

# III JORNADAS DE ACTUALIZACIÓN EN PATOLOGÍA GINECOLÓGICA

3-4 abril 2014 Cartagena

## EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN MURCIA Y EL ÁREA 2 DE CARTAGENA

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International Agency for Research on Cancer



# GLOBOCAN 2012: Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2012



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# GLOBOCAN 2012

ESTIMATED CANCER INCIDENCE, MORTALITY AND PREVALENCE WORLDWIDE IN 2012

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## THE GLOBOCAN PROJECT

Welcome to the **GLOBOCAN** project. The aim of the project is to provide contemporary estimates of the incidence of, mortality and prevalence from major types of cancer, at national level, for 184 countries of the world. The GLOBOCAN estimates are presented for **2012**, separately for each sex. 1-, 3- and 5-year prevalence data are available for the adult population only (ages 15 and over). Please note that:



# CÁNCER DE OVARIO: EN EL MUNDO

Region:  
World

Type:  
Incidence

Indicator:  
ASR

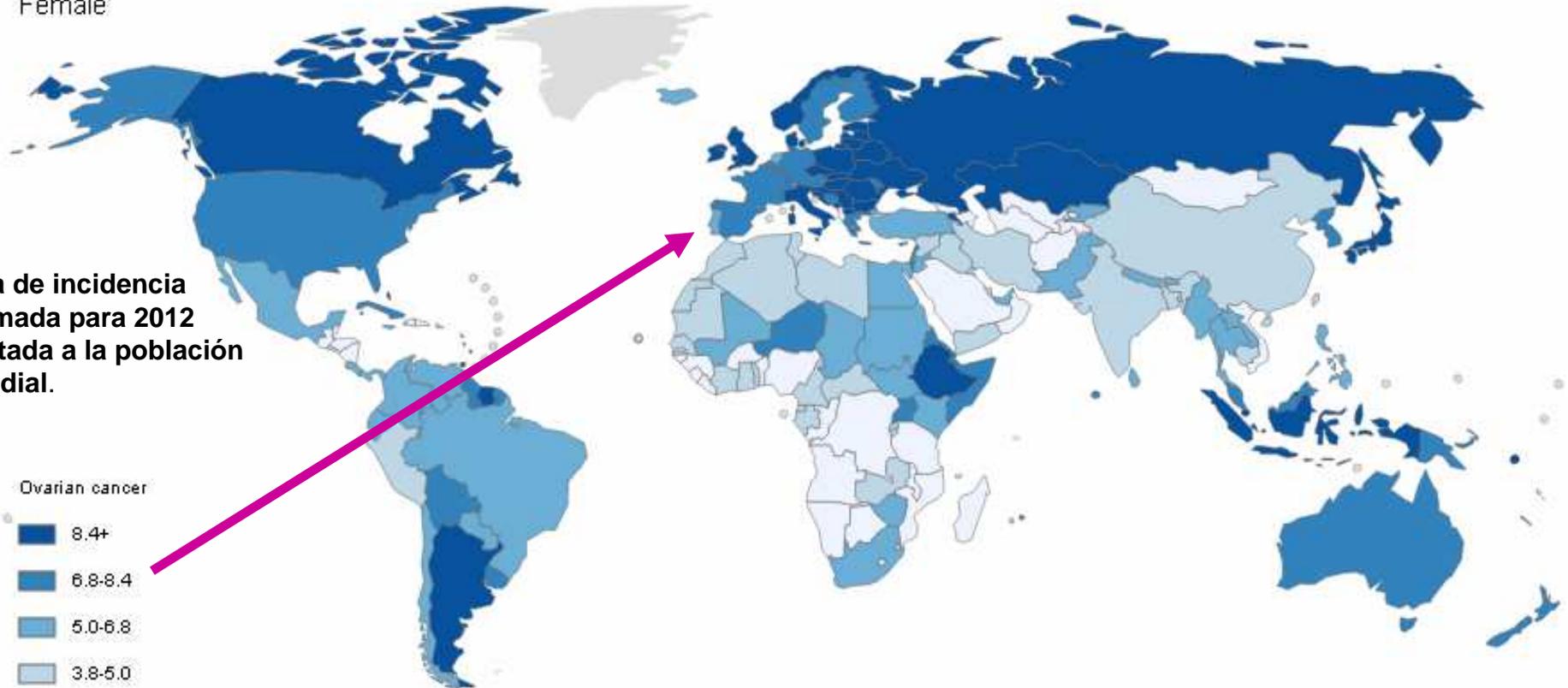
Site:  
Ovary

Sex:  
Female

Incidence ASR  
Female

Tasa de incidencia  
estimada para 2012  
ajustada a la población  
mundial.

Ovarian cancer



International Agency for Research on Cancer



# CÁNCER DE OVARIO: EN EUROPA

Region: Europe Type: Incidence Indicator: ASR Site: Ovary

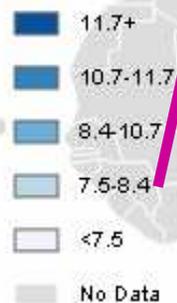
Incidence ASR

Female

Europe

Tasa de incidencia  
estimada para 2012  
ajustada a la población  
mundial.

Ovarian cancer



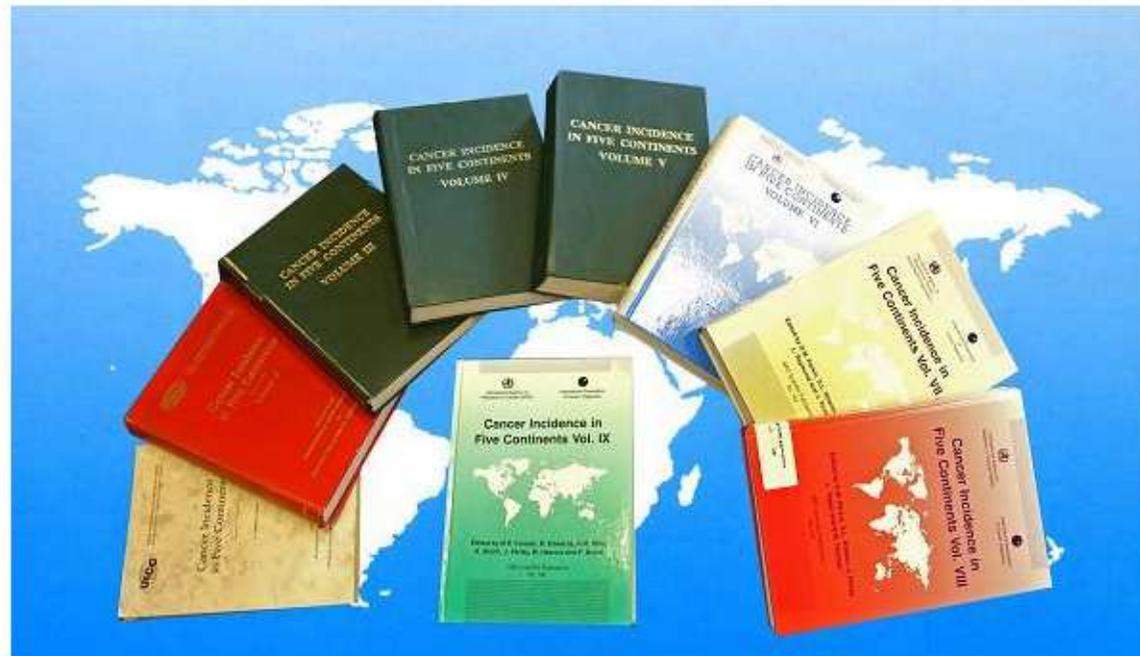
# EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II

International Agency for Research on Cancer



## CI5

Cancer Incidence in Five Continents

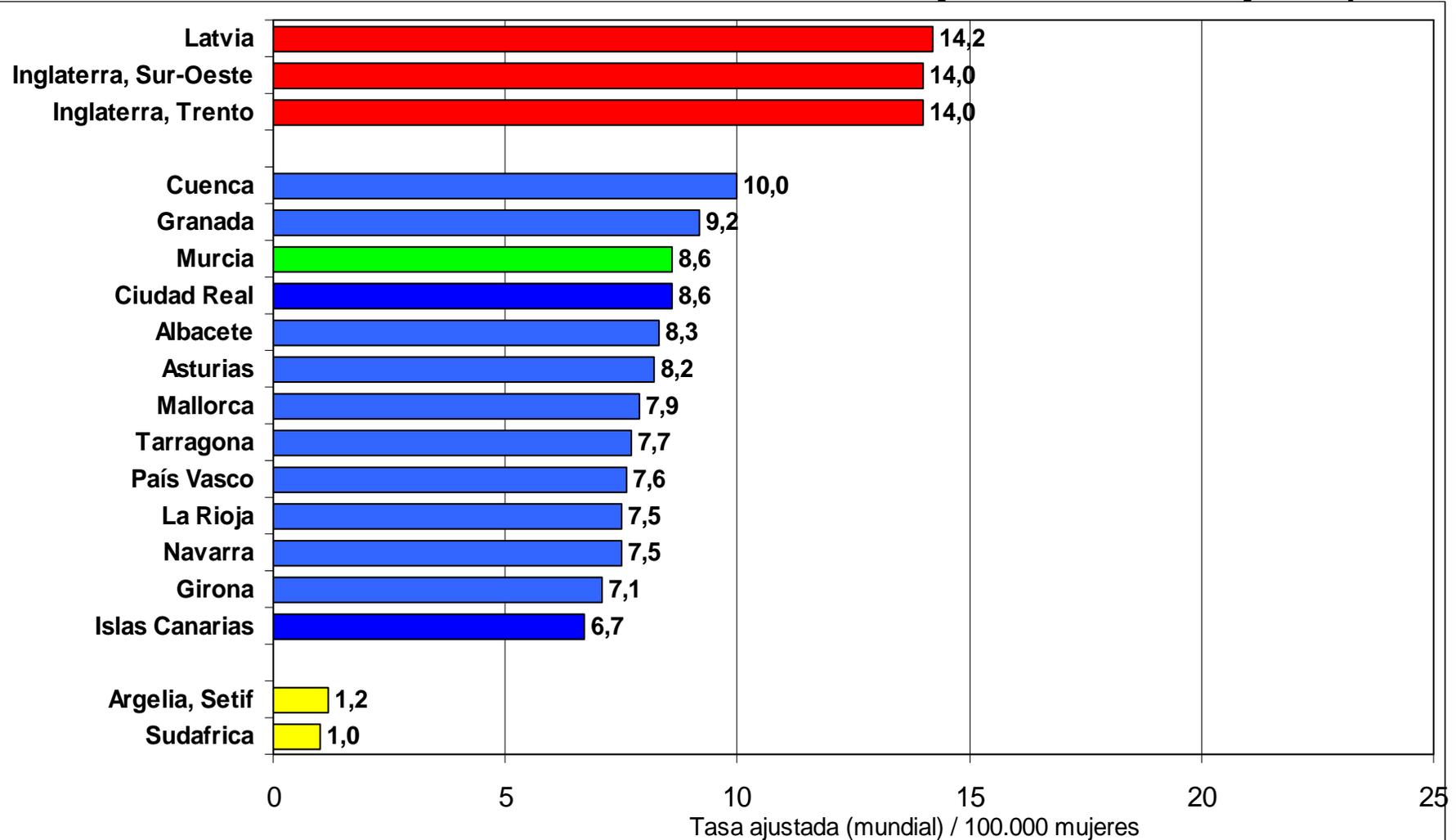


The Cancer Incidence in Five Continents (CI5) series of monographs, published every five years, has become the reference source of data on the international incidence of cancer. Detailed information on the incidence of cancer recorded by cancer registries (regional or national) worldwide in three formats:

1. CI5 I-IX which presents the data published in the nine volumes of CI5.
2. CI5plus which contains **annual** incidence for selected cancer registries published in CI5 for the longest possible period.
3. CI5-X which contains the data from Vol. X.

