

Perturbateurs endocriniens et DSD XY

**Laura Gaspari, Françoise Paris, Nicolas Kalfa, Pascal Philibert,
Laurent Maimoun, Jean Pierre Daurès et Charles Sultan**

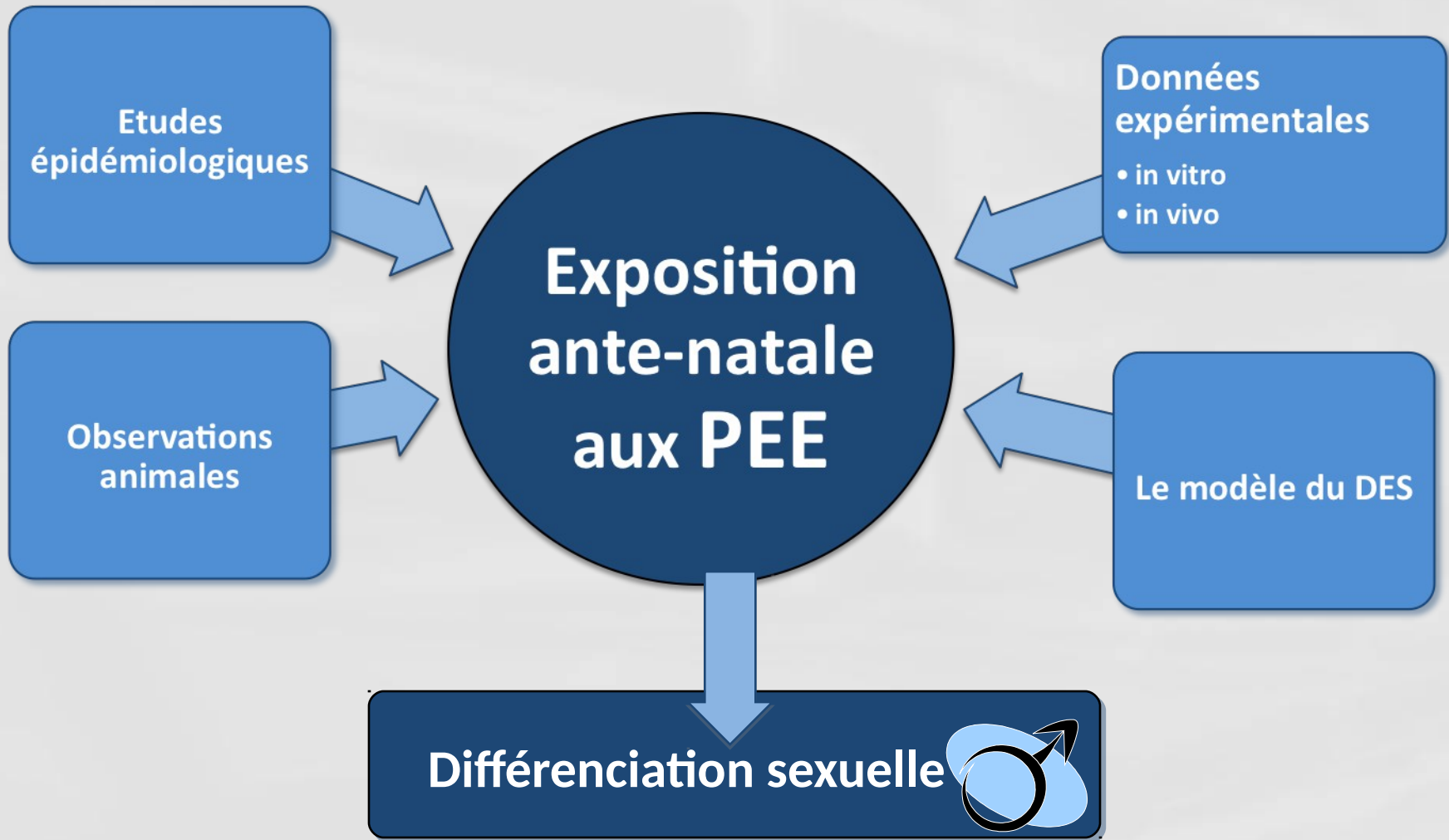
- 1. Unité d'Endocrinologie et Gynécologie Pédiatriques, Service de Pédiatrie 1, Hôpital Arnaud de Villeneuve, CHU Montpellier et UM1, France**
- 2. Service d'Hormonologie (Développement et Reproduction), Hôpital Lapeyronie, CHU Montpellier et UM1, France**
- 3. Service de Chirurgie Pédiatrique, Hôpital Lapeyronie, CHU Montpellier, Montpellier, France**
- 4. Département d'informatique Médicale du CHU de Nîmes et EA-2415 UM-1**

AES, Agadir, Maroc, 29 Juin 2013

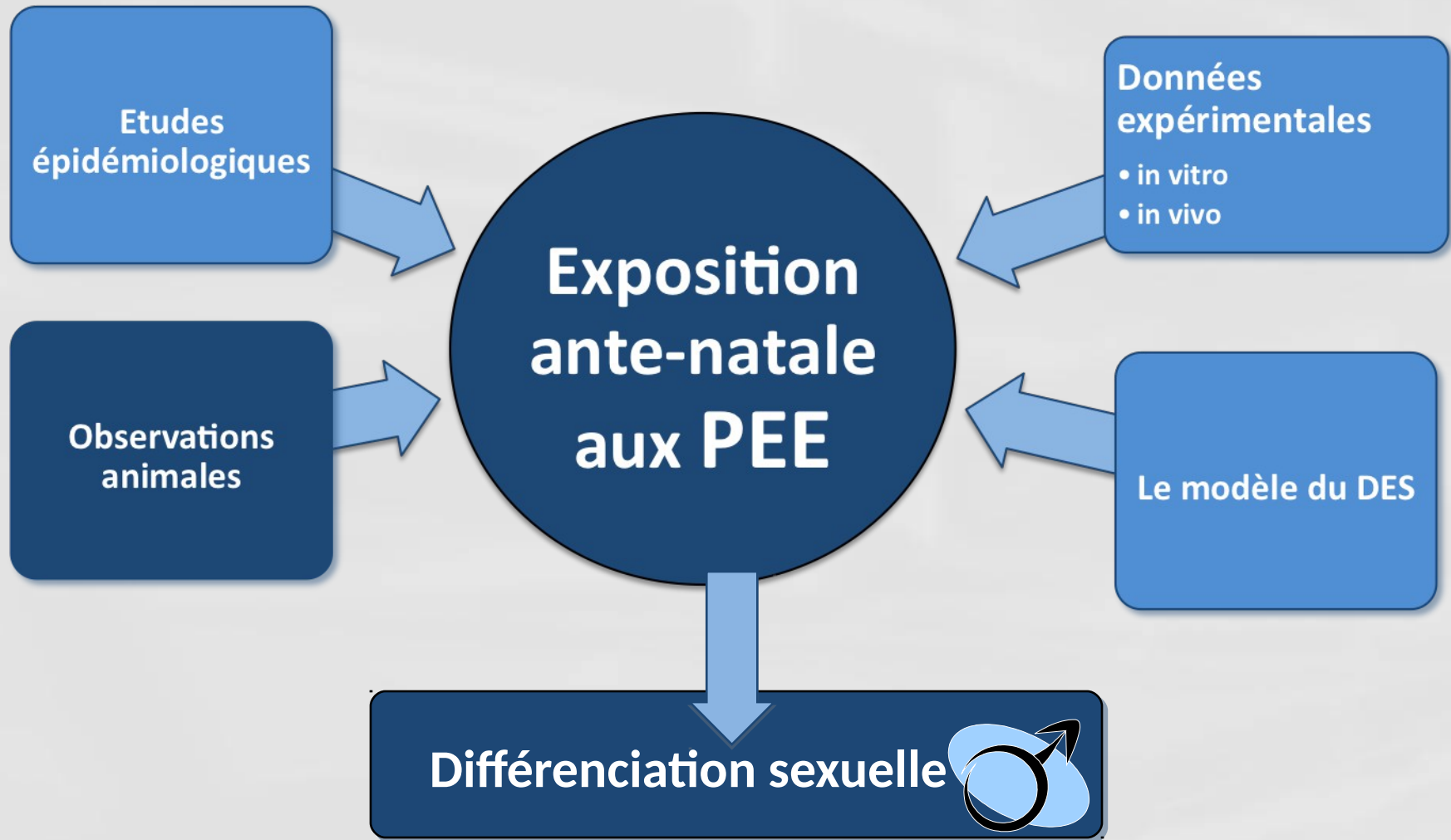
A 3D rendered orange figure, resembling a stylized person, is holding a large, light-colored rectangular sign. The sign has a thin orange border and contains the text "No potential conflict of interest" in a bold, black, sans-serif font. The figure is standing on a light-colored surface, and the background is plain white.

