



Sleep problems in young people with 22q11.2DS

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22Q11 EUROPE

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Why look at sleep?

- A state of reduced consciousness to the outside world
- A poor nights sleep can lead to a lot of problems^{1,2}
 - We are more emotional
 - Physical performance is poor
 - Poor concentration
 - Harder to think and form words



- What if you are already at risk for mental health problems?
- Chronic sleep problems can add to other problems^{3,4}

Sleep in young people

- Sleep in children and adolescents is vulnerable
- In typically developing children¹
 - New-born-toddler between **6-43%**²
 - Pre-school up to **25%**³
 - Adolescents up to **33%** with sleep disturbances⁴
- These problems tend **not to be pervasive**
 - Less problems with age and development
- Children with developmental delay, ASD and ADHD have more problems with getting to sleep, staying asleep and waking early in the morning – **up to 86% have sleep problems**⁵



What did we do?

	Wave 1			Wave 2		
	N	Age (mean)	Gender	N	Age (mean)	Gender
22q11.DS	133	10.1(\pm 2.24)	46.6% F	77	13.6(\pm 2.12)	40% F
Siblings	61	11.0(\pm 2.45)	42.6% F	25	12.5(\pm 2.30)	41.6% F



Child and Adolescent Psychiatric Assessment (CAPA)

Initial insomnia	Hypersomnia	Tiredness	Nightmares
Middle insomnia	Restless sleep	Fatigability	Night terrors
Early insomnia	Inadequately rested		Sleepwalking

