school*

*Memories  
fade away  
quicker*

*She needs to be  
reminded regularly  
of older topics*

# Why investigate forgetting?

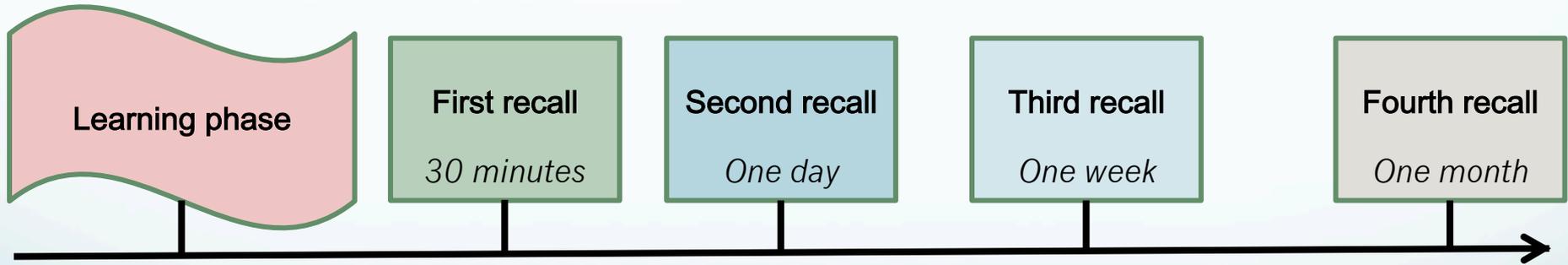
- Memory capacities are usually assessed after a delay of 30-40 minutes
- BUT in daily life, especially in school learning, information has to be retained over hours, days, month or years

ARE WE MISSING SOMETHING?