# CÁNCER DE OVARIO: En el Mundo, Europa y España

Tasa de incidencia de cáncer de ovario 2003-2007: máximo y mínimo mundial y europeo.



Fuente: Forman D, Bray F, Brewster DH, et al. (2013). Cancer Incidence in Five Continents, Vol. X (electronic version) Lyon, IARC. <http://ci5.iarc.fr>



## Registro de Cáncer de Murcia (desde 1981)

- Se recogen, revisan, codifican y registran TODOS los casos de cáncer (invasivo, in situ) del cualquier órgano o tejido, incluyendo incierto de vejiga, que se diagnostican de novo en residentes de la región de Murcia
- Datos de Incidencia, Mortalidad, Supervivencia, Distribución Geográfica, Estimaciones, Tendencias
- Estudios de investigación:
  - Colaboración en proyectos
    - con hospitales de la región, centros de salud
    - que implican diferentes niveles asistenciales
  - Proyectos coordinados
    - en España: REDECAN, estimaciones de cáncer en España
    - en Europa: EUROCARE, RARECARE
    - a nivel mundial: CONCORD
  - Estudios de investigación etiológica:
    - EPIC
    - MCC

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<a href="#">Preevid (preguntas clínicas)</a>

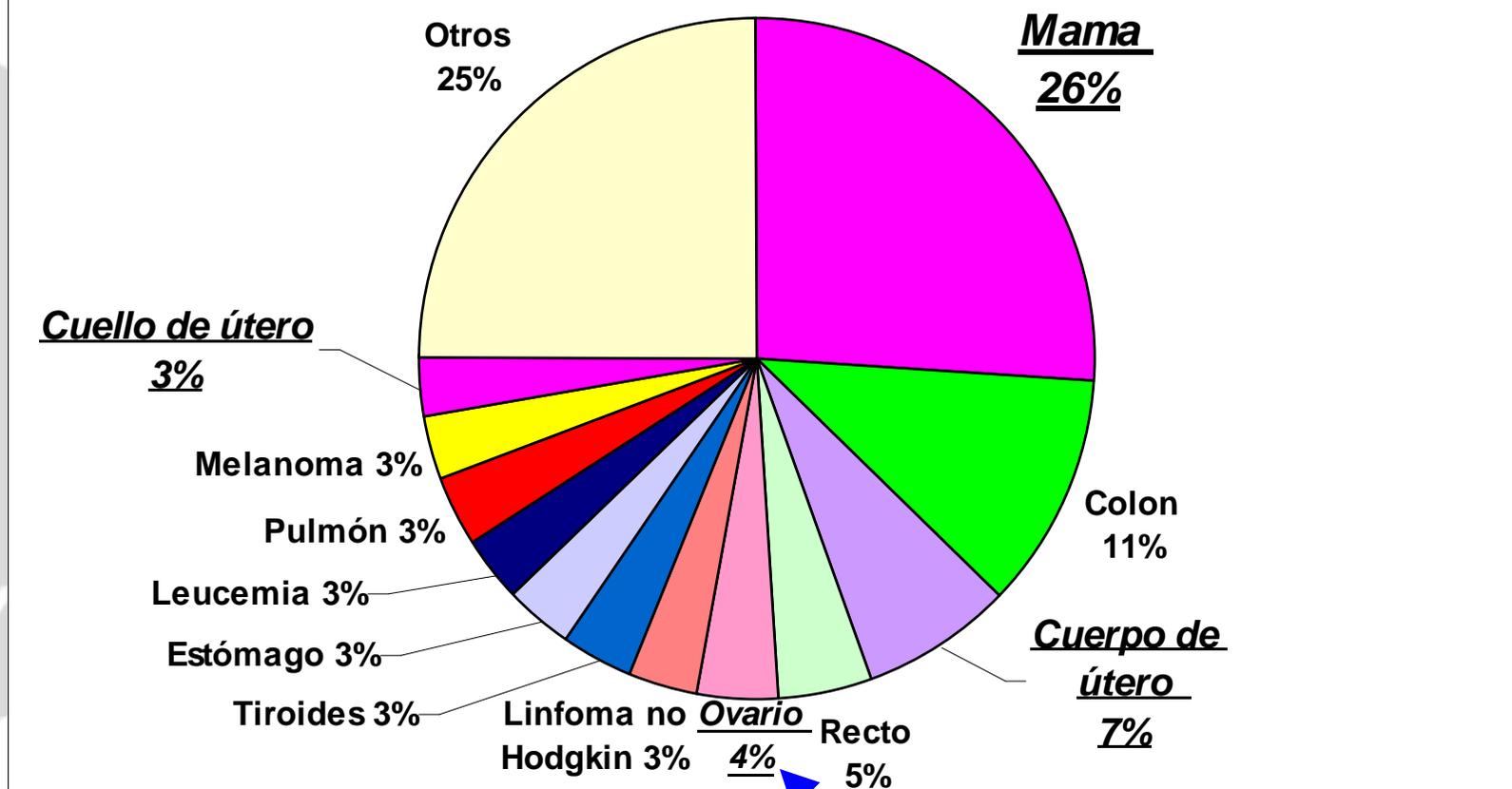
## Servicio de Epidemiología

### Registro de Cáncer de Murcia

- [Introducción](#)
- [Manual de procedimiento del Registro de Cáncer de Murcia](#)
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- [Cáncer de esófago y estómago](#)
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- [Cánceres de piel y melanoma cutáneo](#)
- [Mesotelioma maligno](#)
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- [Cáncer de cervix](#)
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- [Cáncer de testículo](#)
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- [Proyectos multicéntricos y redes de registros de cáncer](#)

## EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II

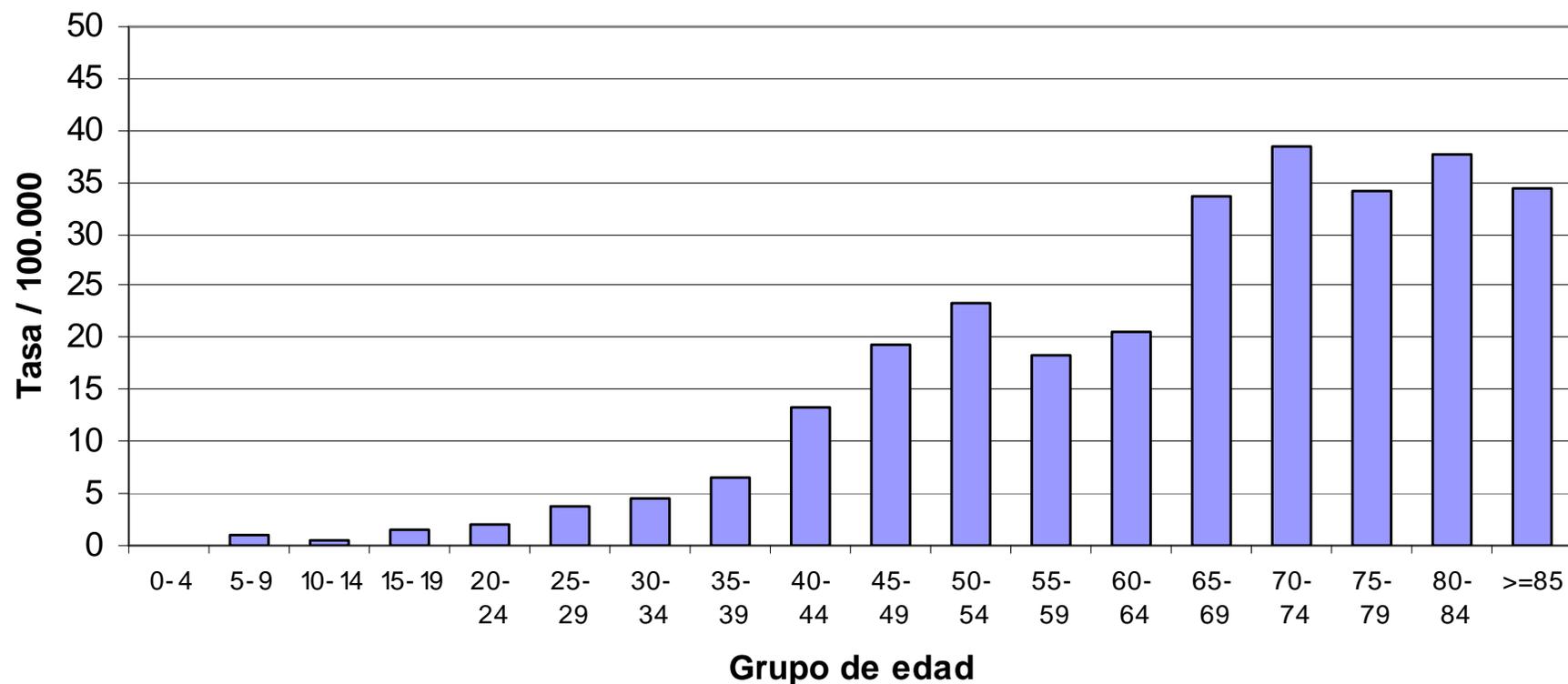
### Distribución de frecuencias del cáncer en la mujer por tipo de tumor. Región de Murcia 2003-2007



[www.murciasalud.es/epidemiologia](http://www.murciasalud.es/epidemiologia)



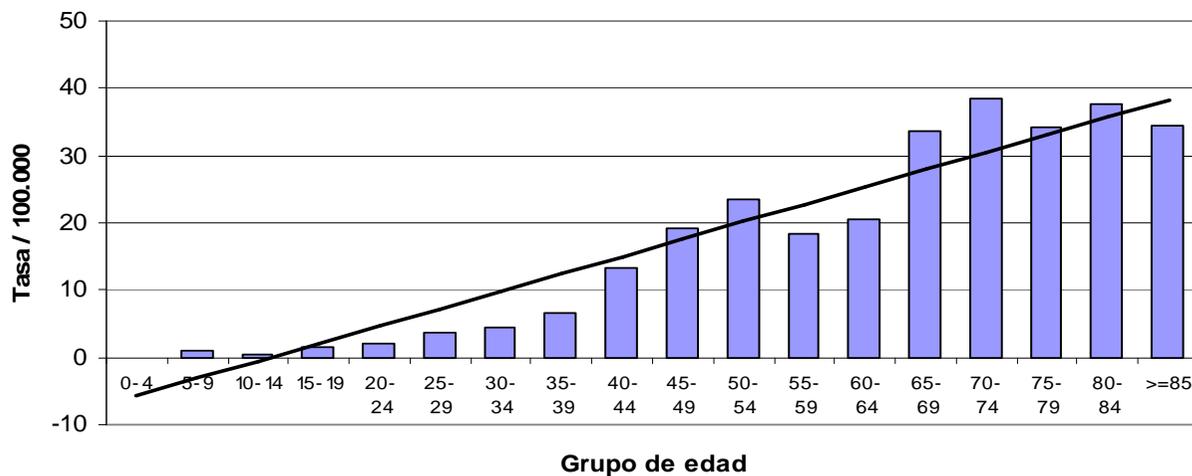
## Tasa de incidencia cáncer de ovario por grupo de edad. Región de Murcia 2003-2007



