

CIR: cap a on anem?

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Cribat/Maneig CIR

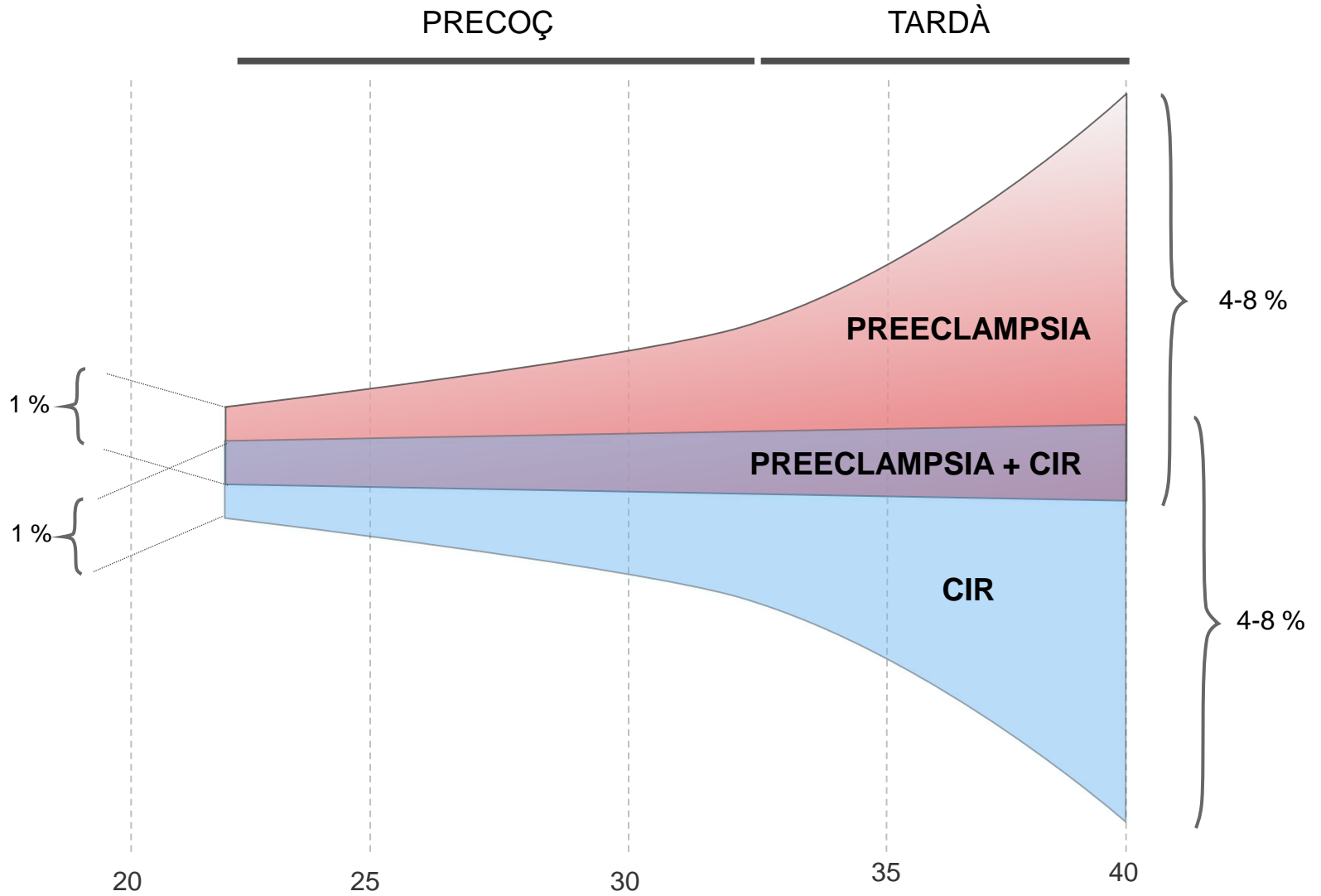
Conseqüències curt i llarg termini

Tractament/prevenció CIR

Cribat/Maneig CIR

Conseqüències curt i llarg termini

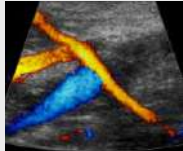
Tractament/prevenció CIR



EARLY-ONSET

LATE-ONSET

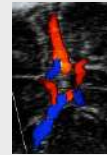
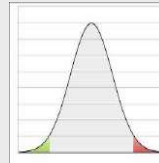
FIRST TRIMESTER



EARLY PE/IUGR

DR 90%
(FPR 10%)