Need for developing new tools of  
assessment

# New Task

- Verbal and visual information
- 4 different delays in time

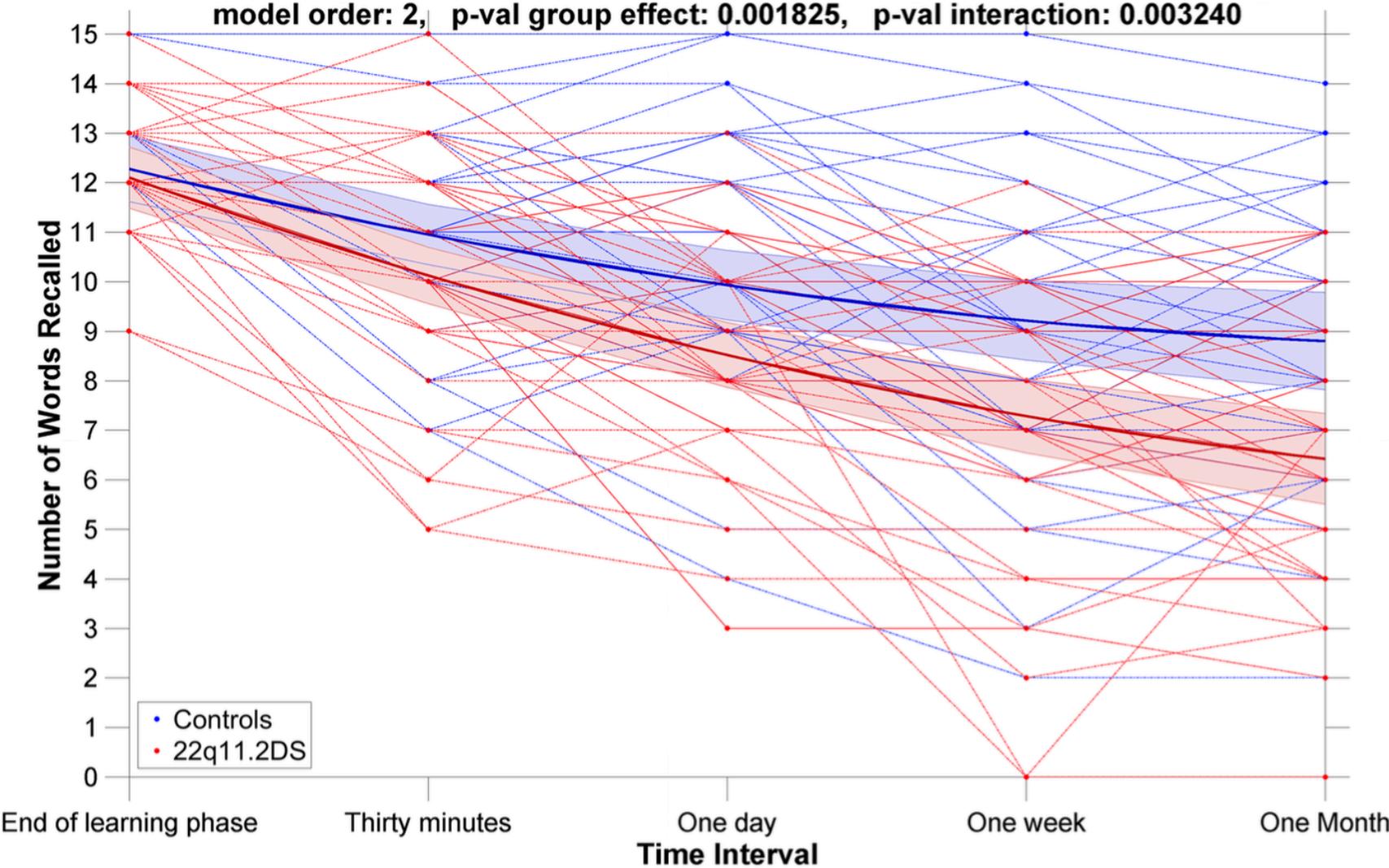