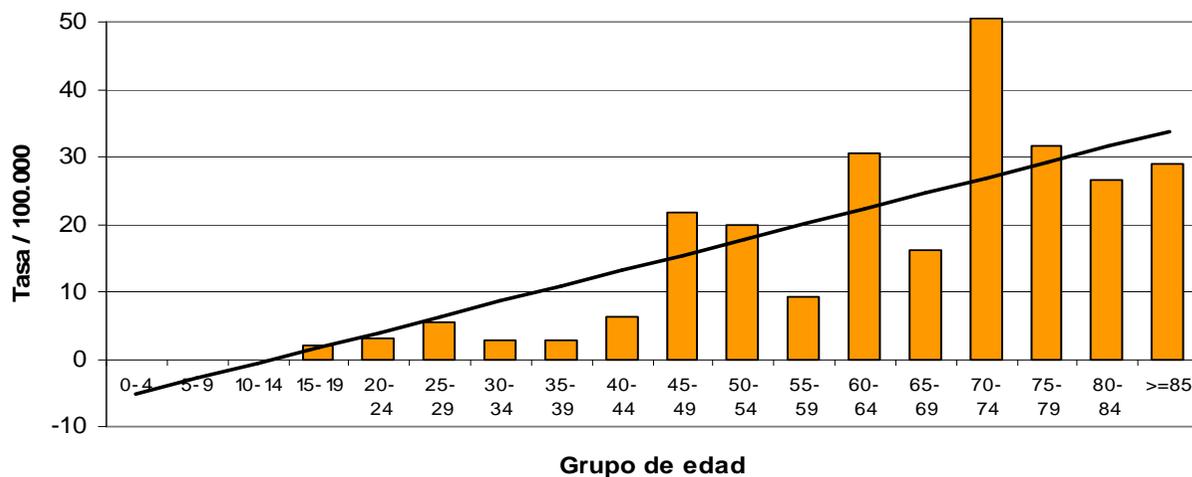
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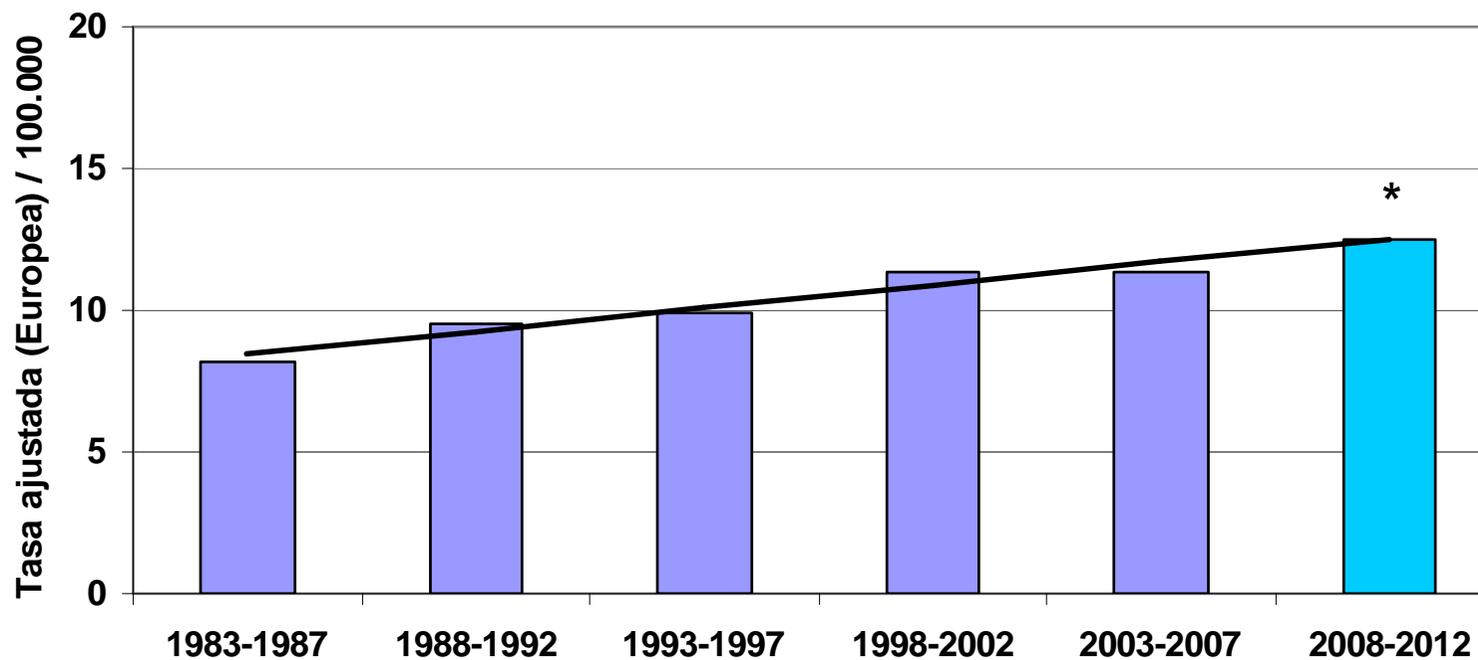


### Tasa de incidencia cáncer de ovario por grupo de edad. Área II 2003-2007





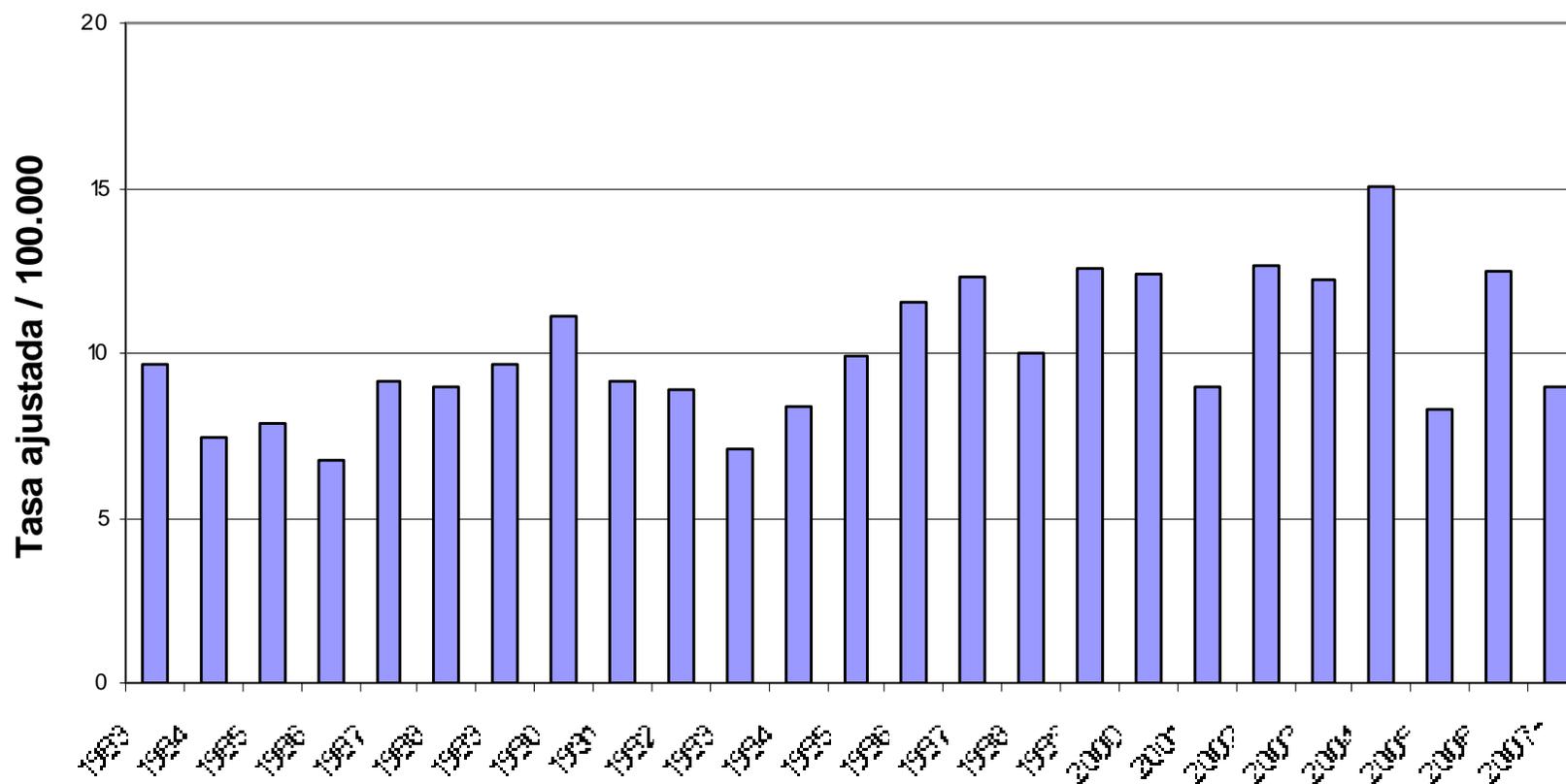
## Tasa de incidencia de cáncer de ovario por periodo. Región de Murcia 1983-2012



\* La tasa de 2008-2014 es estimada.