**No potential
conflict of
interest**

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**ABNORMAL SEXUAL DIFFERENTIATION IN BLACK BEARS
(*URSUS AMERICANUS*) AND BROWN BEARS (*URSUS ARCTOS*)**

MARC CATTET

J. Mamm., 69(4):849–852, 1988

**A FIELD EVALUATION OF MINK AND RIVER OTTER ON THE LOWER COLUMBIA
RIVER AND THE INFLUENCE OF ENVIRONMENTAL CONTAMINANTS**

Charles J. Henny, Robert A. Grove, and Olaf R. Hedstrom

1996

HYPOSPADIAS IN A POLAR BEAR (*URSUS MARITIMUS*)

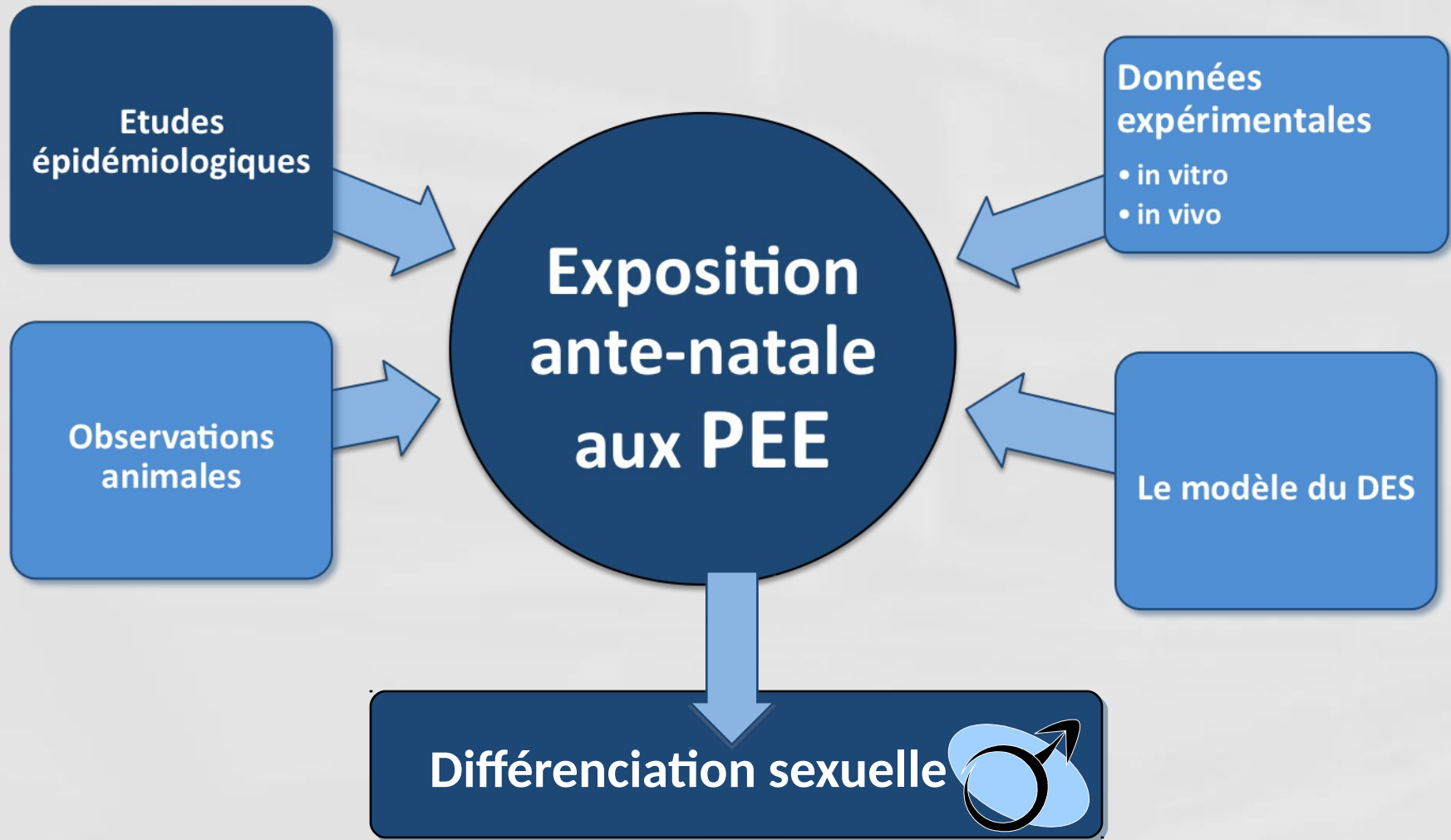
M. Andrew Stamper, D.V.M., Terry Norton, D.V.M., M.A., Gary Spodnick, D.V.M., Juan Marti, D.V.M., and Michael Loomis, D.V.M., M.A. *Journal of Zoo and Wildlife Medicine* 30(1): 141–144, 1999

**Serum Concentrations of Various Environmental Contaminants and Their
Relationship to Sex Steroid Concentrations and Phallus Size in
Juvenile American Alligators**

Arch. Environ. Contam. Toxicol. 36, 447–455 (1999)

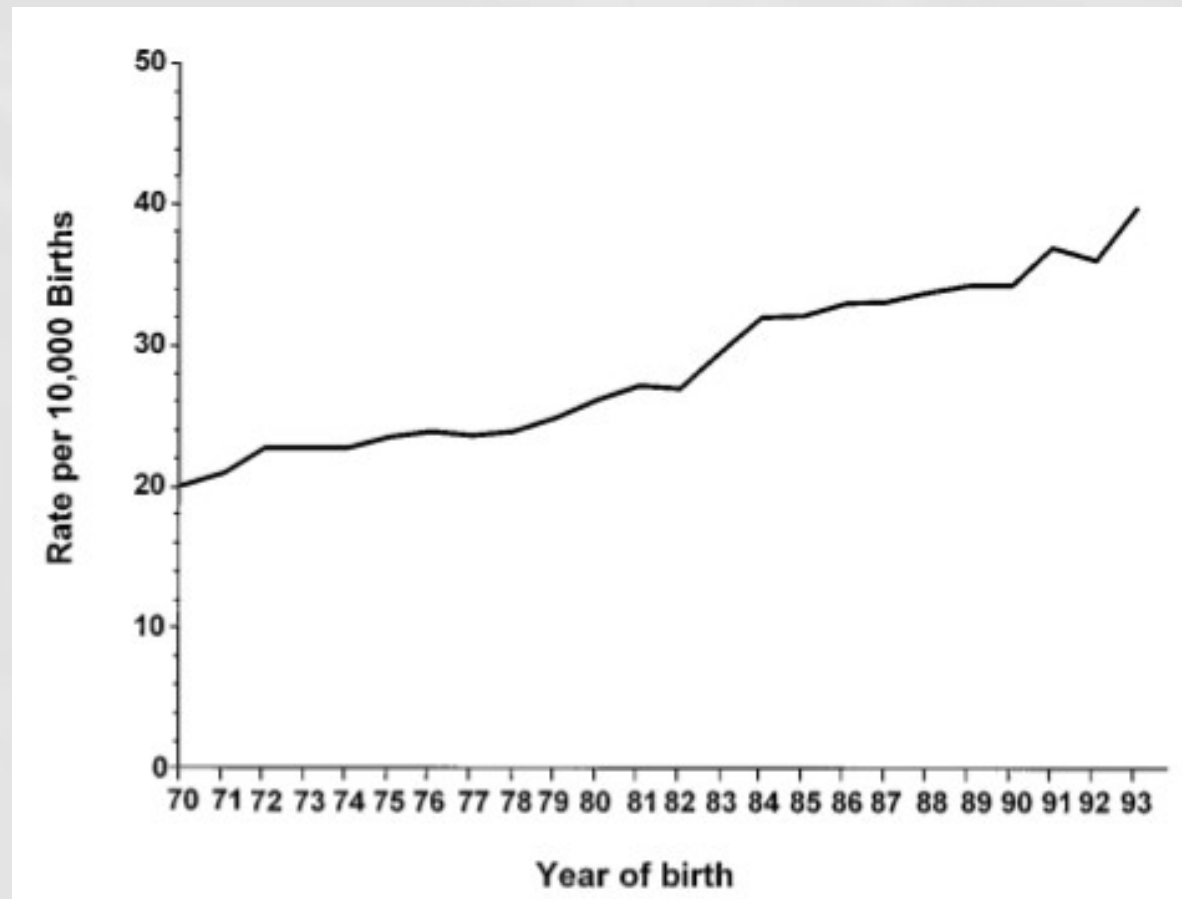
L. J. Guillette Jr.,¹ J. W. Brock,² A. A. Rooney,¹ A. R. Woodward³