THIRD TRIMESTER



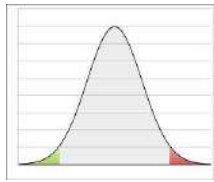
LATE PE/IUGR

DR 70-80%
(FPR 10%)

4-8 %

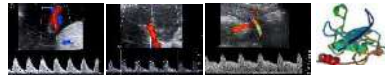
4-8 %

Integrated management: one protocol is useful for early and late-onset IUGR



EFW < p10

EFW < p3 / CPR / UtA / PIGF



low-risk SGA

40w (/2w)

FGR

- I → 37w (/1w)
- II → 34w (/2-3d)
- III → 30w (/1d)
- IV → any time

FetalID	
Gestational	Pre-eclampsia 1T
Harris	Anemia
Doppler	Fetal Growth
GA by CRL 35 weeks 4 days	
LMP by CRL 13/5/2014	
EFW (G): 2100	Percentile: 6
Gender: <input checked="" type="radio"/> Female <input type="radio"/> Male	

UA Doppler PI:	
0.90	Percentile: 46
UA Diastolic flow Present	
MCA Doppler PI: 2.1 Percentile: 81	
UtA Right Doppler: 0.90	
UtA Left Doppler: 0.67	
Calculate	
CPR (Percentile: 59) 2.33	Mean UL A (Percentile: 88) 0.865

Google search:
fetal medicine barcelona calculators

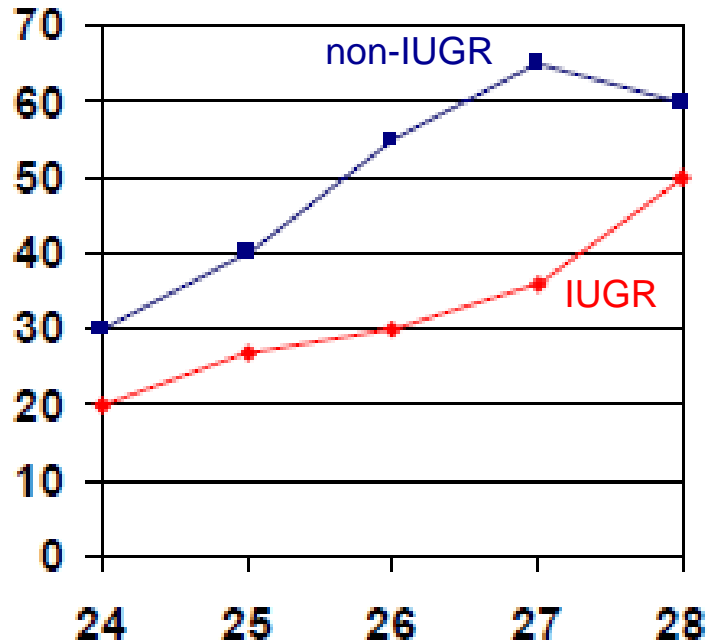
Maneig CIR

Conseqüències curt i llarg termini

Tractament/prevenció CIR

Impact of IUGR on mortality

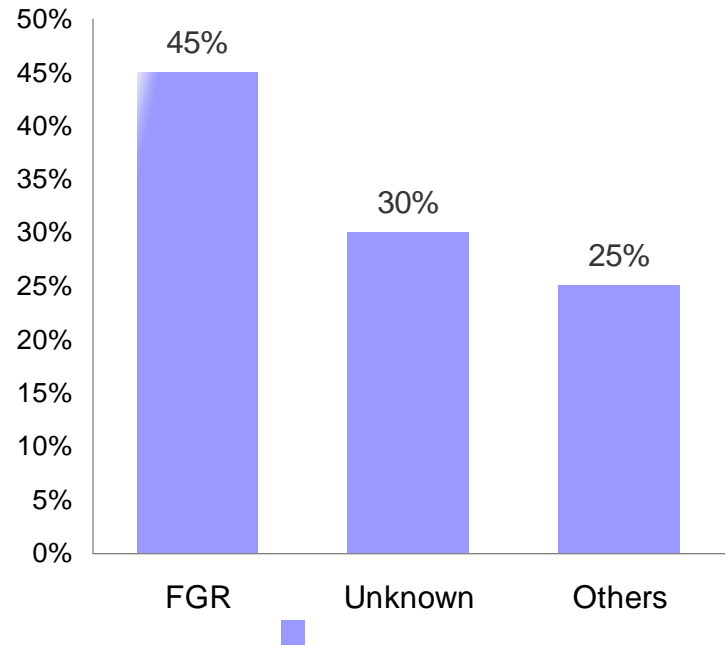
INTACT SURVIVAL EARLY IUGR



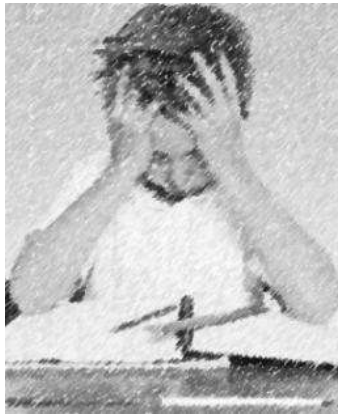
Intact survival >30%
only if 26wks or 600g