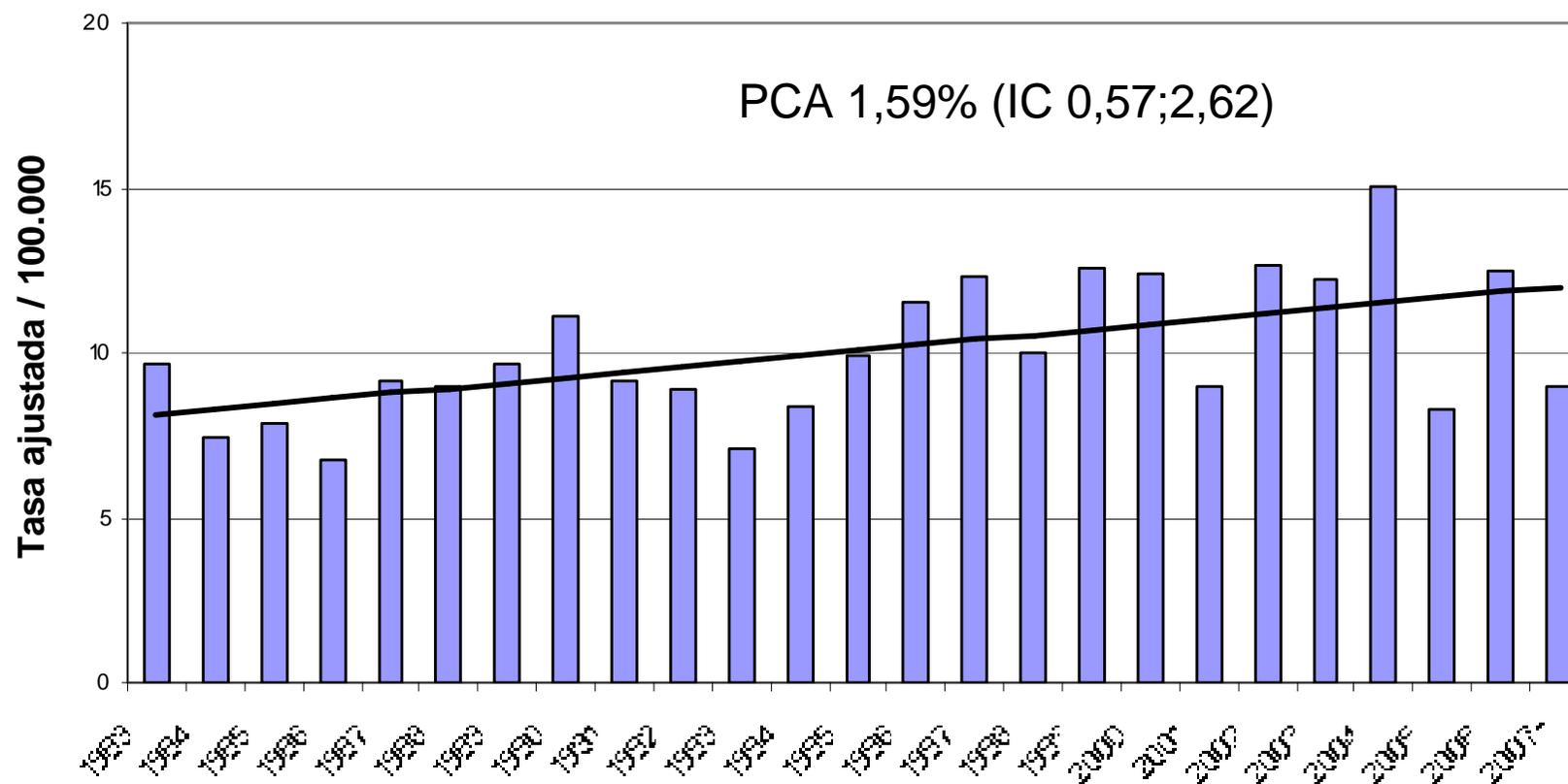


## Tasa de incidencia ajustada de cáncer de ovario por año. Región de Murcia 1983-2007



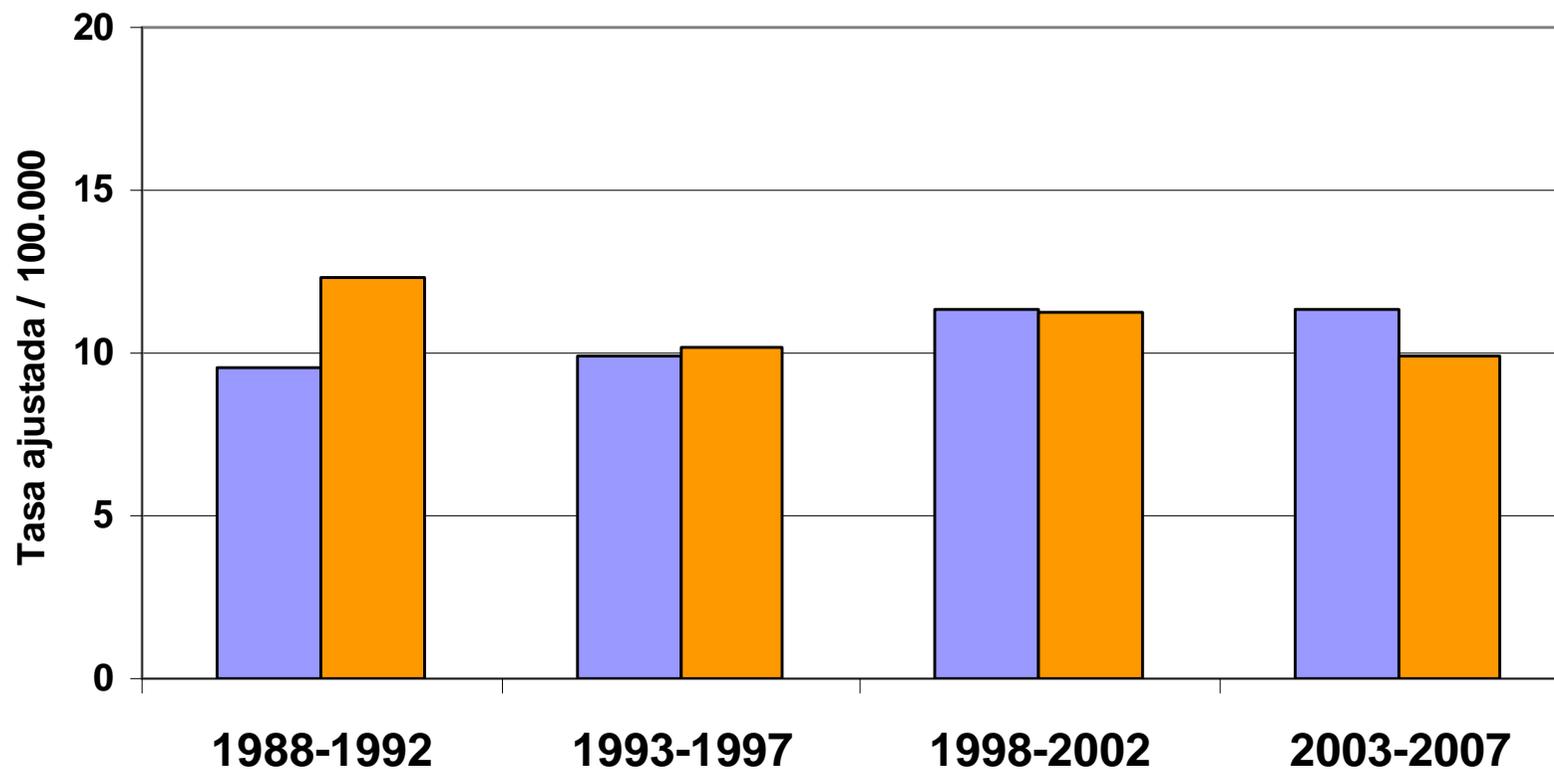


## Tasa de incidencia ajustada de cáncer de ovario por año. Región de Murcia 1983-2007



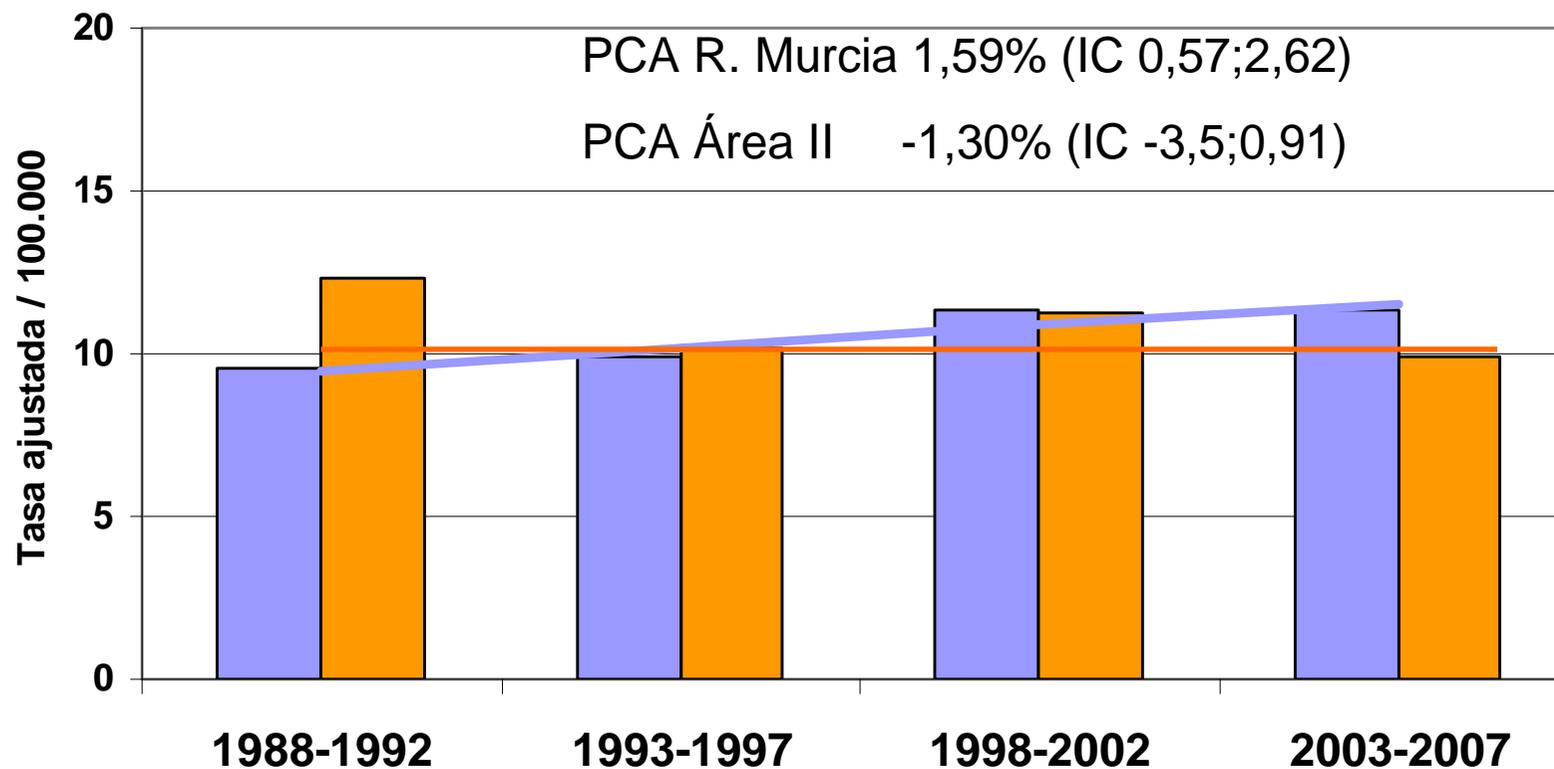


## Tasa de incidencia de cáncer de ovario por periodo. Región de Murcia y Área II 1988-2007



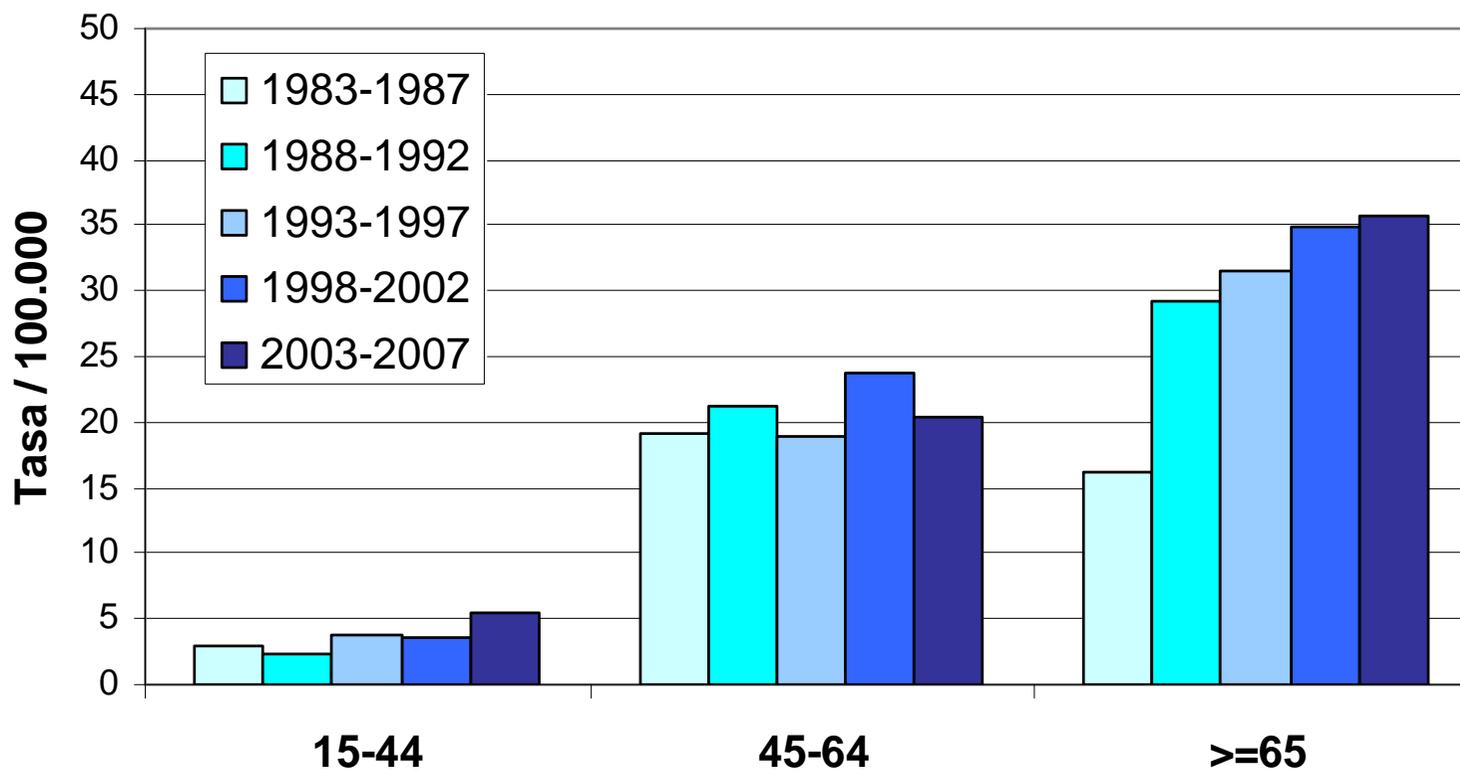


## Tasa de incidencia de cáncer de ovario por periodo. Región de Murcia y Área II 1988-2007



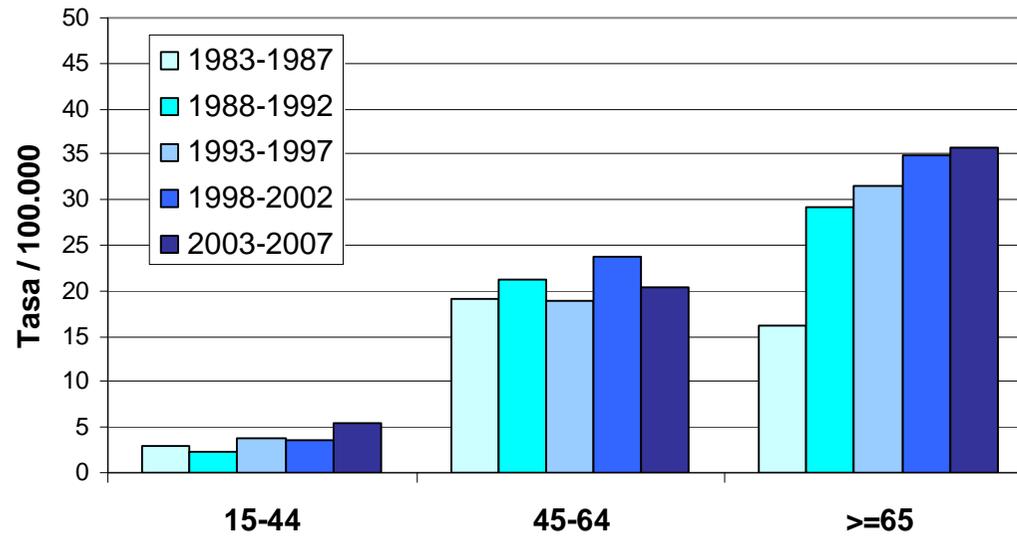