# Population

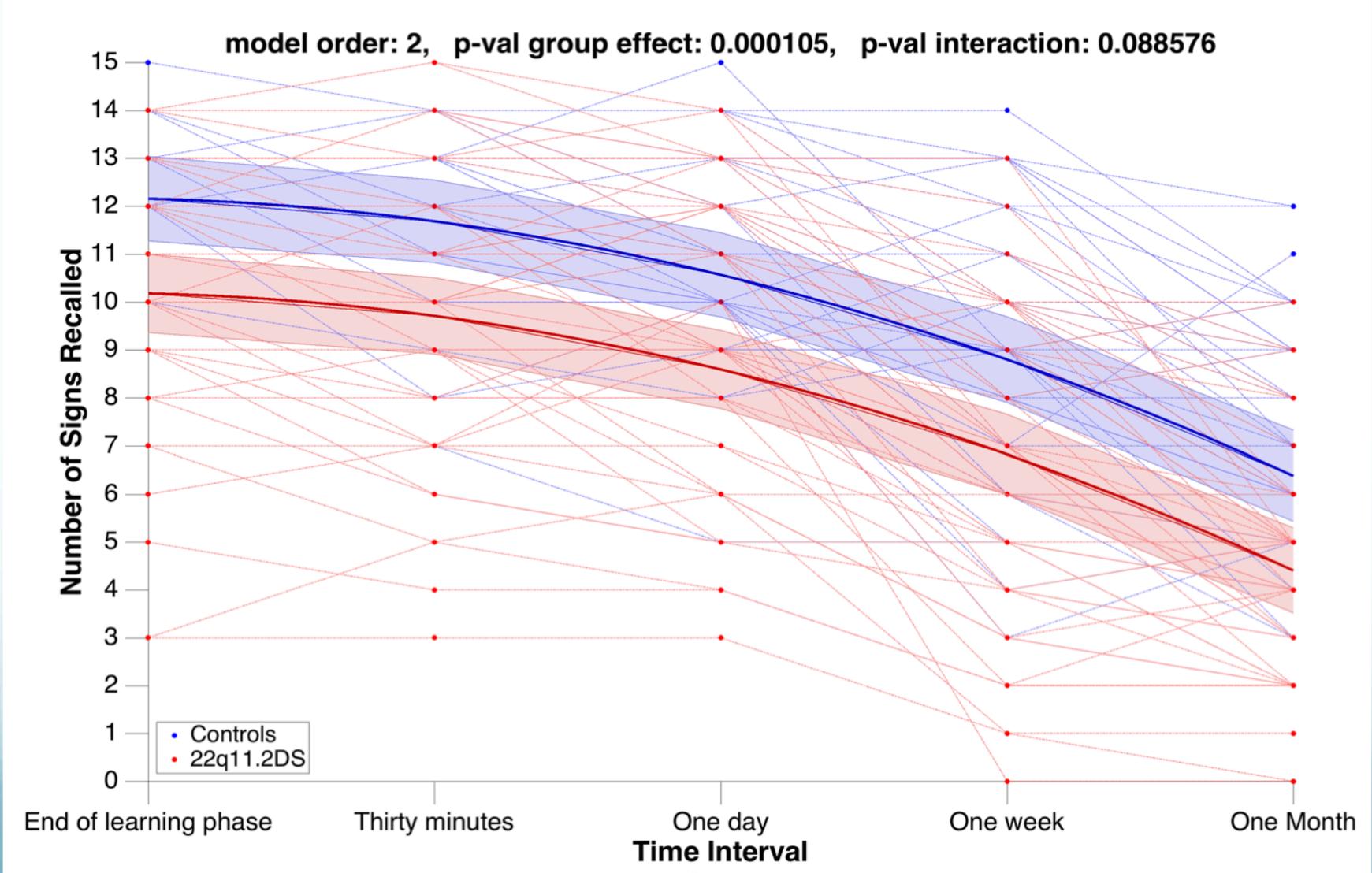
	<b>22q11.2DS</b>	<b>Controls</b>
N	53	39
Female/Male	30/23	21/18
Mean age (SD)*	16.221(4.942)	14.231(5.036))