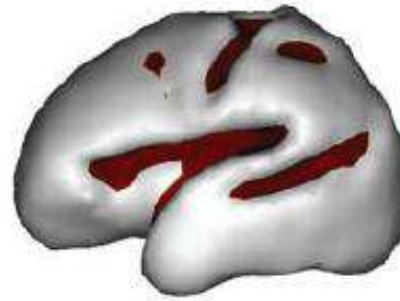
IMPACT OF NON-DETECTED IUGR ON LATE FETAL MORTALITY



Impact of IUGR on neurodevelopment



singleton
S, 192cm²
SI, 0.043

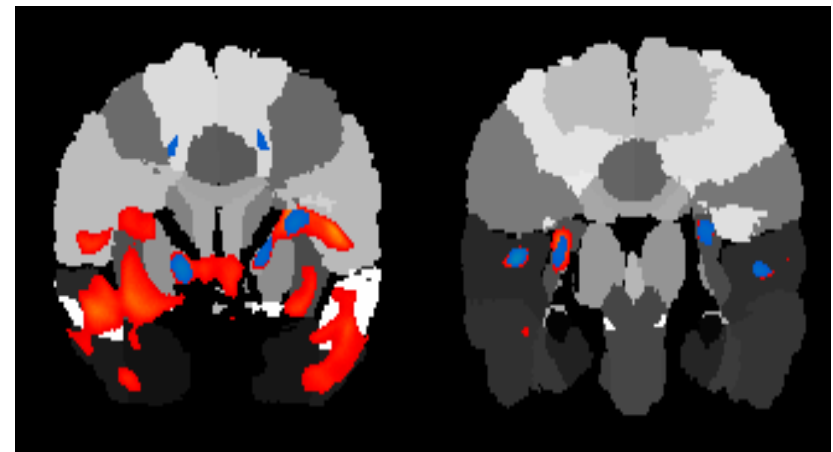
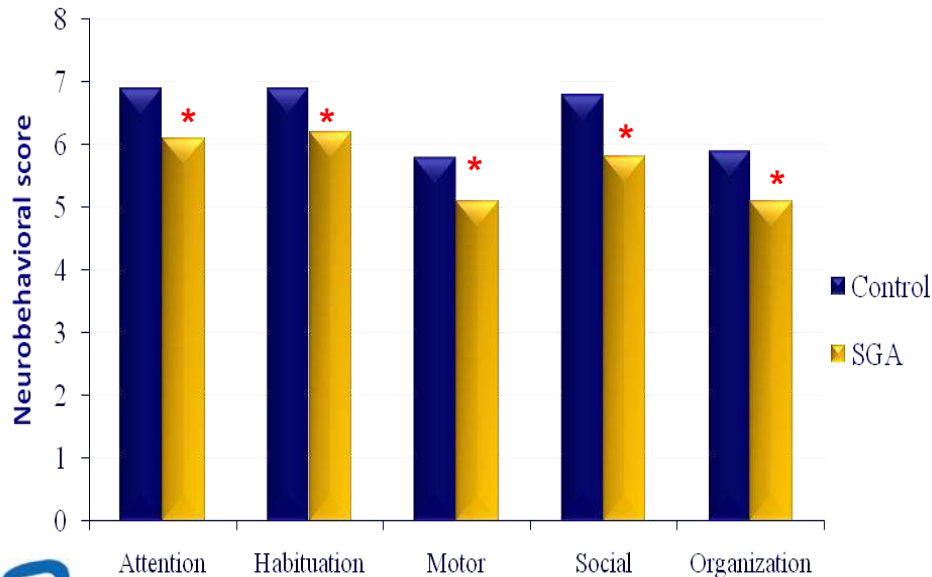