## Tasa de incidencia de cáncer de ovario por grupo de edad y periodo. Región de Murcia 1983-2007

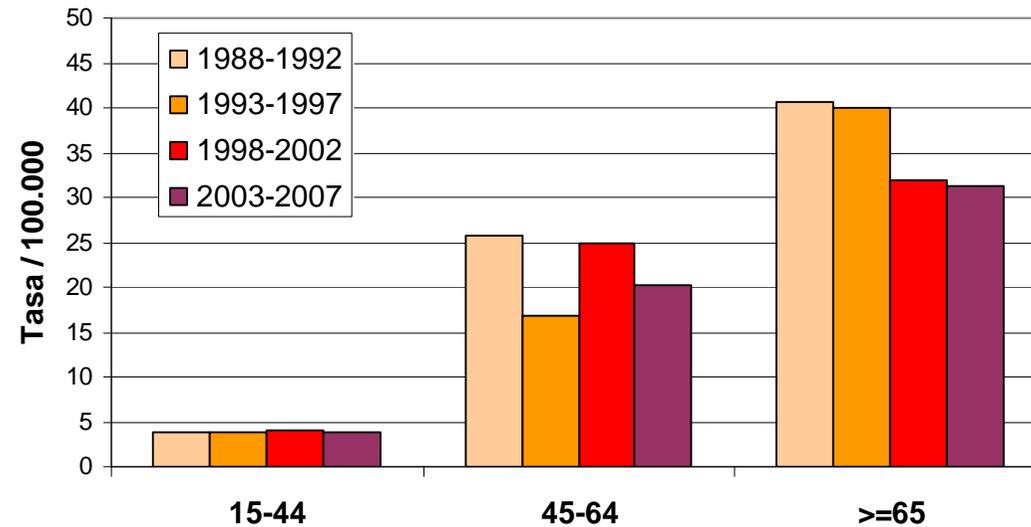




**Tasa de incidencia de cáncer de ovario por grupo de edad y periodo. Región de Murcia 1983-2007**

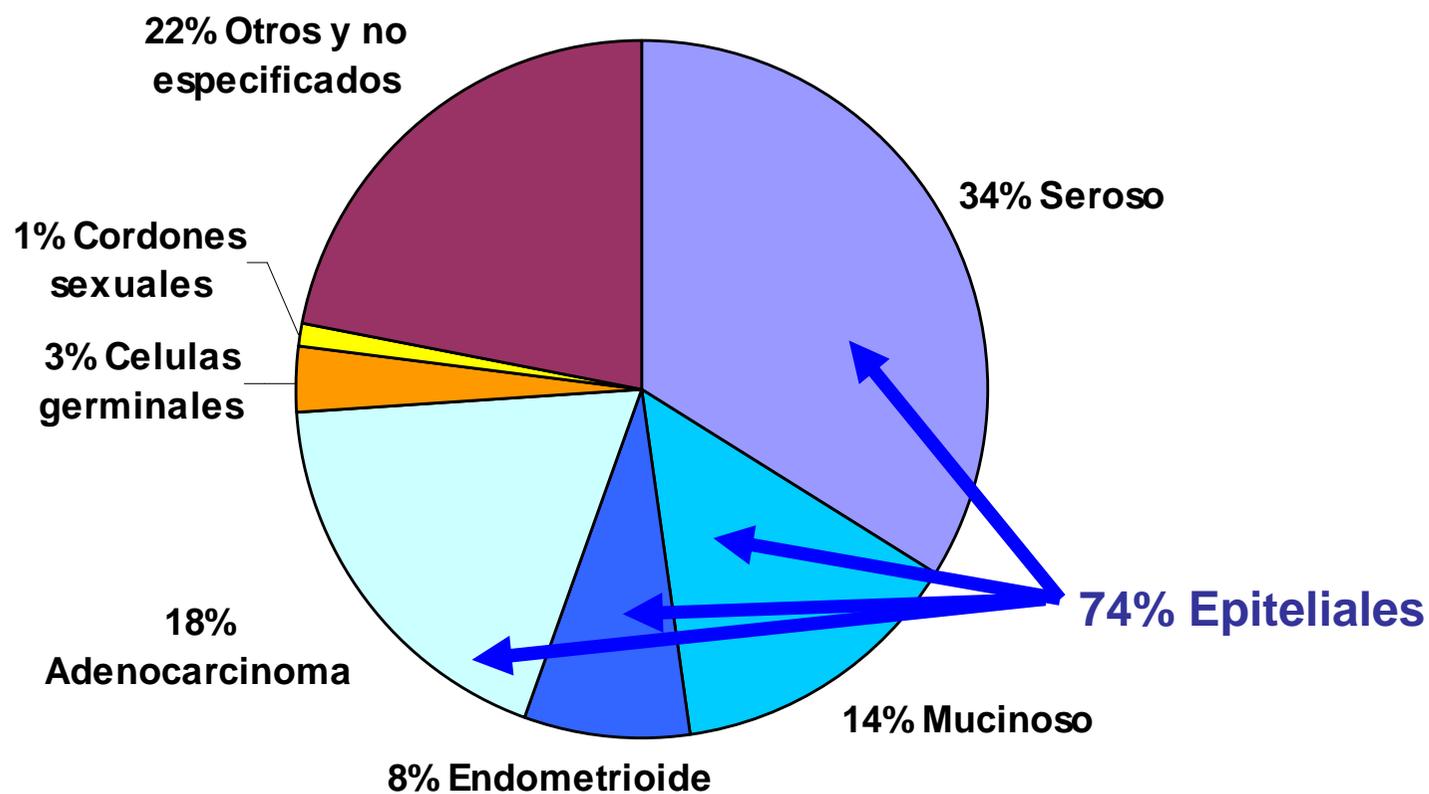


**Tasa de incidencia de cáncer de ovario por grupo de edad y periodo. Área II 1983-2007**





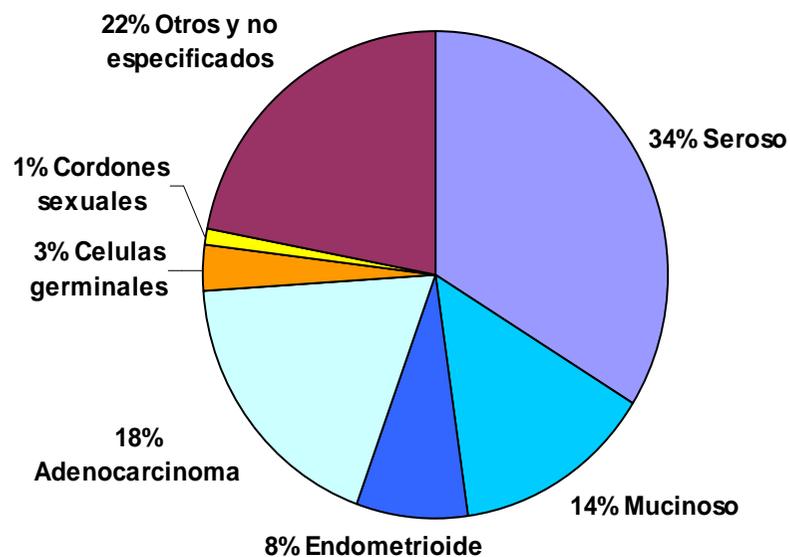
## Cáncer de ovario por morfología. Región de Murcia 1983-2007.