\*Age range = 8-25 years old

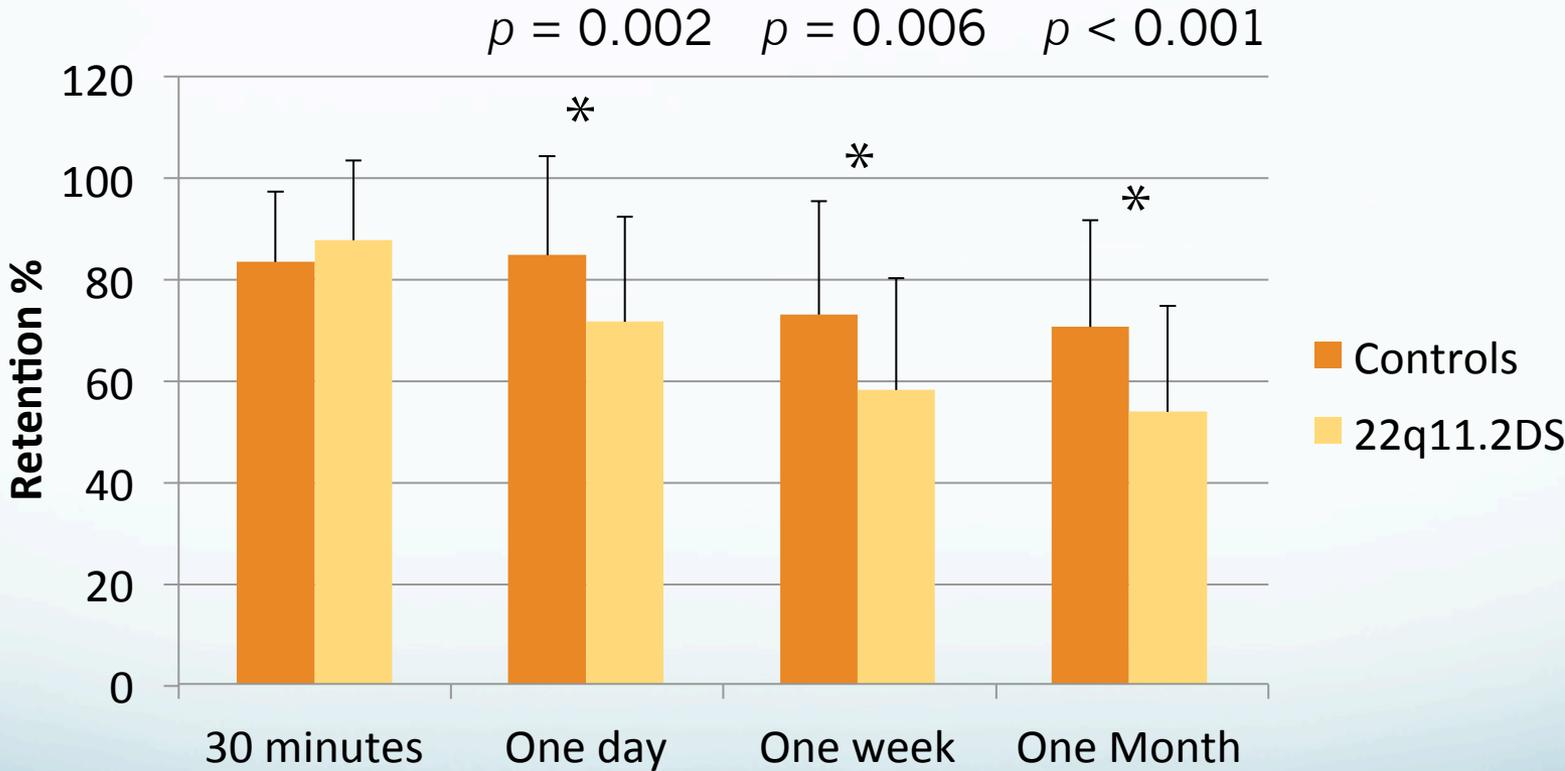
# Results: verbal memory



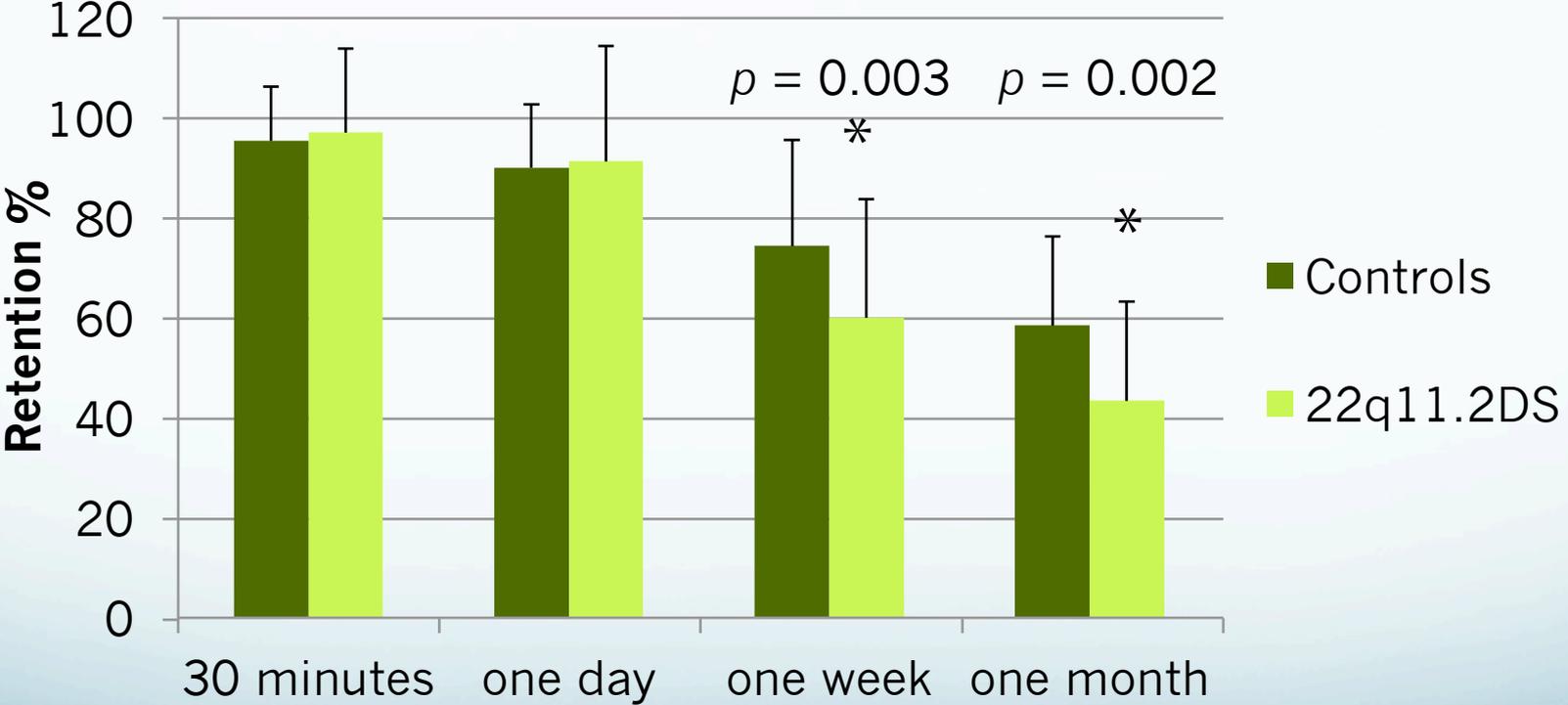
# Results: visual memory



# Results: verbal memory



# Results: visual memory



# Discussion

- Visual information is harder to learn for the 22q11.2DS group
- Forgetting does not occur in the same pace depending on modality (verbal or visual)
- Even though verbal memory is stronger in shorter delays, it fades away quicker

BUT

- There is a large heterogeneity of performances
- Influence of external factors (IQ, psychiatric symptoms,...)



How is this relevant for families and professionals?

# Tricks to boost memory



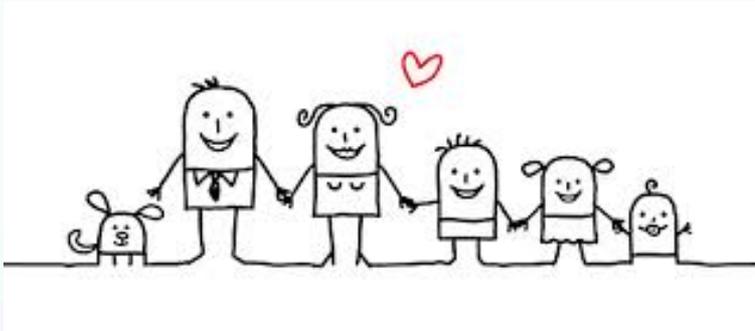
- Emphasize verbal memory
  - ✓ Have someone read the information to you