IUGR
S, 189cm²
SI, 0.126



Suboptimal neurodevelopment

attention deficit
cognitive deficits
autism

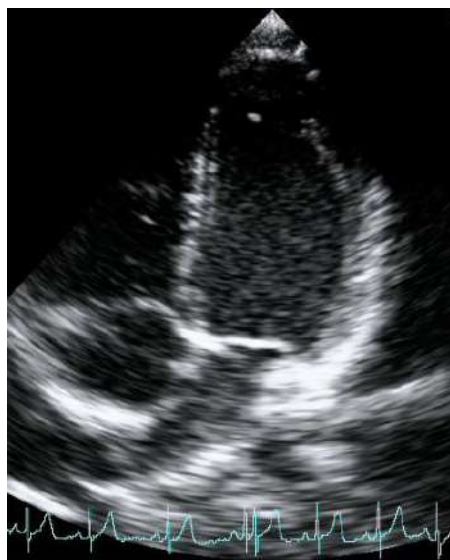


Impact of IUGR on cardiovascular health

**fetal
cardiovascular
remodeling**

globular heart
↓ longitudinal function
↓ stroke volume

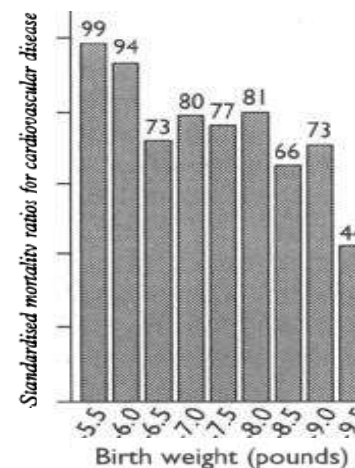
control



IUGR

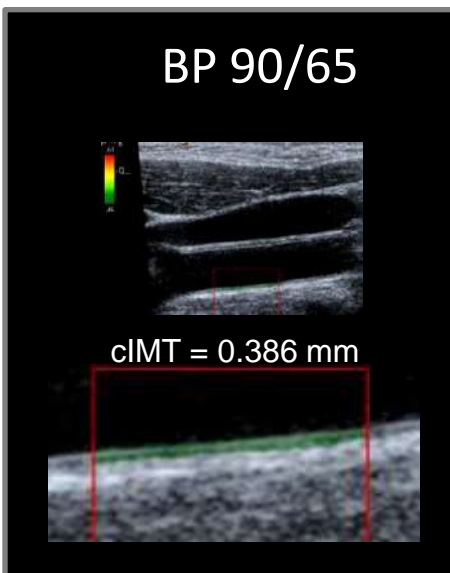


**Increased long-term
cardiovascular risk**

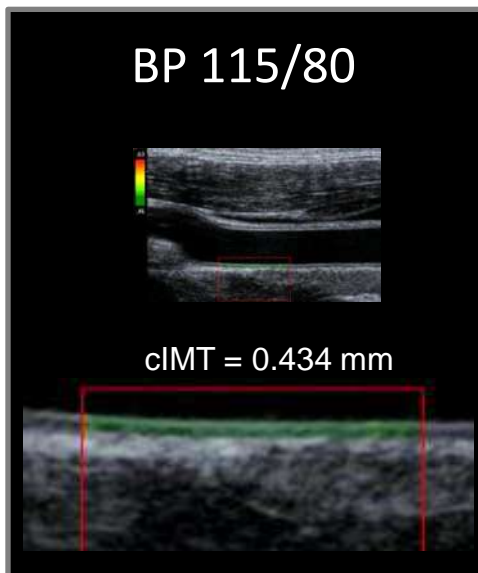


Pre-hypertension
Pre-atherosclerosis

BP 90/65



BP 115/80



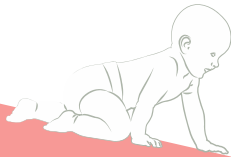
FETUS

- Remodeled hearts
- Increased IMT
- Abnormal – atherogenic lipid profile
- Loss of Nephrons



CHILD

- Remodeled hearts
- Increased blood pressure
- Increased IMT



YOUNG

- Remodeled hearts
- Increased blood pressure
- Increased IMT
- Glomerular proteinuria



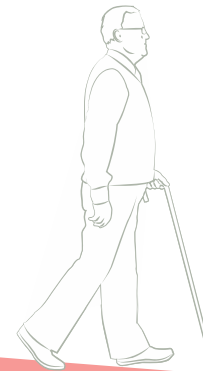
MATURE

- Increased blood pressure
- Increased risk for cardiovascular disease and mortality



OLD

- Increased risk for cardiovascular disease and mortality



IMPACT OF FETAL GROWTH RESTRICTION

Adult susceptibility

-  Tobacco
-  High fat diet
-  Physical activity
-  Stress

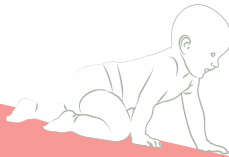
FETUS

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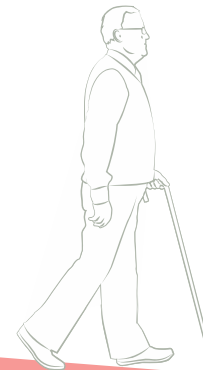
MATURE

- Increased blood pressure
- Increased risk for cardiovascular disease and mortality



OLD

- Increased risk for cardiovascular disease and mortality



IMPACT OF FETAL GROWTH RESTRICTION





OPPORTUNITIES FOR CORRECTION?