Perturbateurs endocriniens et DSD XY



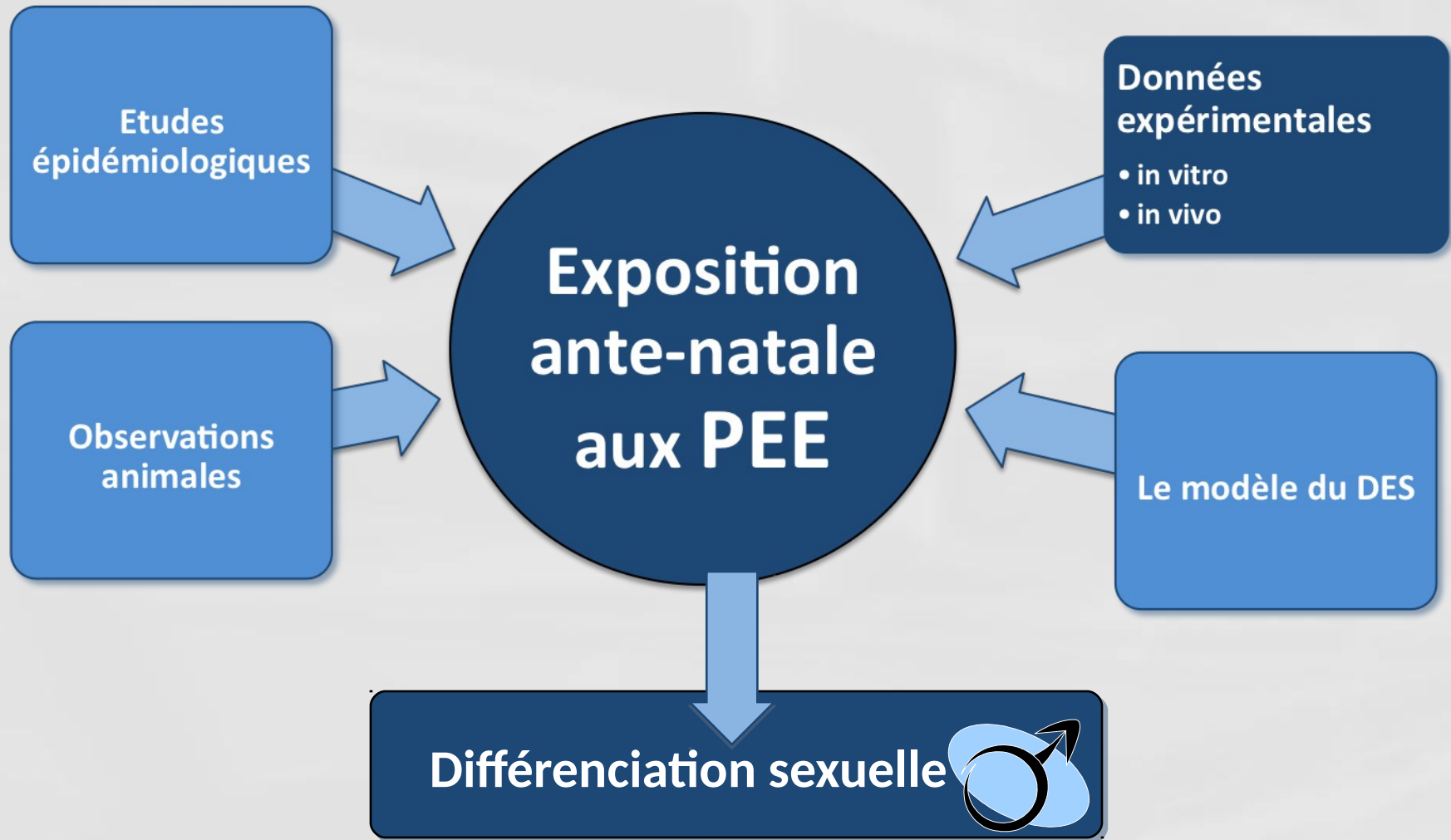
Hypospadias Trends in Two US Surveillance Systems

Leonard J. Paulozzi, MD, MPH; J. David Erickson, DDS, PhD; and Richard J. Jackson,