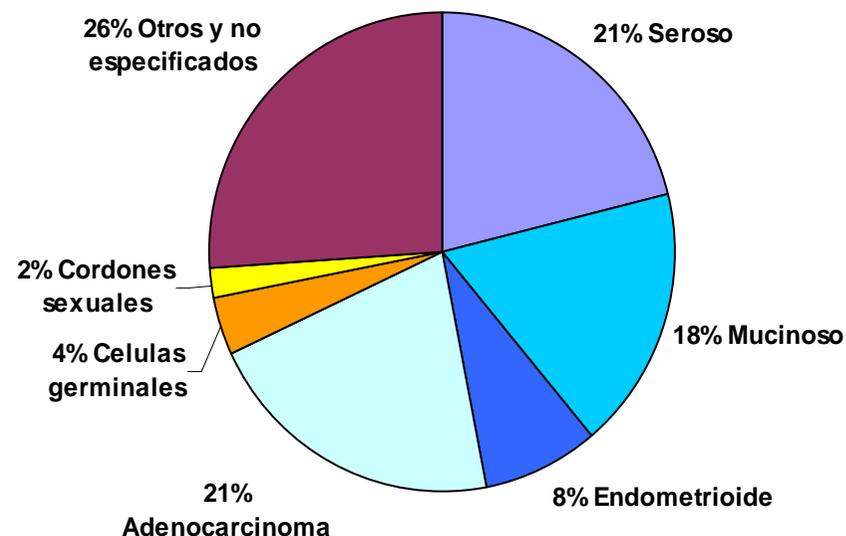
# EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II



### Cáncer de ovario por morfología. Región de Murcia 1983-2007.



### Cáncer de ovario por morfología. Área II 1983-2007.

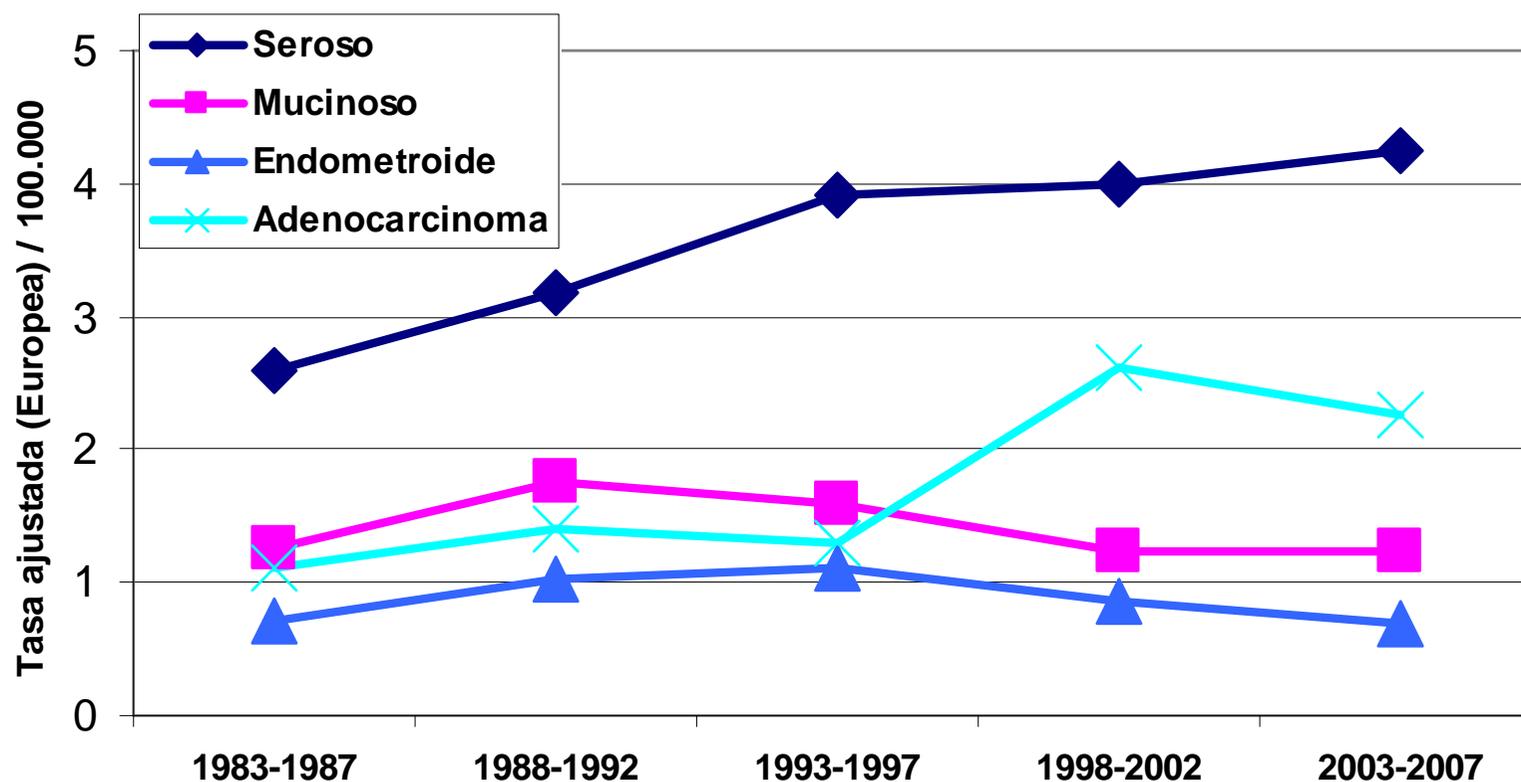


**74% Epiteliales**

**68% Epiteliales**



## Tasas de incidencia de cáncer de ovario epitelial por morfología y periodo. Región de Murcia 1983-2007.



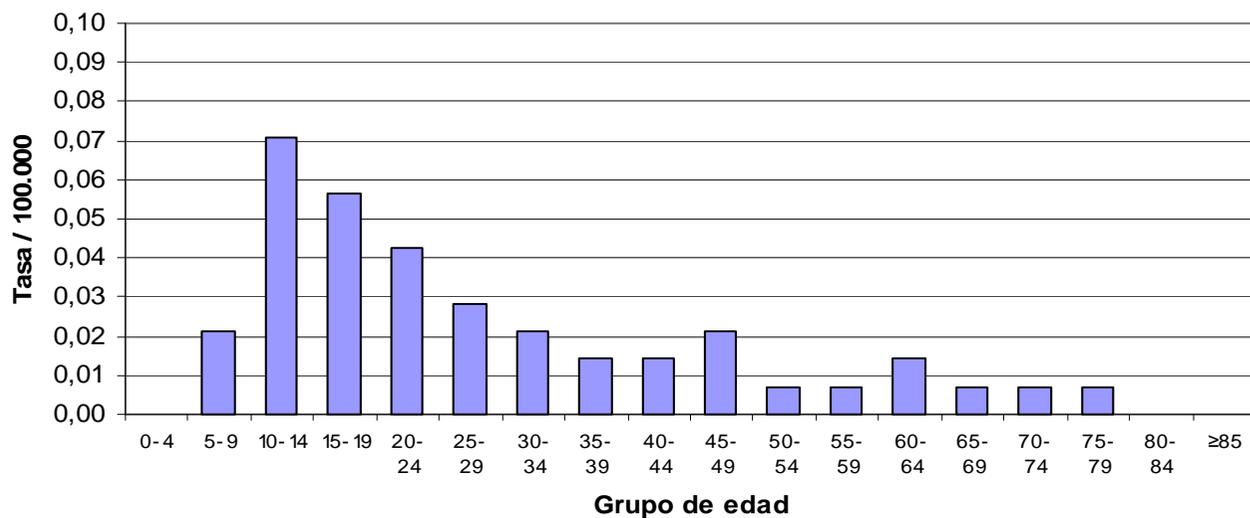


## NO EPITELIALES

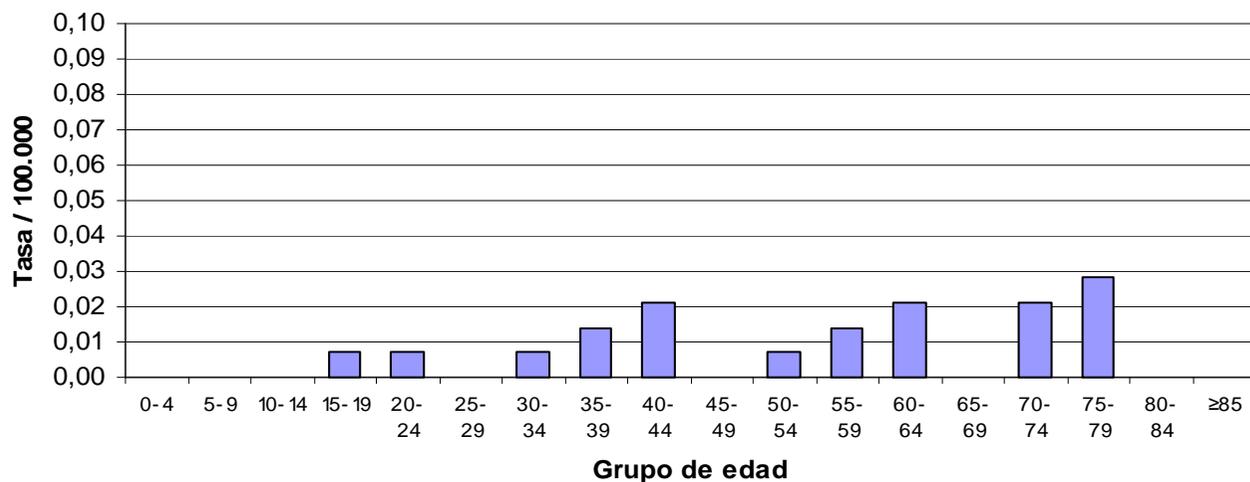
- Tumores de células germinales:
  - 51 casos 1983-2007
  - Media 2 casos/año
  - Edad
    - 5-19: 41%
  - Incidencia 0,36 / 100.000 mujeres
  - Supervivencia 5 años 80%
- Tumores del estroma de los cordones sexuales:
  - 21 casos 1983-2007
  - Media 1 caso/año
  - Edad:
    - 15-80: 100%
  - Incidencia 0,15 / 100.000 mujeres
  - Supervivencia 5 años 38%



**Tasa de incidencia de tumores germinales del ovario por grupo de edad. Región de Murcia 2003-2007**



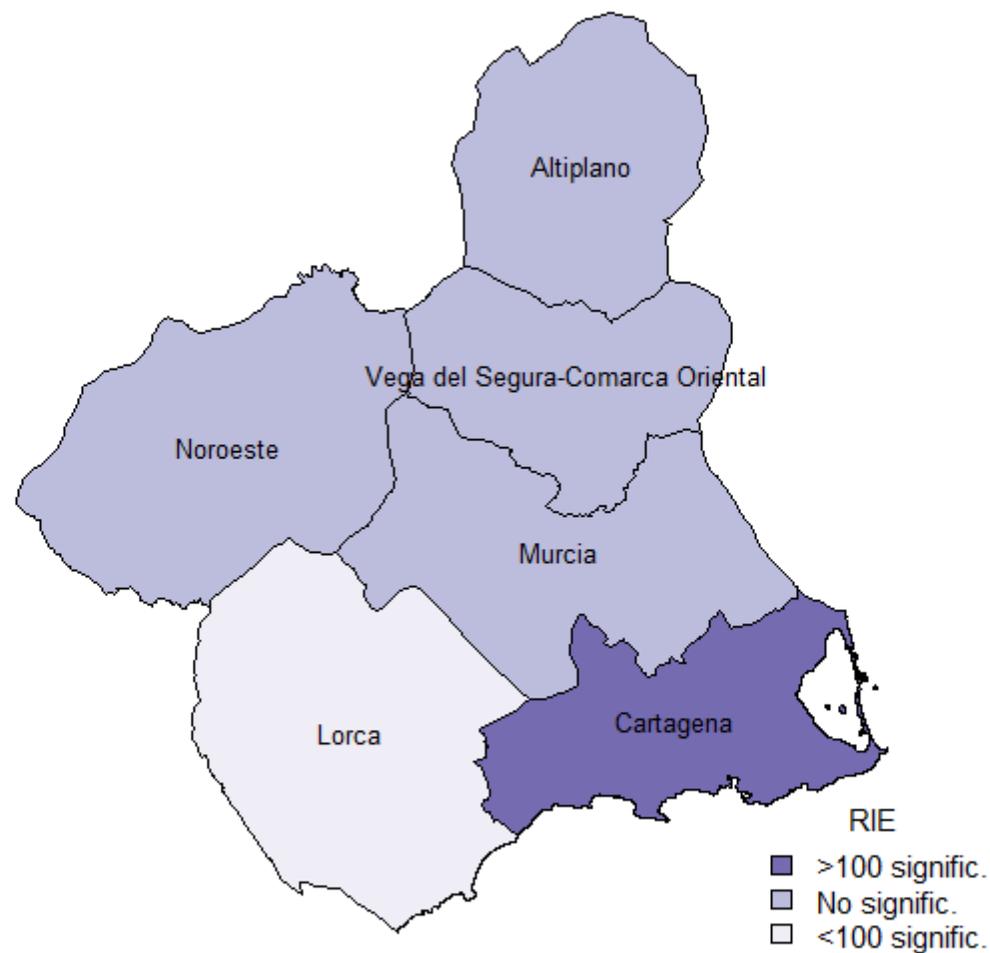
**Tasa de incidencia de tumores del estroma de los cordones sexuales por grupo de edad. Región de Murcia 2003-2007**