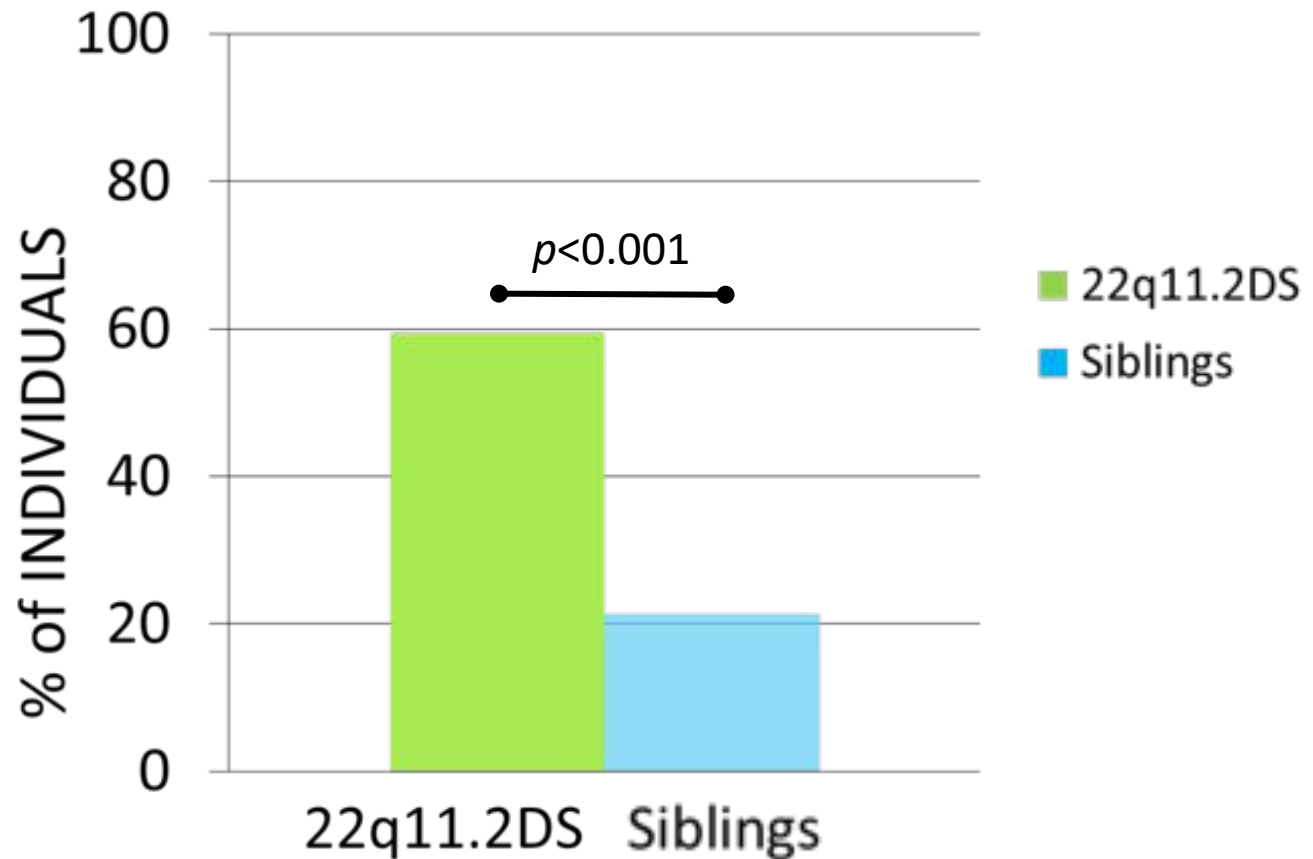


Aims

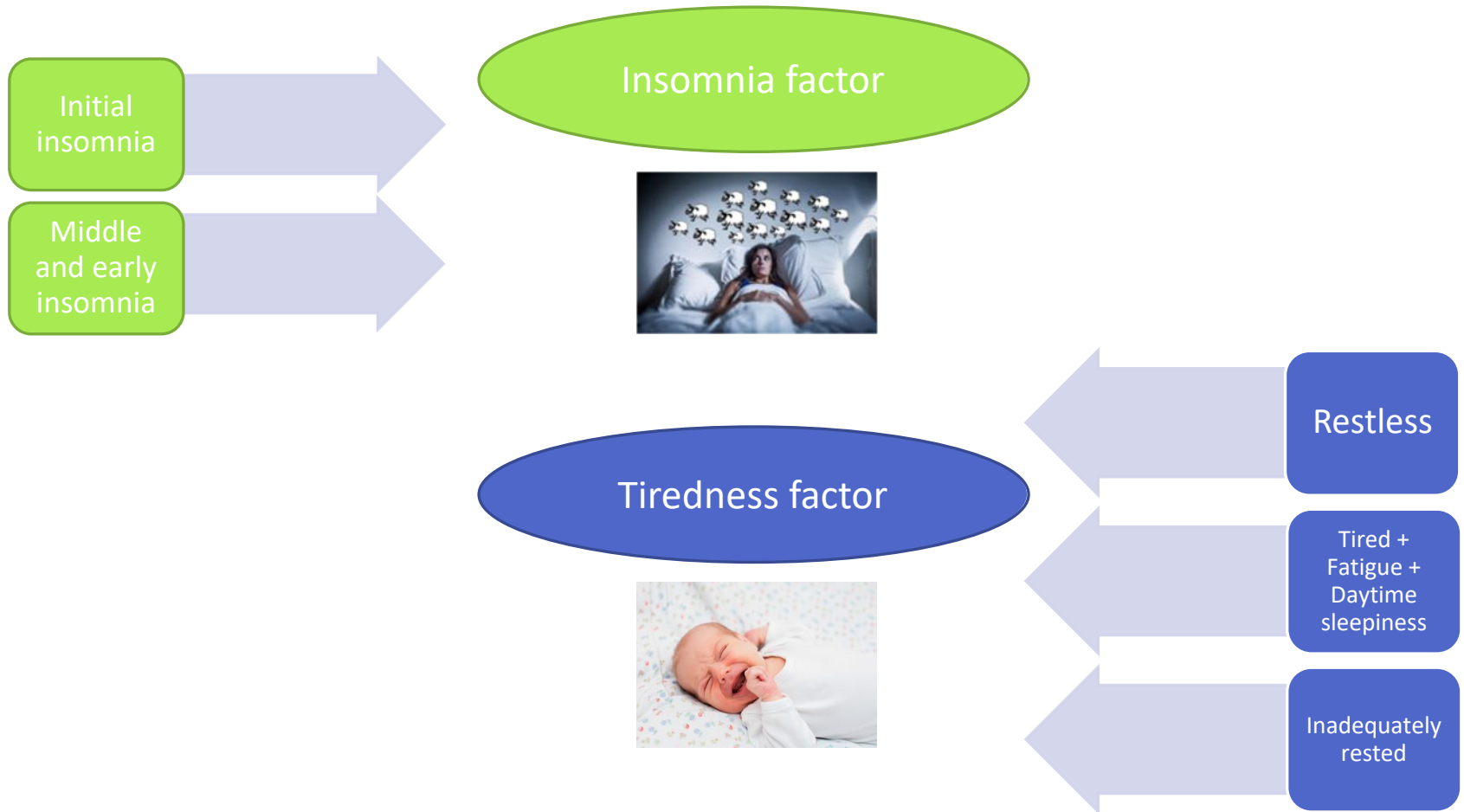
1. How many young people with 22q11.2DS have sleep problems compared to unaffected siblings?
2. What types of sleep problems do young people with 22q11.2DS have?
3. Are sleep problems related to other mental health problems?



1. How common are sleep problems?



2. Sleep problems – types?



3. Are sleep problems linked to mental health?



- We have found that young people with 22q11.2DS whom have some tiredness and young people with 22q11.2DS with extreme tiredness, both have increased likelihood of having ADHD compared to those without sleep problems.
 - No relationship with insomnia-related problems was found.
- Message: ADHD and tiredness-related sleep problems are related

3. Are sleep problems linked to mental health?



- We have found that young people with 22q11.2DS and extreme tiredness, both have increased likelihood of having ASD and anxiety compared to those without sleep problems.
 - No relationship with insomnia-related problems was found.
- Message: ASD and anxiety, and tiredness-related sleep problems are associated.