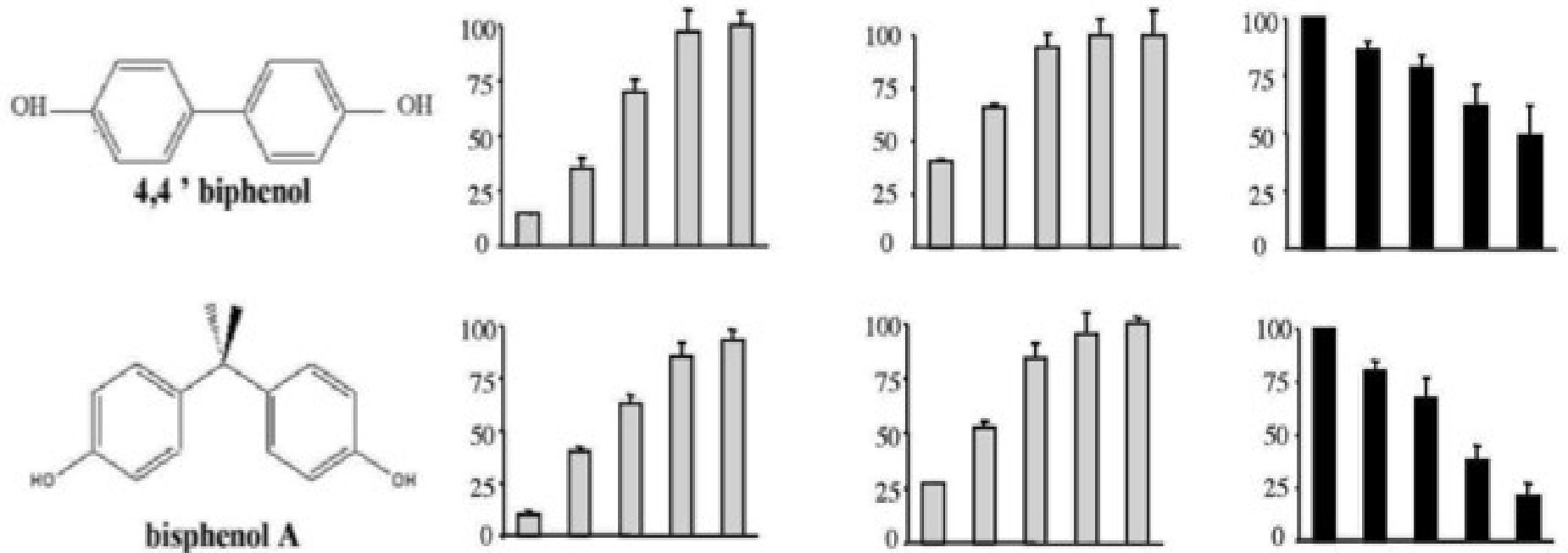
Pediatrics 1997;100;831

Perturbateurs endocriniens et DSD XY



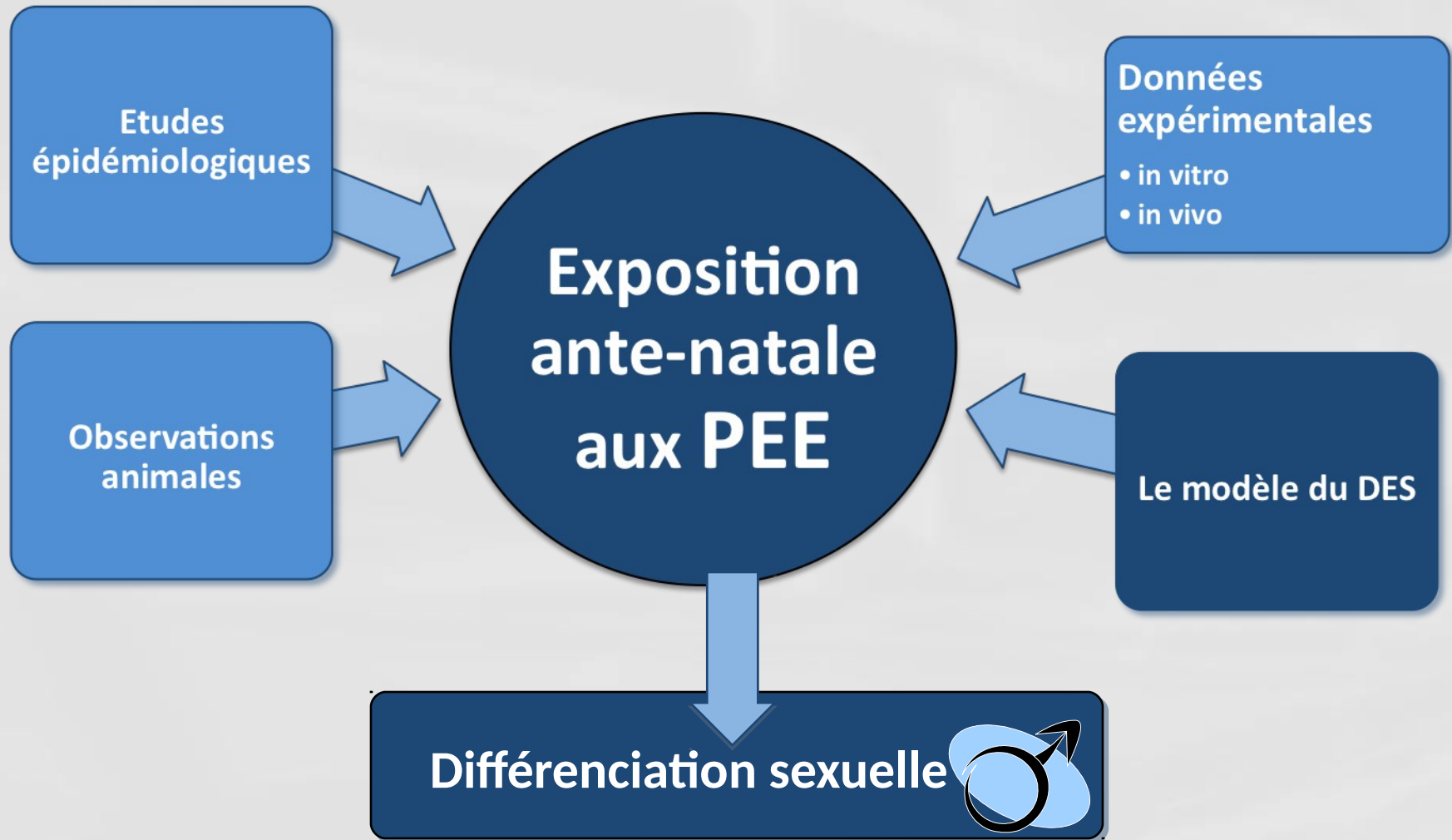
Phenylphenols, biphenols, bisphenol-A and 4-*tert*-octylphenol exhibit α and β estrogen activities and antiandrogen activity in reporter cell lines

Françoise Paris^{a,b,c}, Patrick Balaguer^a, Béatrice T  rouanne^a, Nad  ge Servant
Caroline Lacoste^a, Jean-Pierre Cravedi^d, Jean-Claude Nicolas^a, Charles Sultan^a



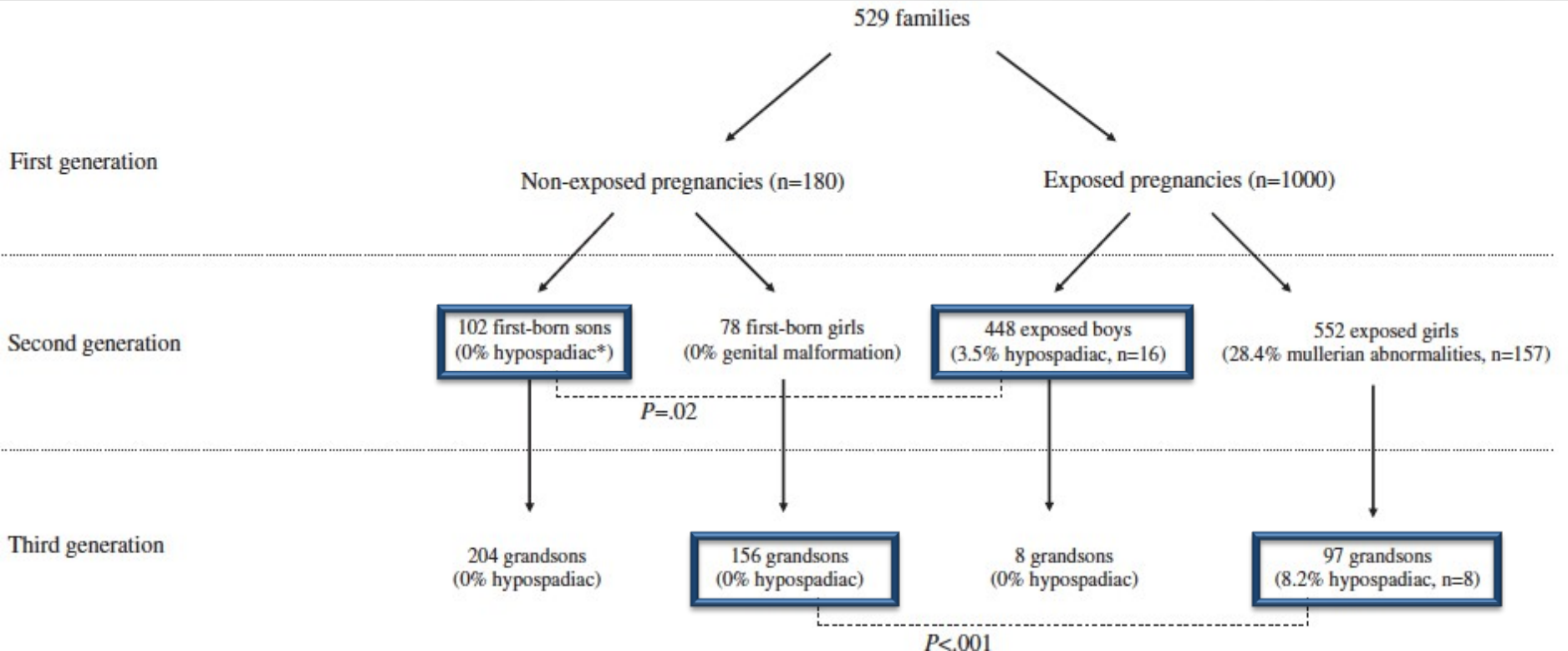
Molecular and Cellular Endocrinology 193 (2002) 43–49

Perturbateurs endocriniens et DSD XY



Prevalence of hypospadias in grandsons of women exposed to diethylstilbestrol during pregnancy: a multigenerational national cohort study

Nicolas Kalfa, Françoise Paris Marie-Odile Soyer-Gobillard, Jean-Pierre Daures, Charles Sultan



Fertility and Sterility® Vol. 95, No. 8, June 30, 2011

Effect

transgénérationnel du

→ DES

→ PEE





Malformations génitales

Baisse de la spermatogénèse

Cancer du testicule

Infertilité

N.E.Skakkebæk¹, E.Rajpert-De Meyts and K.M.Main

Human Reproduction Vol.16, No.5 pp. 972-978, 2001



Tabac, alcool

Medicaments

Phthalates

Bisphenol A

Pesticides



Tabac, alcool

Medicaments

Phthalates

Bisphenol A

Pesticides

Adverse effects of endocrine disruptors on the foetal testis development: focus on the phthalates

