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## Background

- The Pregnolia device provides objective, quantitative cervical stiffness (CS) measurements with data in singletons showing potential for preterm birth prediction<sup>1,2</sup>.
- Limited cervical remodelling research in multiple pregnancies<sup>3</sup> with no Pregnolia data yet available in twin population.

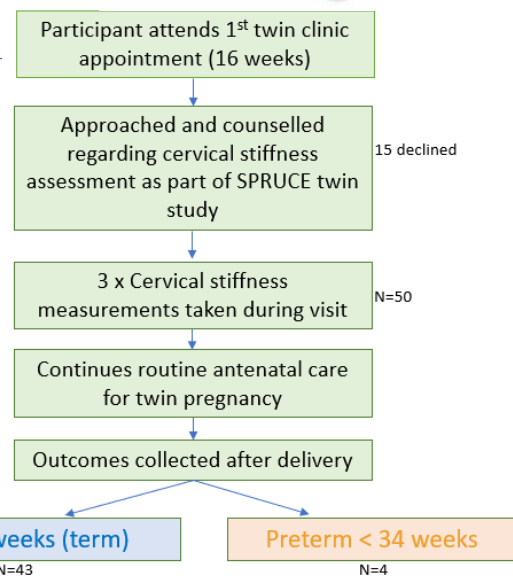
## Objectives

- To collect CS measurements in multiple pregnancy population
- To explore CS in relation to spontaneous preterm birth in twins



Figure 1- Pregnolia device

## METHODS



- Recruitment ongoing
  - Preliminary results analysed using IBM SPSS Statistics 29.0
  - Average CS measurement used
- \*iatrogenic preterm deliveries excluded from analysis. (N=3)

## Preliminary Results

### Cervical stiffness Percentiles at 16 weeks

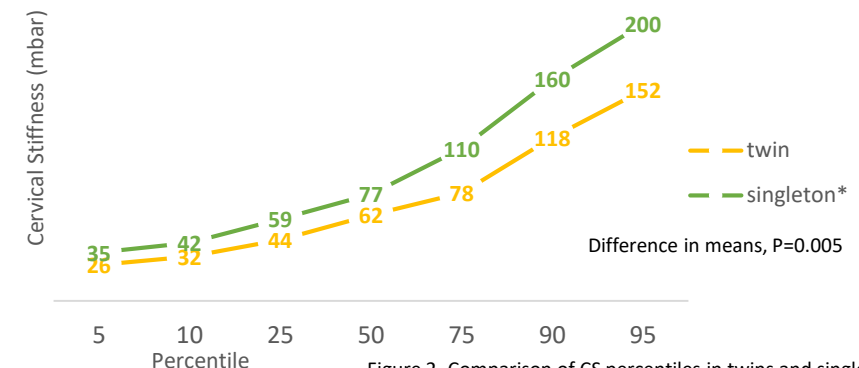


Figure 2- Comparison of CS percentiles in twins and singletons  
 \*data provided by Pregnolia<sup>2</sup>

### Cervical stiffness in twin pregnancies during second trimester

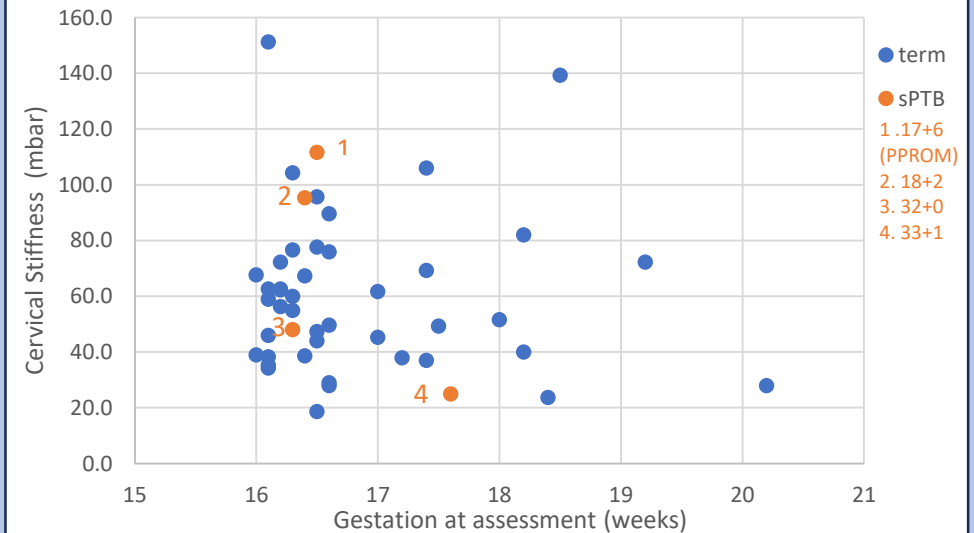


Figure 3- Distinction between term and preterm deliveries and associated second trimester cervical stiffness

	Total n=47	≥34 weeks n=43	sPTB <34 weeks, n=4	P value
Maternal Age	30 (27-34)	29 (27-33)	30 (27-34)	0.64
BMI	27 (22-31.9)	27 (21-32)	26 (24.5-27.8)	0.97
White ethnicity	40 (85%)	37(86%)	3 (75%)	0.49
Smoking	6(13%)	6 (14%)	0 (0%)	1.00
IMD decile				
Lowest 10%	23 (49%)	20 (47%)	3 (75%)	0.38
Lowest 20%	29 (62%)	25 (58%)	4 (100%)	0.28
Nulliparous	21 (45%)	19 (44%)	2 (50%)	1.00
PTB risk factors				
Prev PTB	0 (0%)	0(0%)	0 (0%)	1.00
Prev LLETZ	2 (4%)	2(5%)	0(0%)	
Chorionicity				1.00
MCDA	12 (26%)	11 (26%)	1 (25%)	
DCDA	35 (74%)	32 (75%)	3 (75%)	
Average CS (mBar)	56 (38-74)	56 (39-72)	72 (42-99)	P=0.65
Cervical Length (mm)	38.7 (35.2-42.7)	38.6 (35.2-42.2)	45.2 (32.6-47.3)	P=0.22

Data given as Median (IQR) or N (%), Mann- Witney for continuous, Fisher's exact for categorical

## Discussion

- Further data analysis of whole cohort on study completion
- Once more preterm births in cohort can do prediction analysis
- Further powered study warranted to validate initial findings and explore serial cervical stiffness measurements in this cohort.

References  
 1. Badir, S. et al. *BMC Pregnancy Childbirth* 20, 391 (2020). <https://doi.org/10.1186/s12884-020-03080-x>  
 2. Badir S et al. *Prenat Diagn.* 2013;33(8):737-41.  
 3. Wharton LK et al. *J Matern Fetal Neonatal Med.* 2023 Dec;36(2):2262081. doi: 10.1080/14767058.2023.2262081. Epub 2023 Oct 1. PMID: 37778754