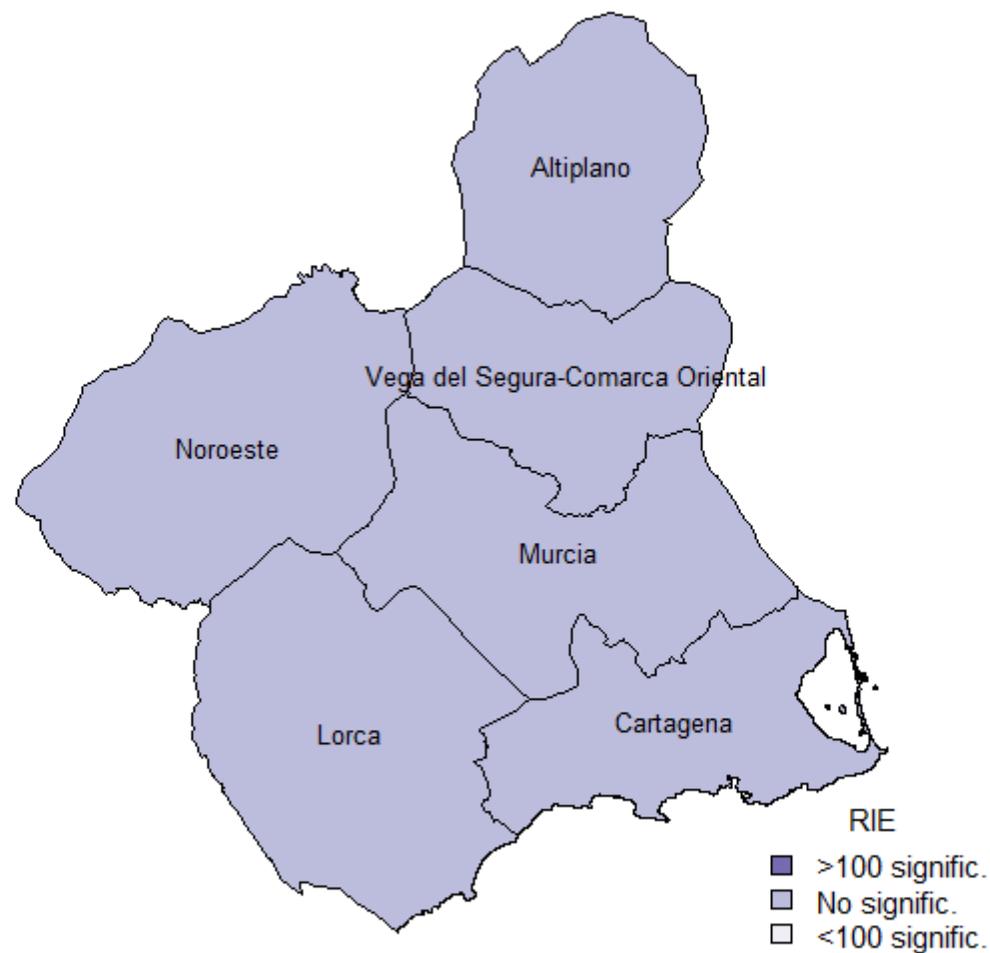
## RIE de cáncer de ovario por área de salud y periodo. Región de Murcia 1988-2007

Área	Periodo	Obsevadados	Esperados	RIE	IC 95%		p-valor
Área I	1988-92	89	98,2	90,66	72,8	111,57	
Área I	1993-97	117	112,1	104,39	86,34	125,12	
Área I	1998-02	158	140,3	112,62	95,74	131,61	
Área I	2003-07	160	162,2	98,66	83,96	115,19	
<b>Área II</b>	<b>1988-92</b>	<b>79</b>	<b>59,4</b>	<b>133,05</b>	<b>105,33</b>	<b>165,83</b>	<b>p&lt;0,05</b>
Área II	1993-97	75	67,9	110,42	86,85	138,42	
Área II	1998-02	88	88,2	99,83	80,06	122,99	
Área II	2003-07	94	107	87,85	70,99	107,51	
Área III	1988-92	17	30,4	55,96	32,58	89,61	p<0,05
Área III	1993-97	30	34,5	87,09	58,75	124,34	
Área III	1998-02	37	42,8	86,39	60,82	119,08	
Área III	2003-07	47	48,9	96,11	70,61	127,82	
Área IV	1988-92	18	16,5	108,95	64,53	172,19	
Área IV	1993-97	15	17,9	83,88	46,91	138,36	
Área IV	1998-02	10	21,7	46,08	22,06	84,74	p<0,01
Área IV	2003-07	24	24	99,87	63,97	148,61	
Área V	1988-92	11	11,4	96,23	47,97	172,19	
Área V	1993-97	7	12,6	55,4	22,19	114,15	
Área V	1998-02	14	15,3	91,28	49,86	153,16	
Área V	2003-07	14	17,3	80,91	44,2	135,76	
Área VI	1988-92	36	34,1	105,5	73,88	146,06	
Área VI	1993-97	40	39	102,46	73,19	139,52	
Área VI	1998-02	50	48,7	102,71	76,23	135,41	
Área VI	2003-07	76	56,6	134,31	105,81	168,11	p<0,05

