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What is normal? Revisiting normative data for Scottish children's phonological processes

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Presentation outline

Why look?

What norms do we refer to in the clinical setting?

What have we found in our data?

Why look?

Developing new resource for assessing
single word phonological skills in pre
school children

105 children in 3 nursery schools in West
Central Scotland (inclusive)

Age range 3;01 – 5;05

78 pictures

Our sample

	♀	♂
3:00 - 3:06	4	7
3:06 - 3:11	14	13
4:00 - 4:05	14	12
4:06 - 4:11	21	9
5:00 - 5:05	2	9
TOTAL	55	50

What UK norms do we refer to in the clinical setting?

Grunwell (1981) Norms derived from error patterns in data recorded by Ingram (1976) and Anthony, Bogle, Ingram and McIsacc (1971).

Small group of children.

Other interpretations of Grunwell's normative data

Howell & Dean (1994) Metaphon

Bowen, C. (1999). Phonological Development: The Gradual Acquisition of the Speech Sound System. Retrieved from www.speech-language-therapy.com/ on 29/01/09

More recent UK based norms

Dodd, Holm, Hua & Crosbie (2003):

684 children

Articulation and Phonology assessment sections of the DEAP

Suppression of processes differs from ages proposed by Grunwell and others

Approximate age of suppression of phonological processes

Adult target achieved 100% of time

Adult target achieved 90% of time

Adult target achieved 75% of time

this may account for the differences reported

But in intervention guide is to generalisation after 50% achievement

Focus on 6 processes:

Velar fronting

Palato-alveolar fronting

Stopping affricates

Stopping fricatives

Cluster reduction

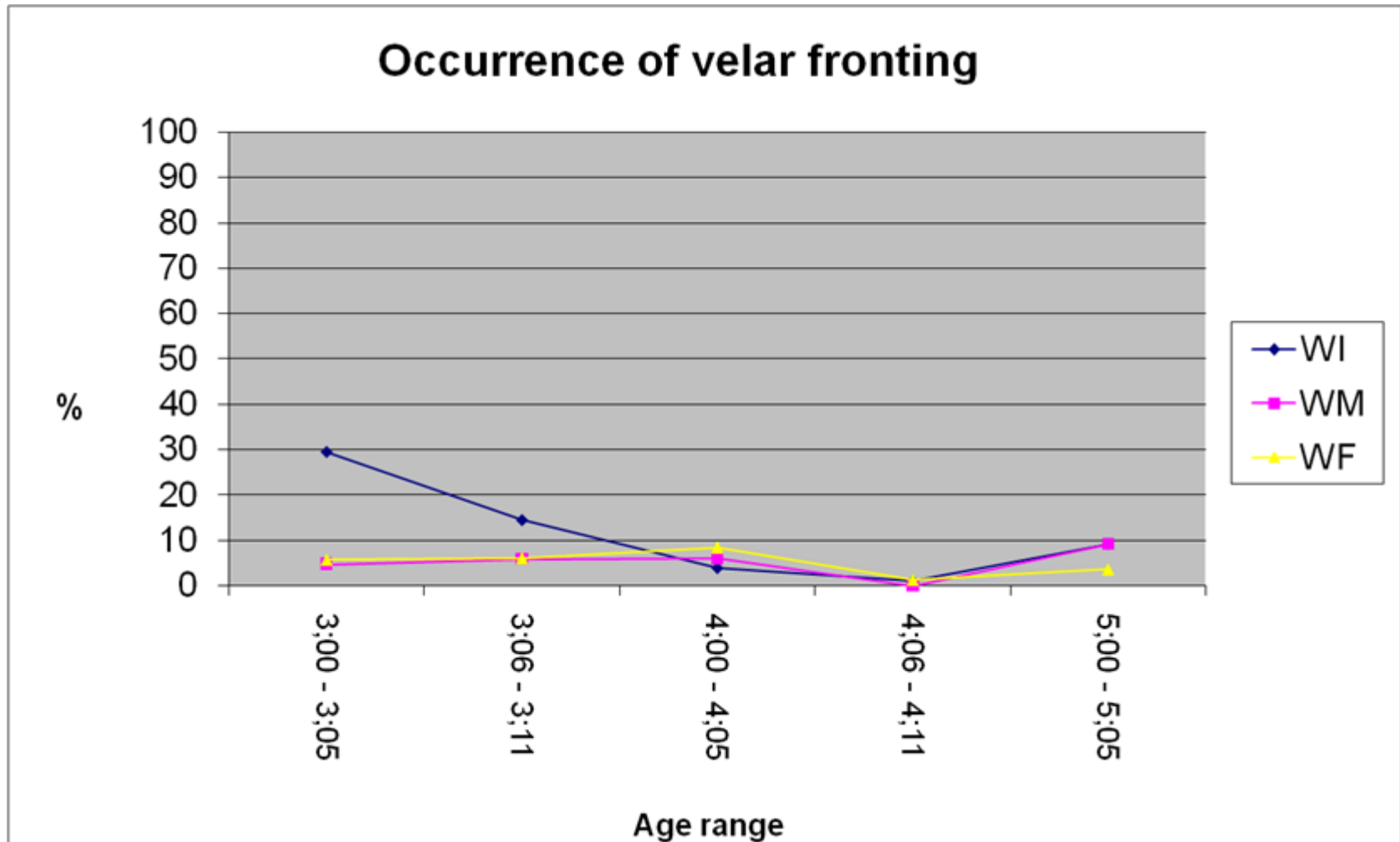
S-cluster reduction

Velar fronting

		2;0– 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Velar Fronting	Grunwell							
	Howell & Dean							
	Bowen							