**René Habert^{1,2,3}, Vincent Muczynski^{1,2,3}, Abdelali Lehraiki^{1,2,3}, Romain Lambrot^{1,2,3},
Charlotte Lécureuil^{1,2,3}, Christine Levacher^{1,2,3}, Hervé Coffigny^{1,2,3},
Catherine Pairault^{1,2,3}, Delphine Moison^{1,2,3}, René Frydman⁴
and Virginie Rouiller-Fabre^{1,2,3}**

Folia Histochem Cytobiol. 2009;47(5): S67 (S67-S74)



Tabac, alcool

Medicaments

Phthalates

Bisphenol A

Pesticides

In Utero Exposure to Bisphenol-A and Anogenital Distance of Male Offspring

Maohua Miao,^{1,2} Wei Yuan,^{2*} Yonghua He,³ Zhijun Zhou,³ Jintao Wang,⁴ Ersheng Gao,² Guohong Li,⁵ and De-Kun Li^{1*}

Group	N	Mean \pm SD (mm)	Coefficient ^a	<i>p</i> value
All subjects				
Unexposed	97	87.44 (19.39)	Reference	
Father exposed only	38	81.84 (19.84)	-2.87	0.15
Mother exposed ^b	18	71.94 (8.60)	-8.11	0.003

Birth Defects Research (Part A) 91:867–872 (2011)



Tabac, alcool

Medicaments

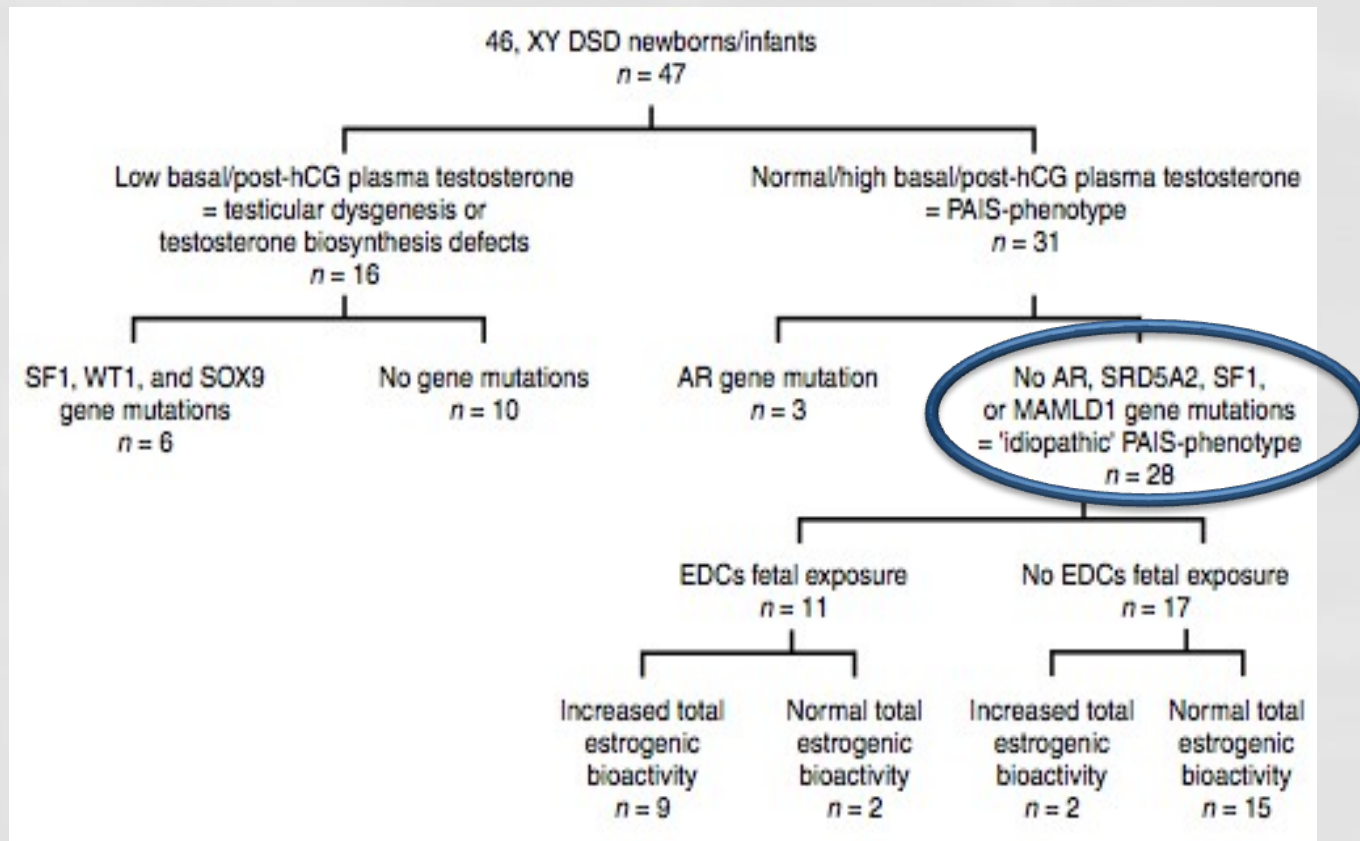
Phthalates

Bisphenol A

Pesticides

'Idiopathic' partial androgen insensitivity syndrome in 28 newborn and infant males: impact of prenatal exposure to environmental endocrine disruptor chemicals?

Laura Gaspari^{1,2}, Françoise Paris^{1,2}, Pascal Philibert², Françoise Audran², Mattea Orsini³, Nadège Servant², Laurent Maïmoun², Nicolas Kalfa^{2,4} and Charles Sultan^{1,2}



European Journal of Endocrinology (2011) 165 579–587

'Idiopathic' partial androgen insensitivity syndrome in 28 newborn and infant males: impact of prenatal exposure to environmental endocrine disruptor chemicals?

Laura Gaspari^{1,2}, Françoise Paris^{1,2}, Pascal Philibert², Françoise Audran², Mattea Orsini³, Nadège Servant², Laurent Maïmoun², Nicolas Kalfa^{2,4} and Charles Sultan^{1,2}

Patients	Age (months)	Cryptorchidism	Hypospadias	Micropenis (mm)	Testosterone basal/post-hCG (ng/ml)	Sequence		Family units' environment before/ during PFL	Mothers' occupation before/ during PFL	Fathers' occupation during fertilization	EB (pg/ml)
						<i>SRD5A2</i>	<i>MAMLD1</i>				
1	1.5	B	P	7	1.2/9.3	N	N	Gas station	Gas station attendant	Driver	2.70
2	0.1	B	P	15	0.64/4.10	N	N	Water purification station	Pharmacist	Teacher	3.26
3	7.1	L	No	20	0.10/5.36	N+V89L htz	N	Countryside	Secretary	Farmer	16.40
4	6.3	R	No	16	0.13/3.22	N+V89L htz	N	Countryside	Unemployed	Wine grower	5.40
5	6.7	No	No	20	0.16/3.80	N+A49T htz	N	Countryside	Cook	Wine grower	0.80
6	2.1	R	No	15	1.24/5.46	N	P286S/htz+N589S/htz	Countryside	Teacher	Commercial painter	27.00
7	2.5	No	P	10	0.10/5.70	N+V89L htz	N	Countryside	Tailor	Farmer	3.80
8	2.2	L	No	10	0.10/6.10	N	N	Countryside	Unemployed	Commercial painter	4.00
9	1.1	No	P	25	1.54/7.90	N	N	Countryside	Secretary	Farmer	1.67
10	7.3	No	A	20	0.16/7.38	N+V89L htz	N	Countryside	Pharmacist	Agronomist	7.60
11	9.8	No	P	20	0.10/4.50	N	N	Countryside	Unemployed	Farmer	0.50

European Journal of Endocrinology (2011) 165 579–587

THE "COCKTAIL EFFECT"

