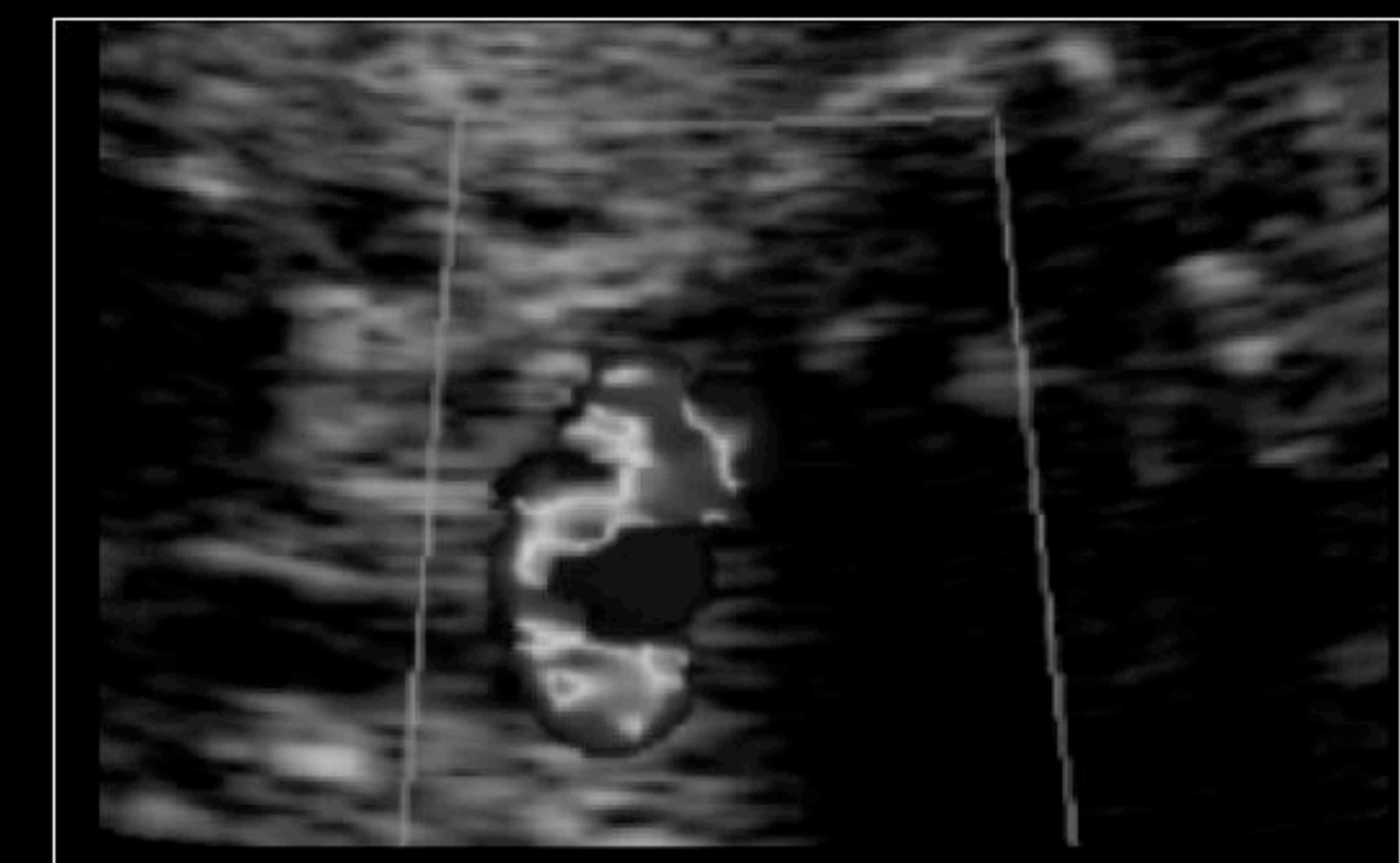


# Role of decreasing maternal ingestion of polyphenol-rich foods on fetal ductus arteriosus dynamics in normal pregnancies: an open clinical trial.

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## BASICS AND OBJECTIVES:

Reversal of fetal ductal constriction occurs after dietary maternal restriction of polyphenol-rich foods (PRF) (J Perinatol, 2011). Other clinical and experimental evidences have already corroborated the association of maternal ingestion of PRF to fetal ductal alterations, due to interference on prostaglandin synthesis. This study tested the hypothesis that normal third trimester fetuses also improve ductus arteriosus dynamics after a polyphenol-poor diet for a period superior to 2 weeks.



## METHODS:

An open clinical trial was designed. 46 fetuses with gestational age (GA)  $\geq 28$  weeks were submitted to 2 Doppler echocardiographic studies with an interval of at least 2 weeks. Systolic and diastolic velocities (SDV and DDV), pulsatility index (PI) and right to left ventricular dimensions ratio (RV/LV) were assessed. The examiners were blinded to maternal dietary habits at the first examination. After the first study, a detailed food frequency questionnaire was applied and a diet based on polyphenol-poor food ( $<30\text{mg}$  polyphenols/100mg) was recommended. A control group of 26 third trimester fetuses in which no dietary intervention was offered was submitted to the same protocol. Statistical analysis used t test for independent samples.

## RESULTS:

	<b>TOTAL 74 FETUSES</b>		
	<b>Control group 26 FETUSES</b>		<b>Intervention group 46 FETUSES</b>
Mean daily ingestion (mg/day)	1132 to 1093 (NS)		1277 to 126 ( $p<0.0001$ )
DSV (m/s)	$1.3 \pm 0.3$ to $1.4 \pm 0.4$ (NS)		$1.2 \pm 0.4$ to $0.9 \pm 0.3$ ( $p=0.018$ )
DDV (m/s)	$0.20 \pm 0.1$ to $0.22 \pm 0.1$ (NS)		$0.21 \pm 0.1$ to $0.18 \pm 0.1$ ( $p=0.016$ )
RV/LV	$1.2 \pm 0.3$ to $1.3 \pm 0.2$ (NS)		$1.3 \pm 0.2$ to $1.1 \pm 0.2$ ( $p=0.004$ )
PI	$2.2 \pm 0.2$ to $2.3 \pm 0.4$ (NS)		$2.2 \pm 0.03$ to $2.4 \pm 0$ ( $p=0.04$ )

## • CONCLUSIONS:

**The oriented restriction of third trimester maternal ingestion of polyphenol-rich foods for a period of 2 weeks or more improve fetal ductus arteriosus flow dynamics and right ventricular dimensions.**