  - ✓ Repeat the information out loud
- Spilt the information in small parts
  - ✓ Learn in small chunks
  - ✓ Distribute it on different days
- Regular repetitions
  - ✓ Go back to information previously learned
  - ✓ Try to repeat in your head what you have learned

# Take home message

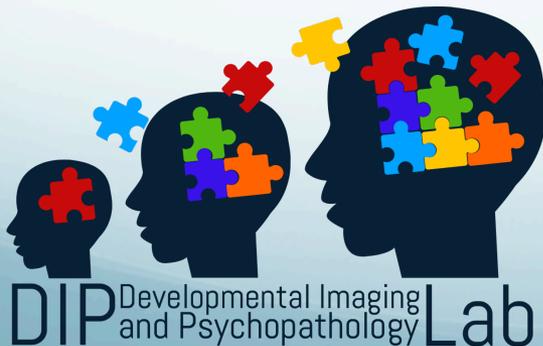


- Verbal memory is more efficient
- But forgetting occurs over longer delays
- Large heterogeneity of performance possibly modulated by external factors (*ongoing work*)
- Some tricks to boost memory in 22q11.2DS:
  - ✓ Use the verbal channel
  - ✓ Split the information
  - ✓ Repeat often

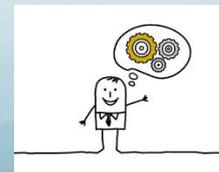
# Thank you to the families!



And to the DIP lab team:



Feel free to contact me:



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