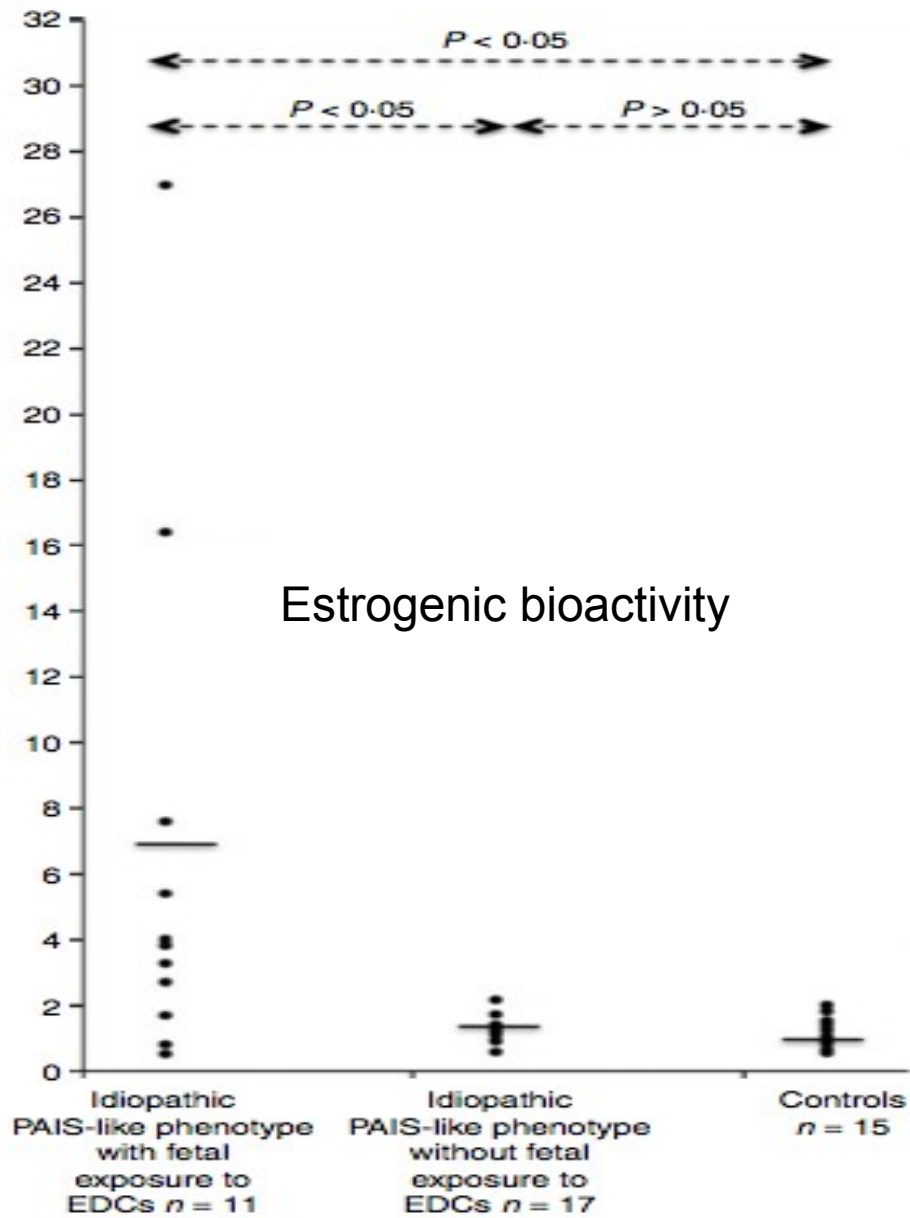


Every day we are exposed to a mixture of man-made chemicals, via the air we breathe, the food we eat and the water we drink. And even when the exposure to individual chemicals is below the level where they cause an effect by themselves, new science is now showing that together they can 'add up' and cause a potentially dangerous "cocktail effect".

A recent survey from Denmark has raised concerns that 2-year-old children may be at risk from daily combined exposure to hormone disrupters commonly found in food and the indoor environment. The survey looked at several substances, such as phthalates, parabens and bisphenol A.⁶ Similarly, a German Environment Agency study found bisphenol A in 591 out of 599 children between 3 and 14 years old and several phthalate metabolites in nearly all children.⁷

Contaminants that mimic estrogen (the female hormone), or block testosterone (the male hormone) or those that de-rail the thyroid hormone, which is responsible for orchestrating brain development, have all been found to act together.⁸

The cocktail effect means that the current process by which governments decide on safe levels, i.e. via a 'risk assessment', where single chemicals are considered separately, ignores the reality that people and wildlife are constantly exposed to many chemicals simultaneously. This process significantly underestimates the risk to our health from the real-life cocktail exposure. Scientists are therefore now urging public authorities to assess the combined risks of chemicals together.⁹



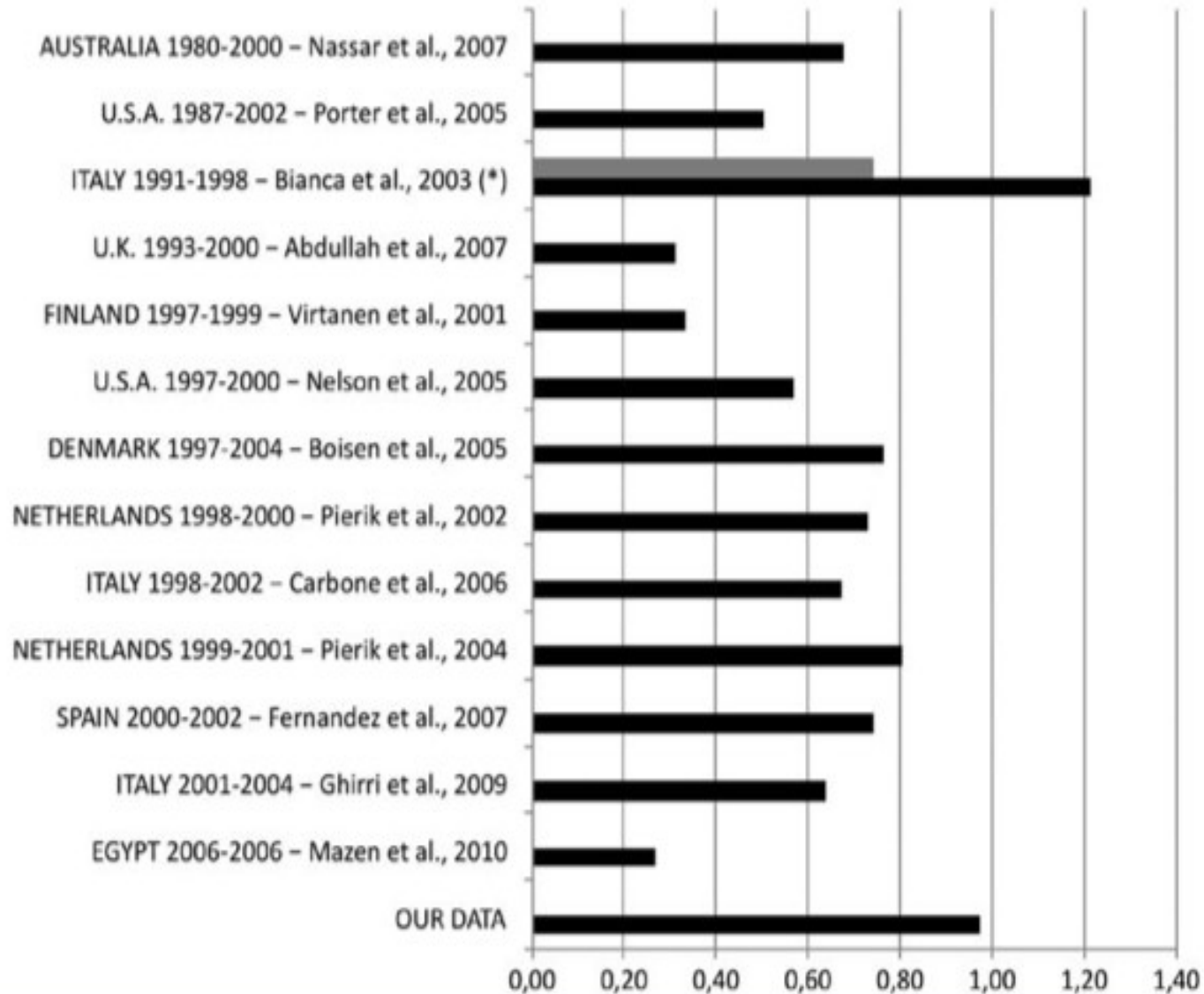
Prenatal environmental risk factors for genital malformations in a population of 1442 French male newborns: a nested case-control study

Laura Gaspari^{1,2}, Françoise Paris^{1,2}, Claire Jandel¹, Nicolas Kalfa^{2,3}, Mattea Orsini⁴, Jean Pierre Daurès⁴, and Charles Sultan^{1,2,*}

Genital abnormalities in 1442 full-term males examined at birth (within 3 days).