3. Are sleep problems linked to IQ and cognition?

- We have found no links between IQ and sleep problems.
- Message: IQ and sleep do not seem to be linked in 22q11.2DS
- We did find links with poorer sustained attention and more tiredness-related problems.
- Message: Poorer performance with attentional tasks are related to tiredness



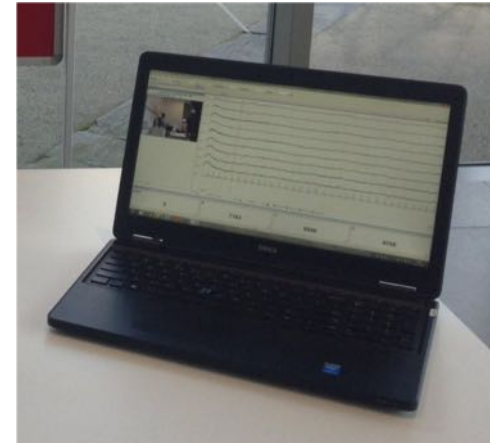
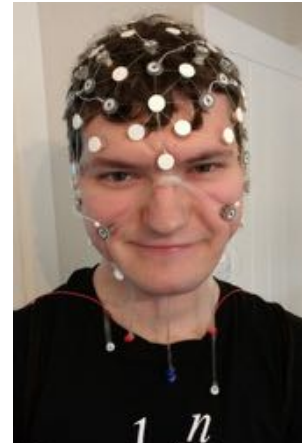
Sleep and Brain Activity



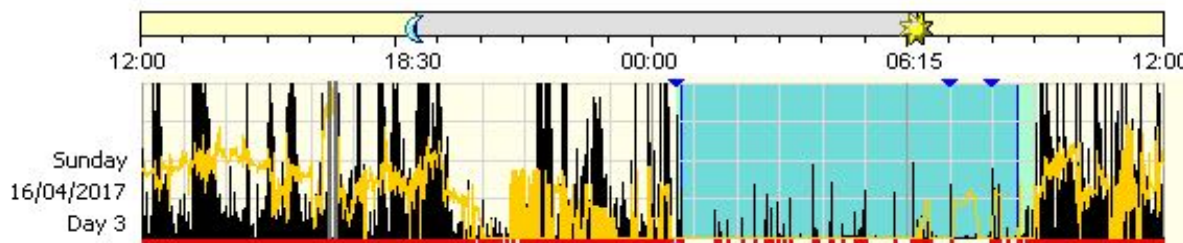
- On-going study looking at brain activity in young people with 22q11.2DS and their siblings



- Overnight sleep study



- Sleep electroencephalography (EEG), heart activity (ECG), eye movements (EOG), muscle movements (EMG) and breathing



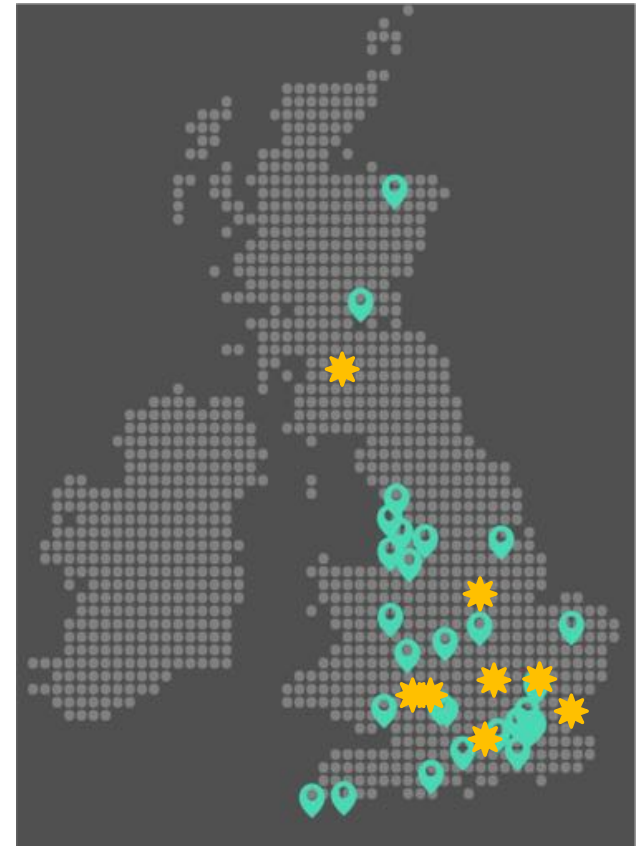
- Actigraphy watches
- Sleep diaries
- Sleep questionnaires



Participants so far...

	Age	Gender	Seen (n)*	Booked (n)
22q11.2DS	15.1 (\pm 3.91)	46.3% F	44	10
Siblings	13.8 (\pm 3.50)	54.5% F	23	5
Total	14.4 (\pm3.24)	50.4% F	67	15

*Some participants didn't complete all the measures



Places visited Places to be visited

Acknowledgements

Professor Marianne van den Bree

Professor Jeremy Hall

Professor Sir Michael Owen

The ECHO Study

IMAGINE-ID

DEFINE



Most importantly... all the incredible families who have taken part in our study!

Thank you!

If you would like to know more about our study and how to take part, please email

echo@cardiff.ac.uk

4. Sleep problems at time points