	Dodd et al *							

* No distinction between velar and palato-alveolar fronting in this sample

Our data





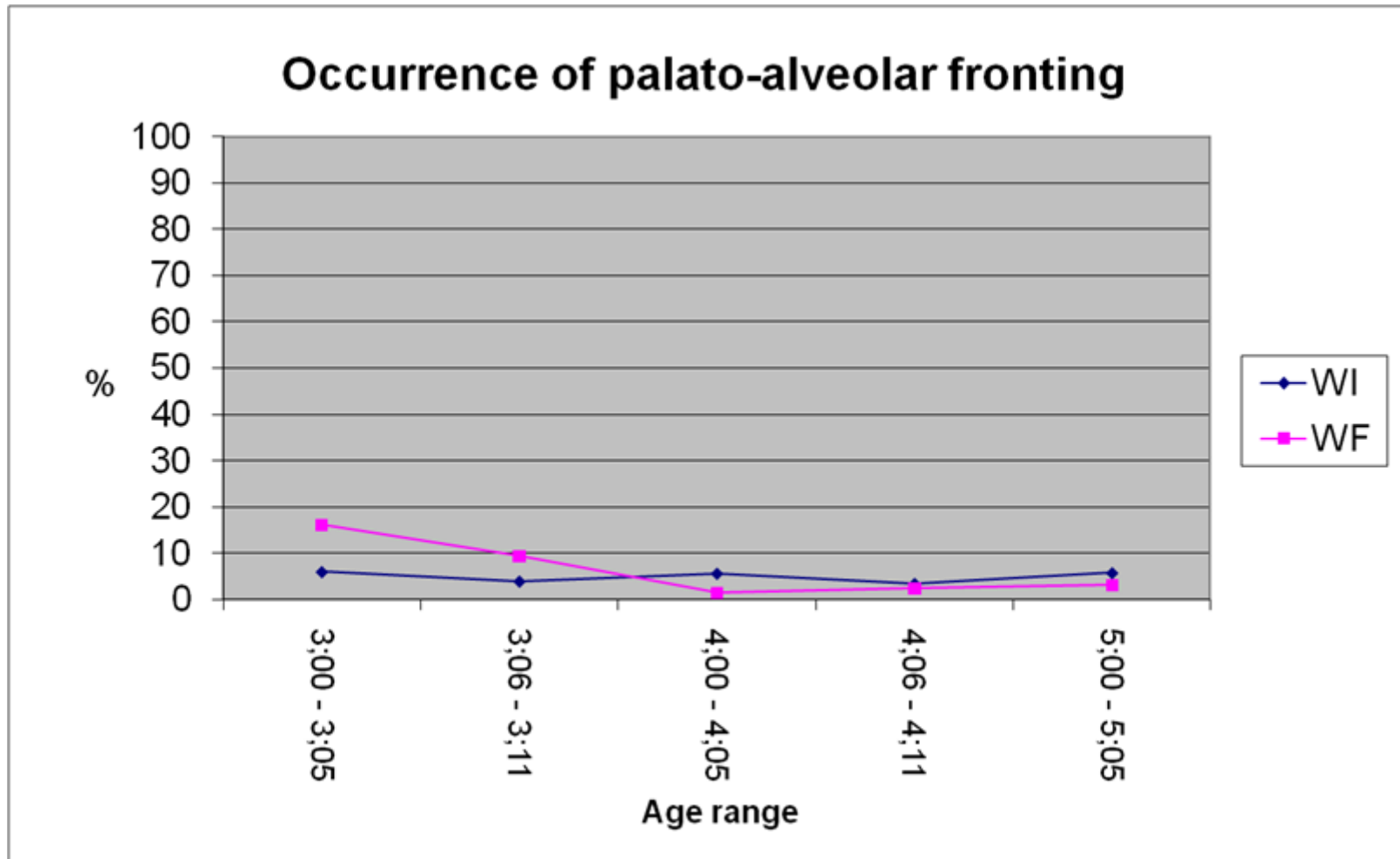
		2;0– 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Velar Fronting	Grunwell							
	Howell & Dean							
	Bowen							
	Dodd et al							