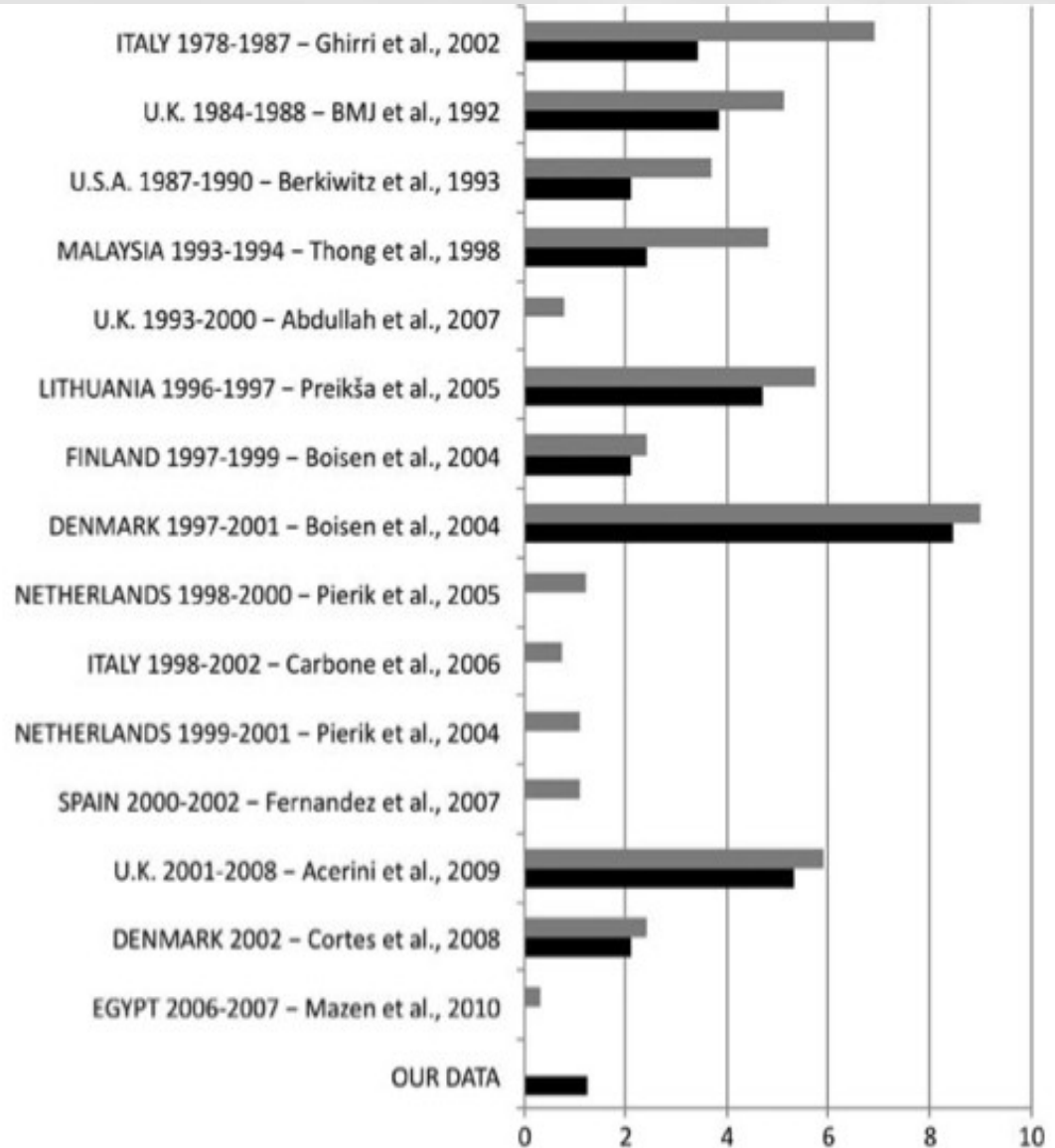
Type of anomaly	Number	Rate (%)	95% CI (%)
Cryptorchidism	18	1.25	0.64–1.76
Hypospadias	14	0.97	0.46–1.48
Micropenis	5	0.35	0.04–0.65
46,XY DSD	2	0.14	0.00–0.33
Total	39	2.70	1.87–3.54

Hum Reprod. 2011 Nov;26(11):3155-62.



birth prevalence of hypospadias (n/100 live male newborns).

Hum Reprod. 2011 Nov;26(11):3155-62.

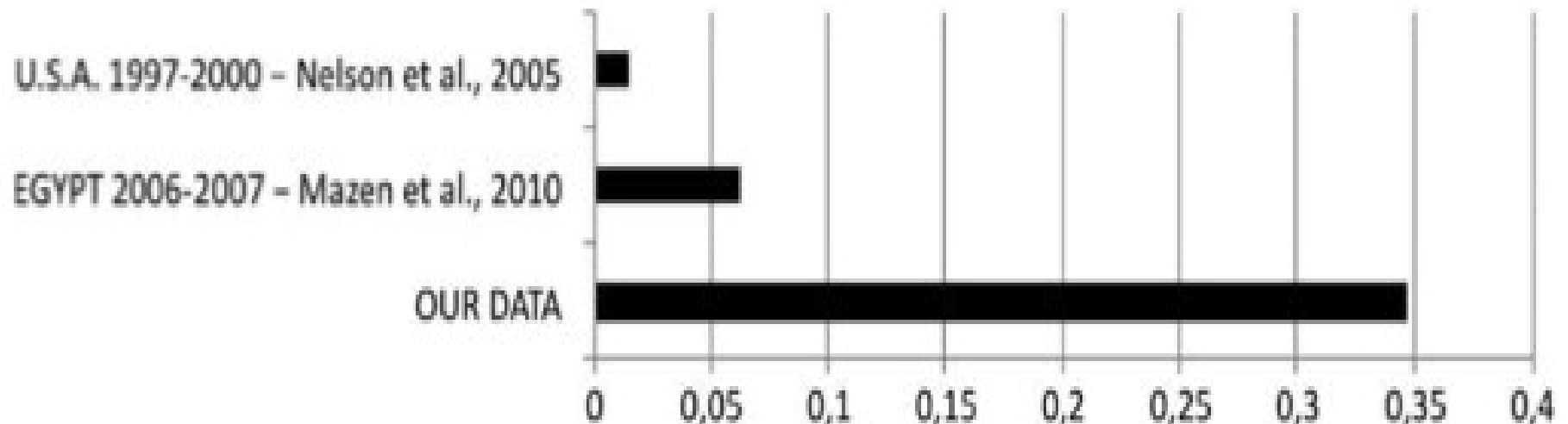


birth prevalence of cryptorchidism (n/100 live male newborns)

Hum Reprod. 2011 Nov;26(11):3155-62.

Prenatal environmental risk factors for genital malformations in a population of 1442 French male newborns: a nested case-control study

Laura Gaspari^{1,2}, Françoise Paris^{1,2}, Claire Jandel¹, Nicolas Kalfa^{2,3},
Mattea Orsini⁴, Jean Pierre Daurès⁴, and Charles Sultan^{1,2,*}



birth prevalence of micropenis (n/100 live male newborns).

Hum Reprod. 2011 Nov;26(11):3155-62.

Prenatal environmental risk factors for genital malformations in a population of 1442 French male newborns: a nested case-control study

Laura Gaspari^{1,2}, Françoise Paris^{1,2}, Claire Jandel¹, Nicolas Kalfa^{2,3},
Mattea Orsini⁴, Jean Pierre Daurès⁴, and Charles Sultan^{1,2,*}

Multivariate analysis of the association between parents' risk factors and the occurrence of male genital malformations in a nested case-control study of 115 parents-son pairs (39 cases and 76 controls).

Risk factors	OR	95% CI
Parents' occupational exposure to pesticides	4.41	1.21–16.00
Medication during pregnancy	5.87	0.93–37.00
Male genital malformations in family	7.25	0.70–74.30

Hum Reprod. 2011 Nov;26(11):3155-62.