- Breastfeeding

HEART-HEALTHY LIFESTYLE

- Monitor of blood pressure
- Avoid overweight
- High intake of dietary long-chain u-3 fatty acids

Adult susceptibility

-  Tobacco
-  High fat diet
-  Physical activity
-  Stress

Maneig CIR

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Tractament/prevenció CIR

Phenomapping IUGR



TOXICS



PLACENTAL DISEASE



MALNUTRITION



STRESS



**ABNORMAL
FETAL GROWTH**

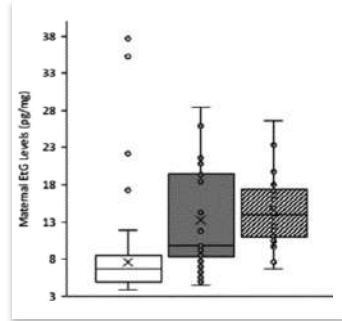
Phenomapping IUGR

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TOXICS

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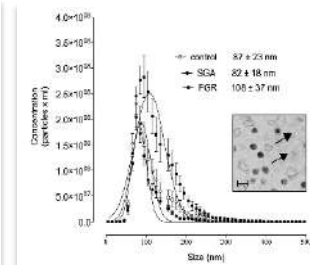
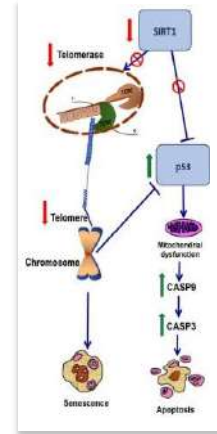
PLACENTAL DISEASE



Sabra et al. Alcohol 2018

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Miranda et al. Placenta 2018

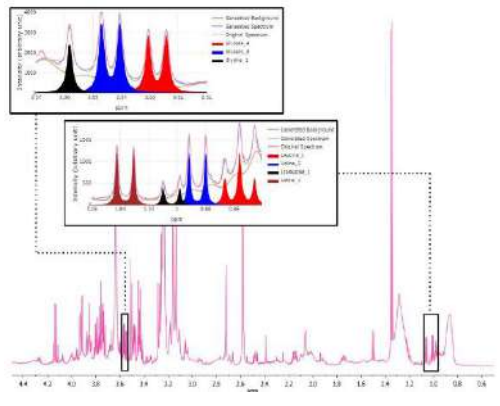
Paules et al. UOG 2019

STRESS

?

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MALNUTRITION

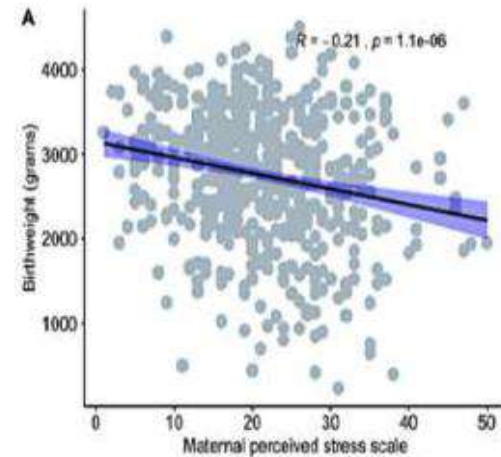
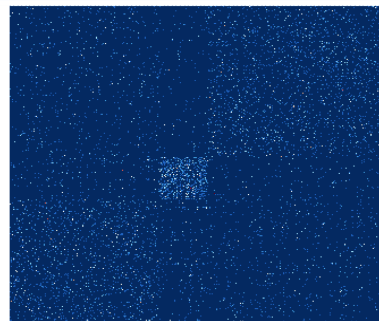


Miranda et al. Sci Report 2018

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ABNORMAL FETAL GROWTH



Miranda et al. AJOG 2019

?

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IMPACT

Improving Mothers for a better Prenatal Care Trial

RANDOMIZED CLINICAL TRIAL of 1218 pregnant women
(who have a high risk to have an IUGR fetus, RCOG guidelines)

Mediterranean Diet

n=406



No intervention

n=406



Mindfulness n=406



Main goal: reduce IUGR by 30% with a maternal life-style intervention



Thank you

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www.fetalmedbarcelona.org