Palato-alveolar fronting

		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Palato- alveolar fronting	Grunwell							
	Howell & Dean							
	Bowen							
	Dodd et al *							

* No distinction between velar and palato-alveolar fronting in this sample

Our data





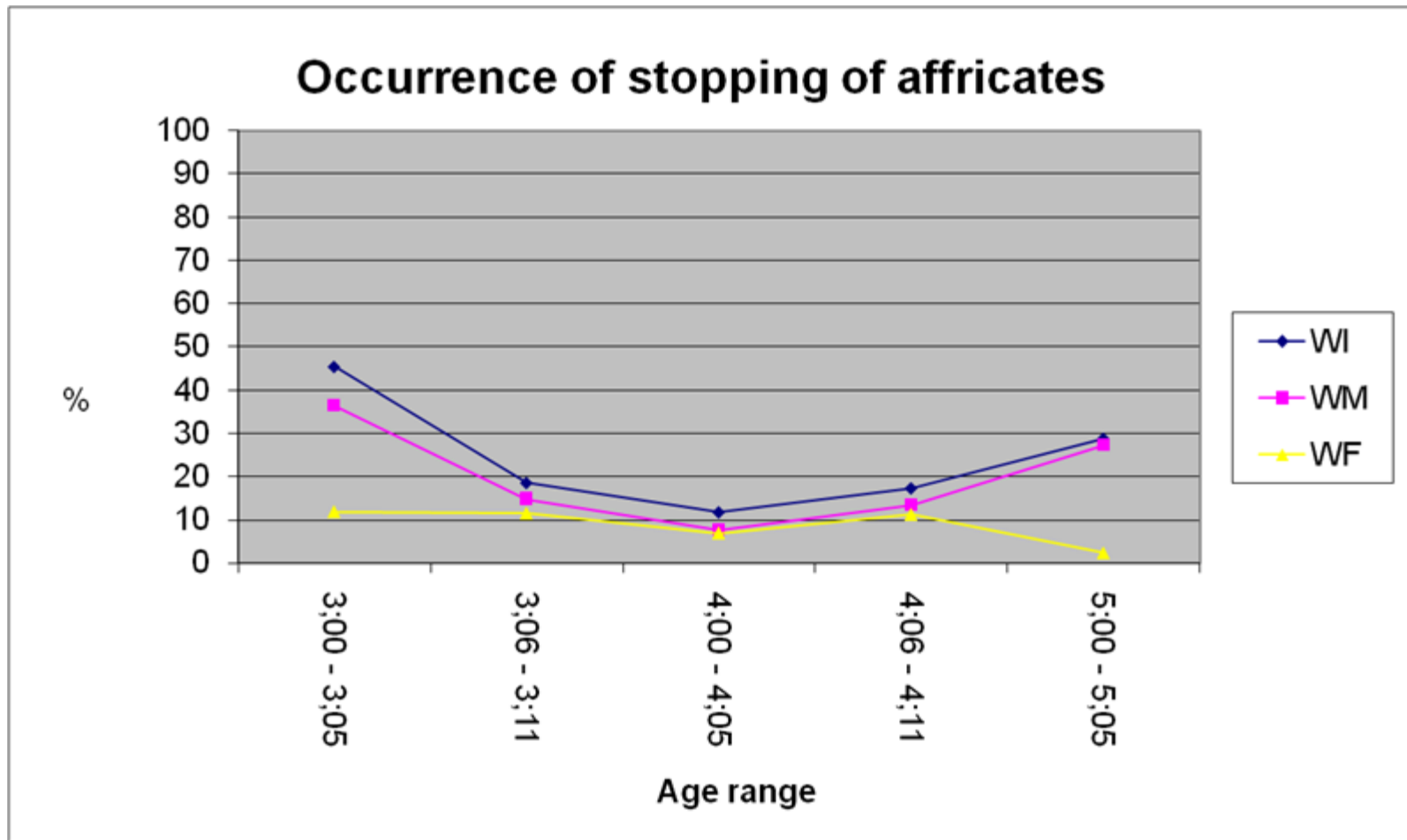
		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Palato- alveolar fronting	Grunwell			OUR DATA FROM HERE				
	Howell & Dean							
	Bowen							
	Dodd et al							