High prevalence of micropenis in 2,710 male newborns from an intensive-use pesticide area of Northeastern Brazil

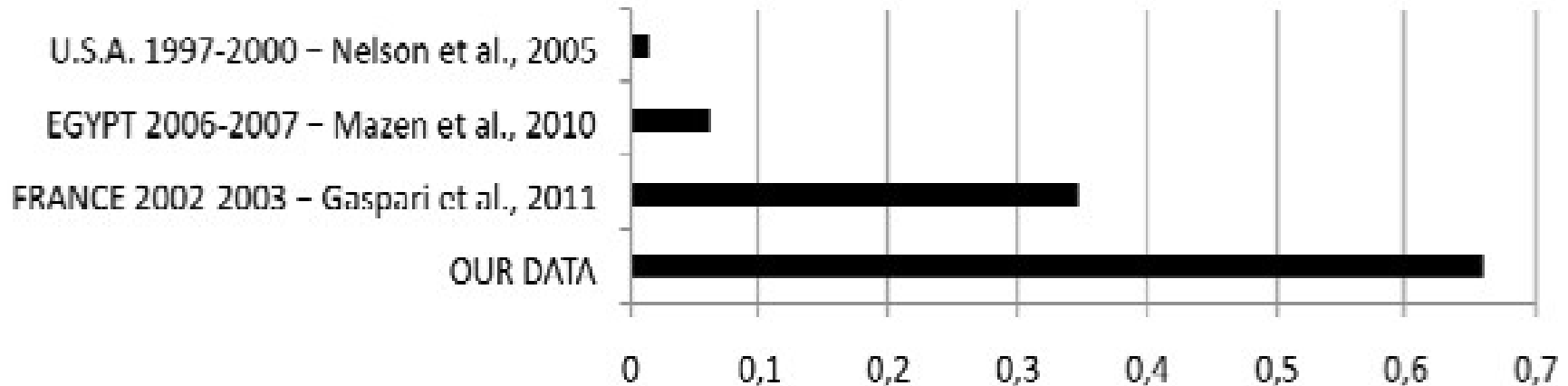
Djanete Ribeiro Sampaio*^{1,2}, Laura Gaspari*^{3,4}, Françoise Paris^{3,4}, Françoise Audran⁴, Mattea Orsini⁵, Brandão Neto J¹ and Charles Sultan^{3,4}

Type of abnormality	Number	Rate	95% CI
Cryptorchidism	23	0.85%	0.50-1.20% (0.0035)
Hypospadias	15	0.55%	0.27-0.83% (0.0028)
Micropenis	18	0.66%	0.36-0.96% (0.0030)
Total	56	2.07%	1.53-2.61% (0.0054)

Int J Androl. 2012;35(3):253-64

High prevalence of micropenis in 2710 male newborns from an intensive-use pesticide area of Northeastern Brazil

L. Gaspari, *†¹ D. R. Sampaio,‡§¹ F. Paris,*† F. Audran,† M. Orsini,¶ J. B. Neto‡ and C. Sultan*†



birth prevalence of micropenis (n/100 live male newborns).

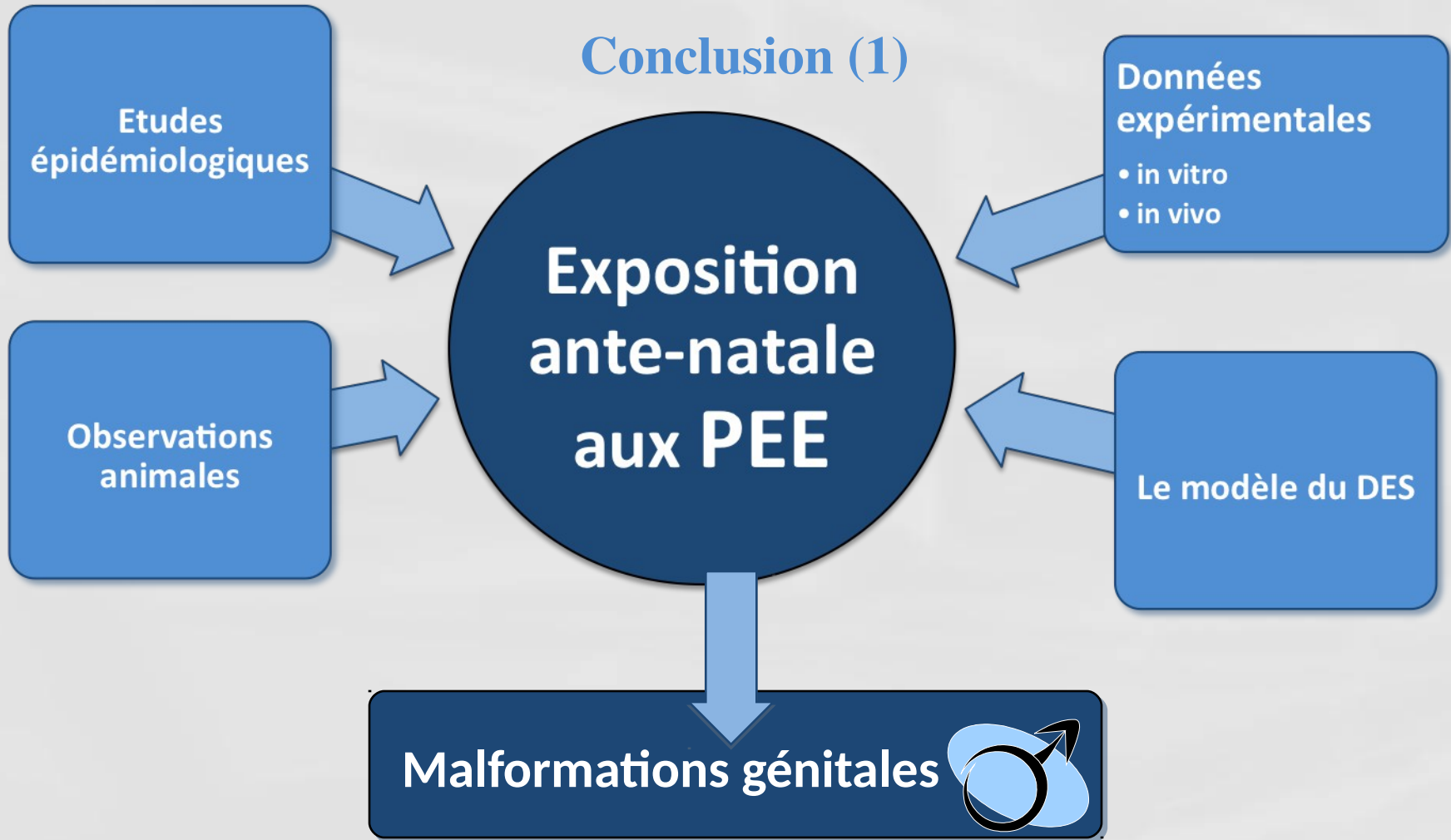
Int J Androl. 2012;35(3):253-64

Type of abnormality	Living in "favelas"	Occupational EDCs exposure		Domestic EDCs exposure [pesticides]	Drugs during pregnancy	Smoke/alcohol during pregnancy
	family unit	mothers	fathers	mothers	mothers	mothers
Cryptorchidism (n=23)	86.96% (n=20)	95.65% (n=22)	56.52% (n=13)	91.30% (n=21) [82.61% (n=19)]	13.08% (n=3)	0% (n=0)
Hypospadias (n=15)	66.67% (n=10)	66.67% (n=10)	66.67% (n=10)	100.00% (n=15) [100% (n=15)]	20.00% (n=3)	6.67% (n=1)
Micropenis (n=18)	77.78% (n=14)	72.22% (n=13)	55.56% (n=10)	88.89% (n=16) [88.89% (n=16)]	5.56% (n=1)	5.56% (n=1)
Total (n=56)	78.57% (n=44)	80.36% (n=45)	58.93% (n=33)	92.86% (n=52) [89.29% (n=50)]	10.71% (n=6)	3.58% (n=2)

Int J Androl. 2012;35(3):253-64

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Conclusion (1)



Perturbateurs endocriniens et DSD XY

Conclusion (2)

**"Attendre d'en savoir assez
pour agir en toute lumière,
c'est se condamner à l'inaction"**

Rostand

Jean

**R. AUSTIN
FREEMAN**



**THE
VANISHING
MAN**

A Dr. Thorndyke
Mystery Novel

Materiale protetto da copyright

A 3D rendered orange character with a large, smooth head and simple body, holding a rectangular sign. The sign is light beige with a thin brown border and contains the text 'Merci de votre attention' in a bold, black, sans-serif font. The character is standing on a light beige surface against a white background.

**Merci de
votre
attention**