Stopping affricates

		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Stopping affricates	Grunwell							
	Howell & Dean							
	Bowen							
	Dodd et al *							

* No distinction between stopping fricatives and stopping affricates in this sample

Our data





		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Stopping affricates	Grunwell							
	Howell & Dean							
	Bowen							
	Dodd et al *							

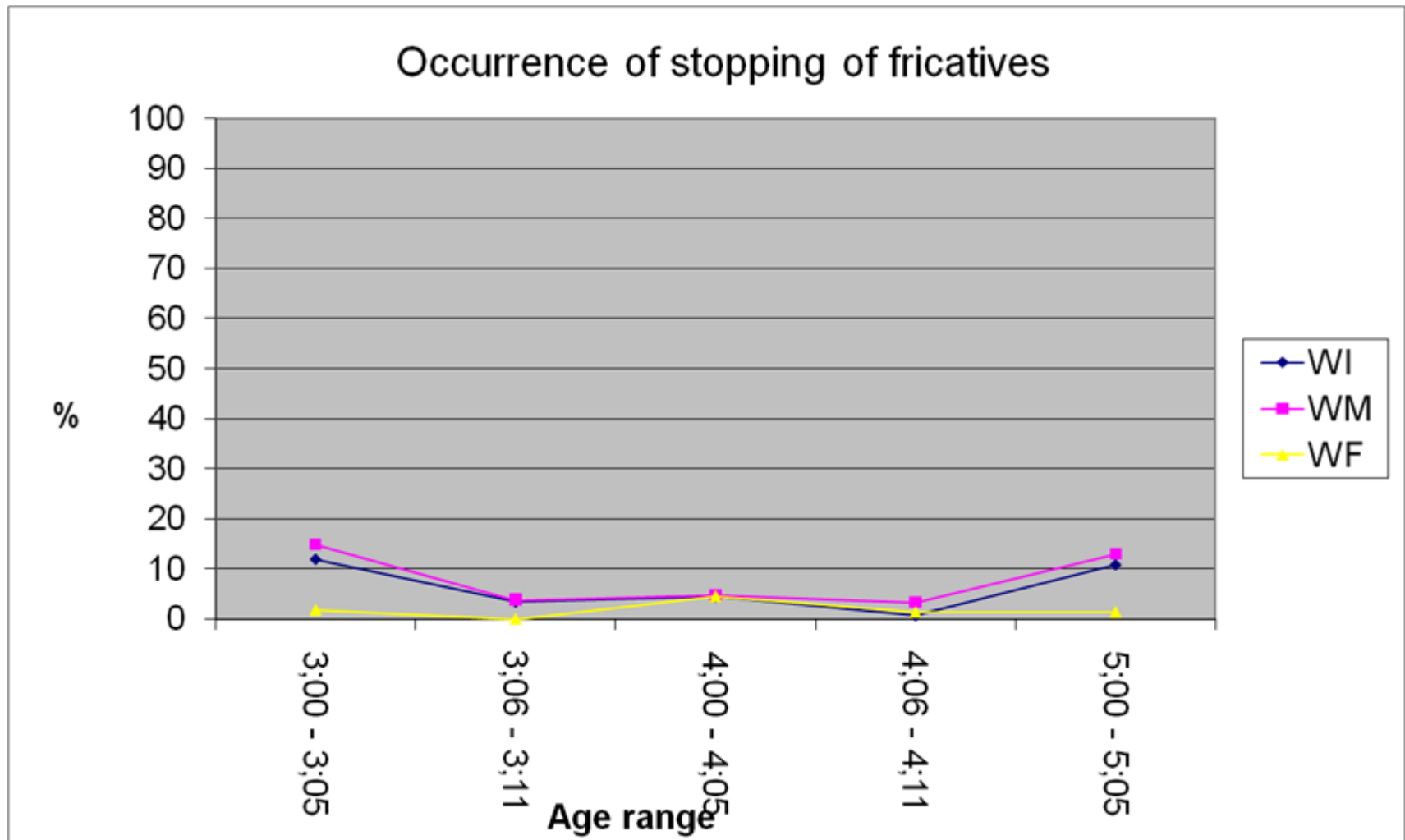
OUR DATA FROM HERE

Stopping fricatives

		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Stopping fricatives	Grunwell		/□/ /□/ /□/	/□□/ /□/	/□/ /□/		/□□/ /□/	/□/ /□/
	Howell & Dean		/□/ /□/	/□/ /□/	/□/			
	Bowen			/□/ /□/	/□/ /□/		/□/ /□□/ /□□/	/□/ /□/
	Dodd et al *							

* No distinction between stopping fricatives and stopping affricates in this sample

Our data



		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Stopping fricatives	Grunwell		/□/ /□/ /□/	/□□/ OUR DATA FROM HERE	/□/ /□/		/□□/	/□/ /□/
	Howell & Dean		/□/ /□/	/□/ /□/	/□/			
	Bowen			/□/ /□/	/□/ /□/		/□/ /□□/ /□□/	/□/ /□/
	Dodd et al *							

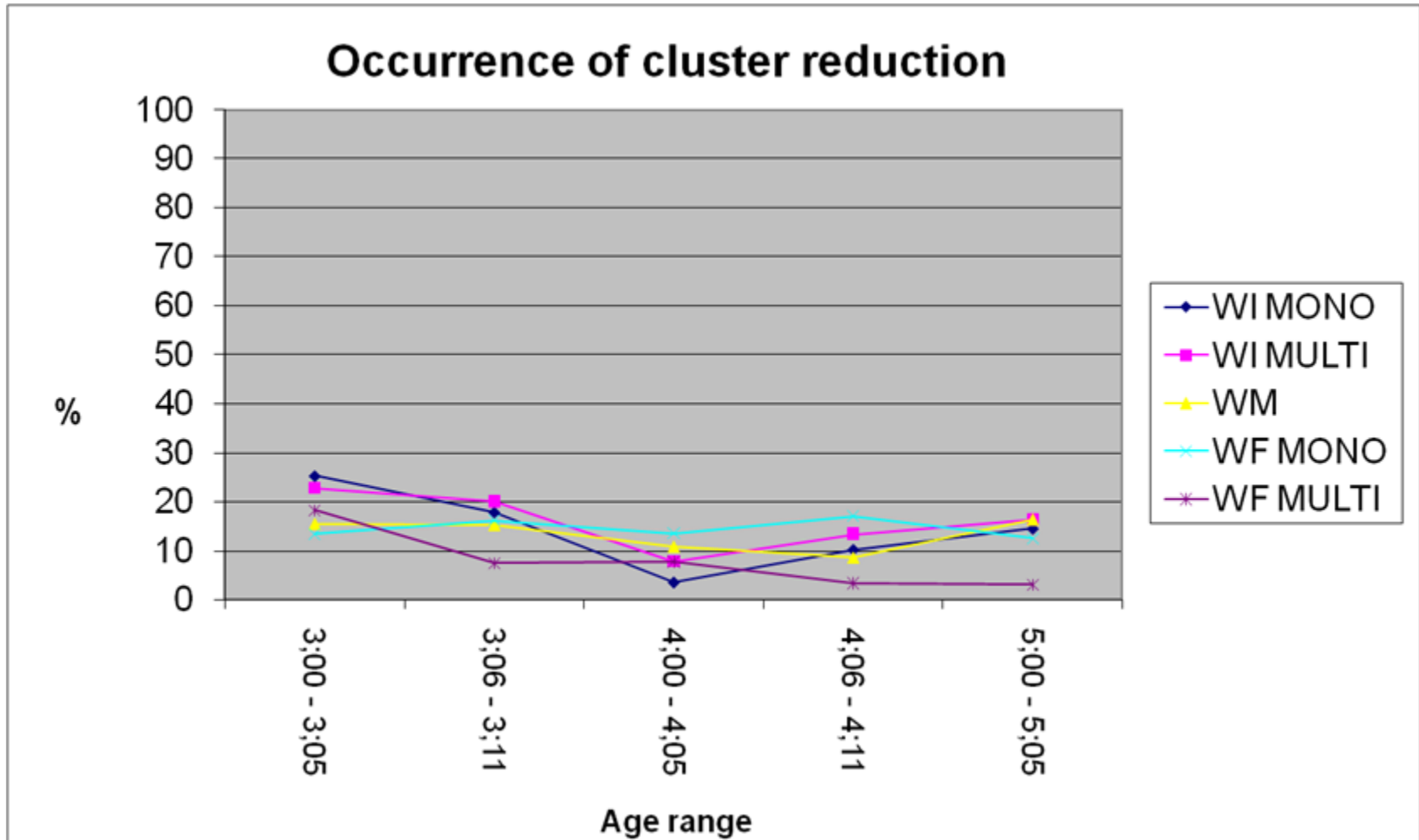
* No distinction between stopping fricatives and stopping affricates in this sample

Cluster reduction

		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Initial Cluster Reduction Obstruent + approximant	Grunwell							
	Howell & Dean *							
	Bowen *							
	Dodd et al *							

* No distinction is made between s-clusters and obstruent + approximant cluster combinations in these samples

Our data



		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Initial Cluster Reduction Obstruent + approximant	Grunwell							
	Howell & Dean							
	Bowen							
	Dodd et al							

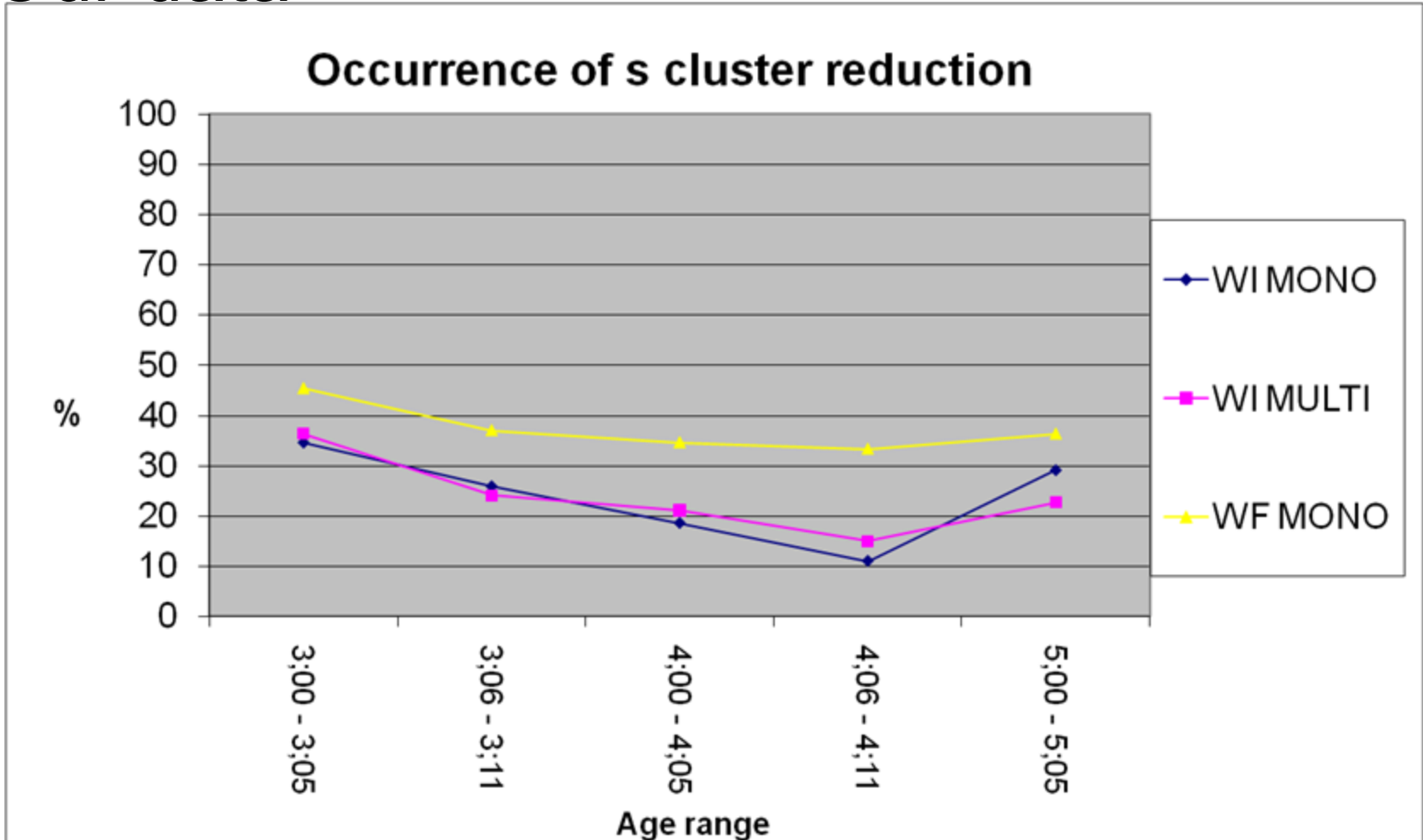
OUR DATA FROM HERE

S-cluster reduction

		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Initial Cluster Reduction /s/ + consonant	Grunwell							
	Howell & Dean *							
	Bowen *							
	Dodd et al *							

* No distinction is made between s-clusters and obstruent + approximant cluster combinations in these samples

Our data



		2;0 – 2;6	2;6 – 3;0	3;0 – 3;6	3;6 – 4;0	4;0 – 4;6	4;6 – 5;0	5;0 +
Initial Cluster Reduction /s/ + consonant	Grunwell							
	Howell & Dean							
	Bowen							
	Dodd et al							

OUR DATA FROM HERE

Results

Suppression of velar fronting, stopping of affricates and s-cluster reduction is similar to previous research

Suppression of palato-alveolar fronting, stopping of fricatives and obstruent cluster reduction occurring earlier than anticipated

Why?

All children from age of 3 in Scotland are allocated free nursery placement

Children under the age of 3 are supported with the “Birth to Three – Supporting our youngest children” framework. (Scottish Executive 2005)

Communication and language skills form a core part of the Curriculum Framework for children 3-5 : Early Years Educators are trained in supporting this development (Scottish Executive, 1999)

Pre school children may be having to communicate with a wider range of people than previous research cohorts

Limitations and Future Research

Limitations

- Sample size
- Distribution within age ranges
- Representativeness of oldest age group

Where do we go from here?

- Geographical diversity
- Publish assessment
- Clinical decision-making with norms

Ask the audience

Do you have pre-school phonology cases on your caseload?

Do you routinely treat these children?

What developmental norms do you use?

- Grunwell (PACS)
- Howell & Dean (Metaphon)
- Bowen (Web resources)
- Dodd (DEAP)
- Other

Implications

Speech unintelligibility can impact on key aspects of the Curriculum Framework for children 3-5 (Scottish Executive, 1999)

Children with expressive language problems can normalise without intervention – however, it is difficult to predict which children will do so (Law et al., 1998)

Dodd (2005) offers a framework for classifying difficulties

There is evidence to support efficacy of direct SLT intervention for children with speech difficulties (Law et al., 1998)

Are we relying on outdated norms when advising our colleagues in education?

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