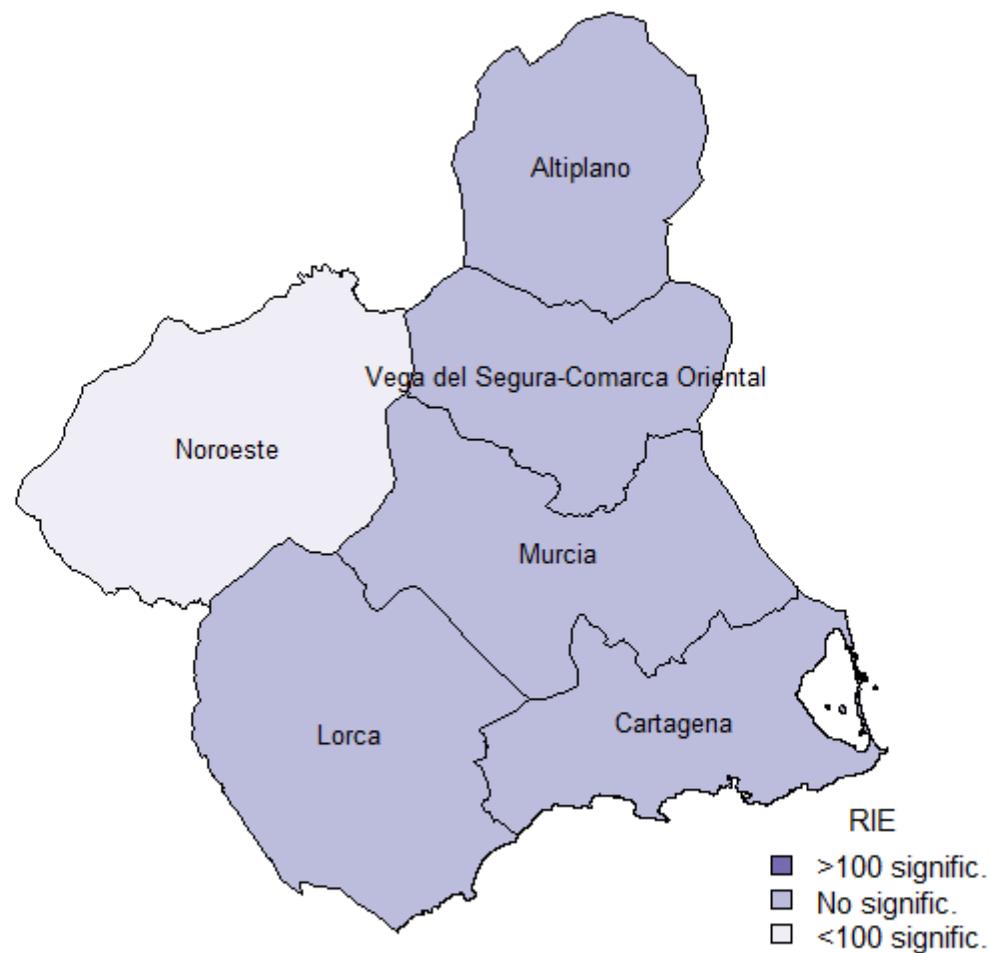
### Cáncer de Ovario Periodo 1988-1992



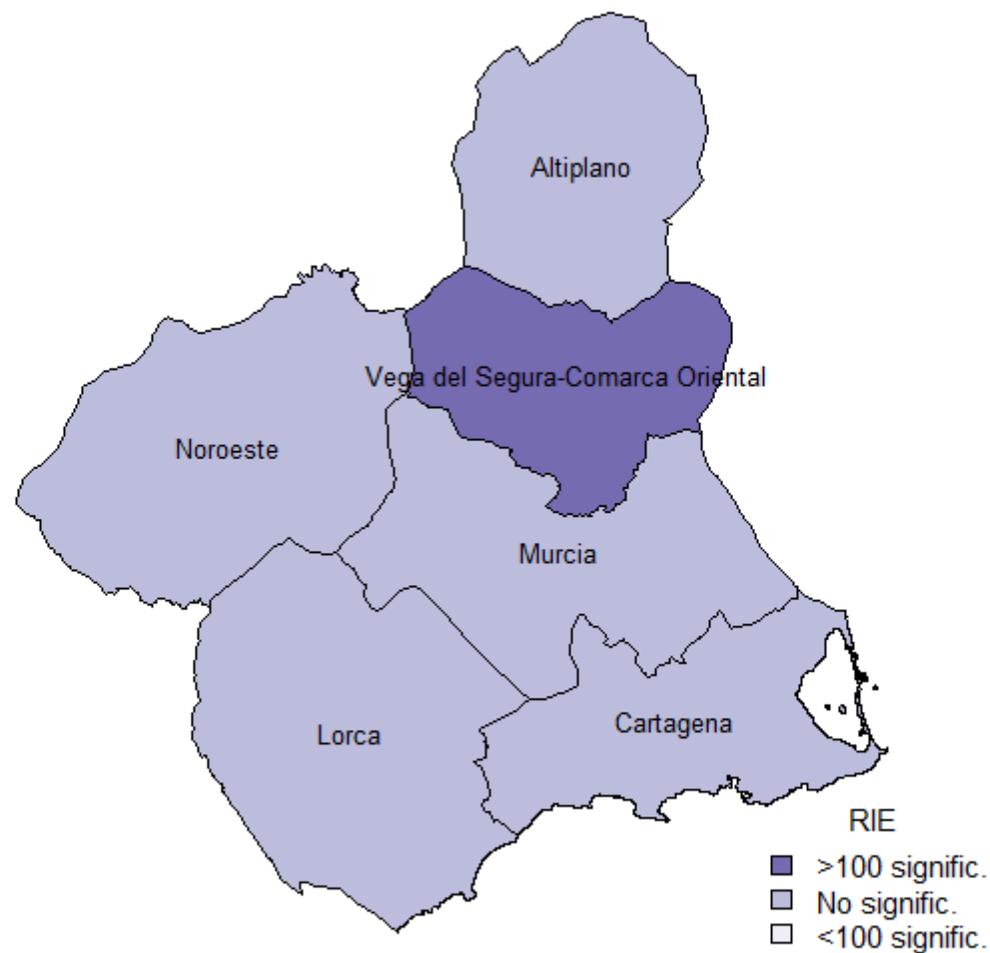
### Cáncer de Ovario Periodo 1993-1997



### Cáncer de Ovario Periodo 1998-2002



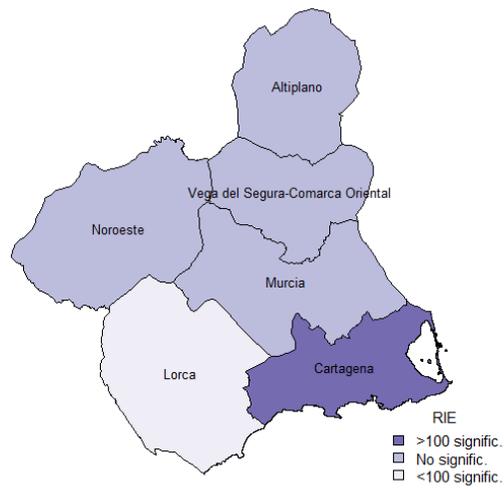
### Cáncer de Ovario Periodo 2003-2007



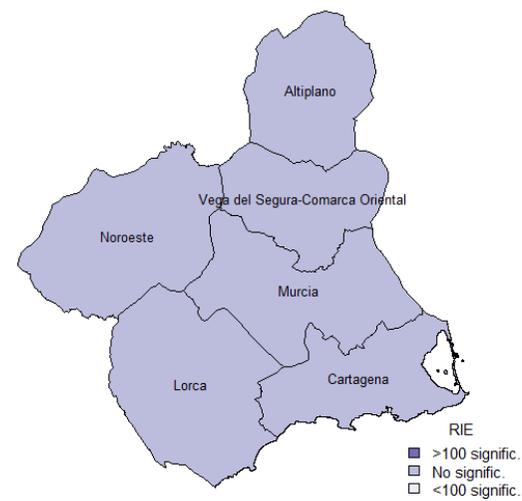
# MURCIA Y ÁREA II



Cáncer de Ovario  
Periodo 1988-1992



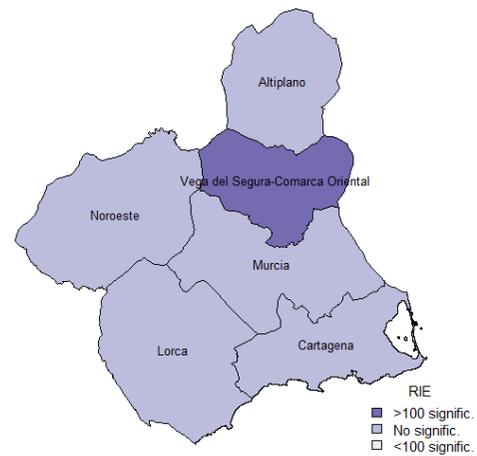
Cáncer de Ovario  
Periodo 1993-1997



Cáncer de Ovario  
Periodo 1998-2002



Cáncer de Ovario  
Periodo 2003-2007



# EPIDEMIOLOGÍA DEL CÁNCER DE

Cancer survival in Europe 1999–2007 by country and results of EURO CARE-5—a population-based study

Roberta De Angelis, Milena Sant, Michel P Coleman, Silvia Francisci, Paolo Baili, Daniela Pierannunzio, Annalisa Trama, Ott

Lancet Oncol 2014; 15: 23–34

Pronóstico desfavorable

10% no tienen confirmación microscópica

Elevado % diagnóstico en estadio avanzado

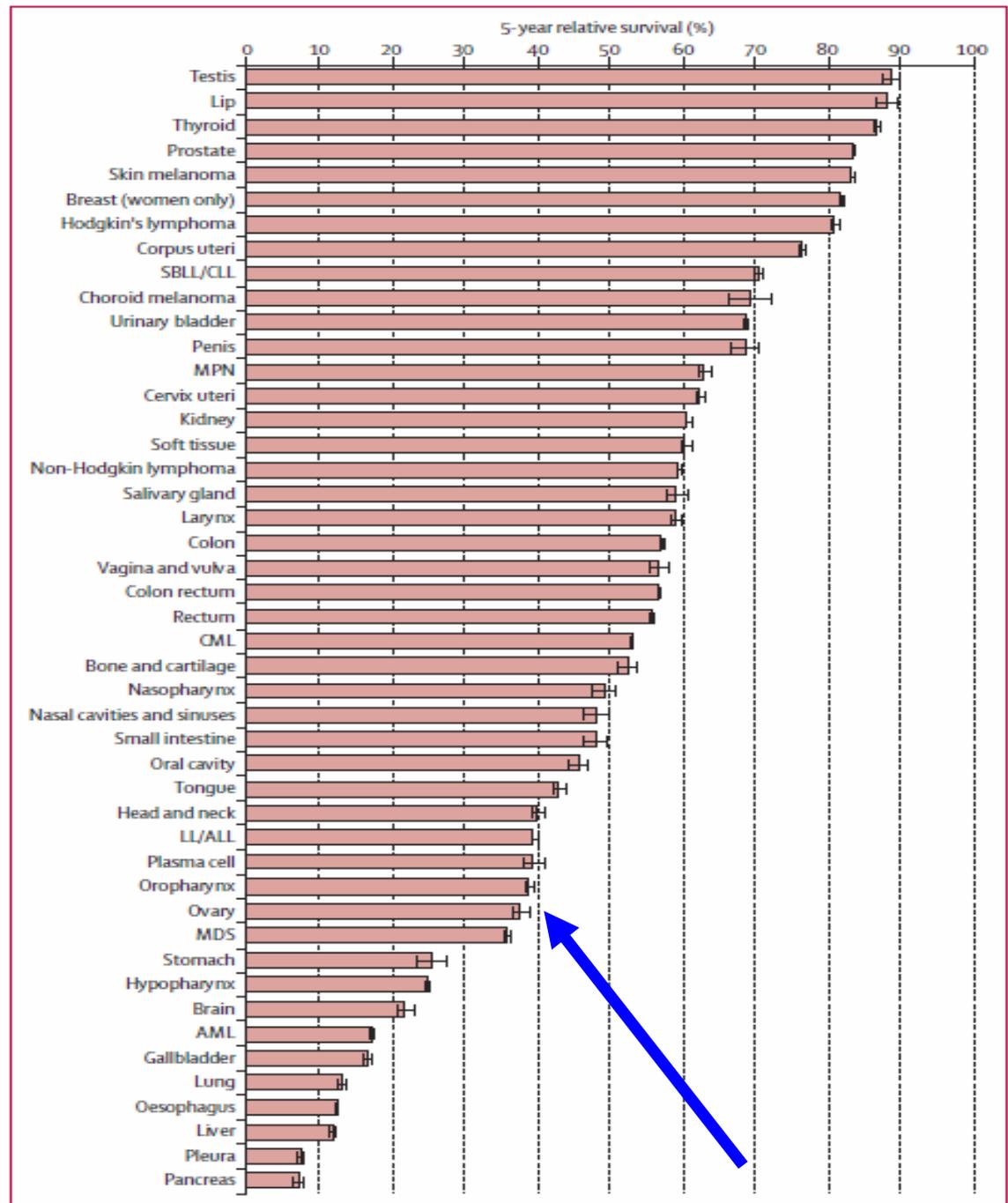


Figure 1: European mean age-standardised 5-year relative survival for adult patients with cancer diagnosed in 2000–2007



original article

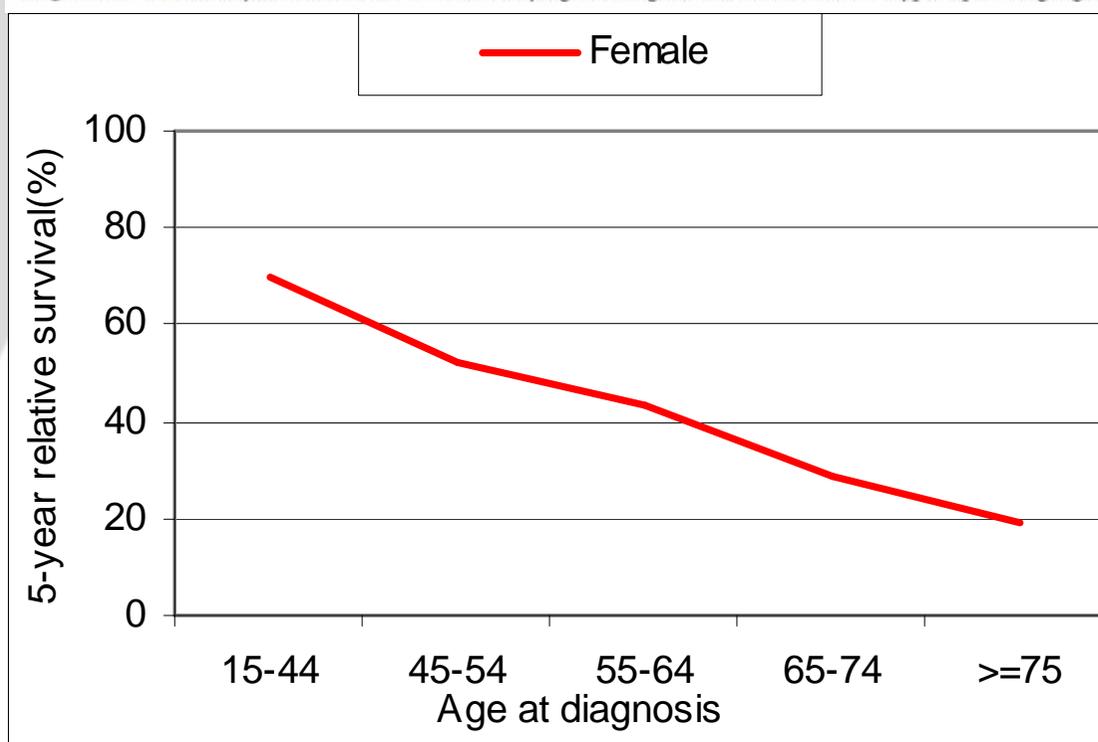
*Annals of Oncology* 21 (Supplement 3): iii21–iii29, 2010  
doi:10.1093/annonc/mdq082

## Cancer survival in Spain: estimate for nine major cancers

M. D. Chirlaque<sup>1,2\*</sup>, D. Salmerón<sup>1,2</sup>, E. Ardanaz<sup>2,3</sup>, J. Galceran<sup>4</sup>, R. Martínez<sup>5</sup>, R. Marcos-Gragera<sup>6</sup>, M. J. Sánchez<sup>2,7</sup>, A. Mateos<sup>8</sup>, A. Torrella<sup>9</sup>, R. Capocaccia<sup>10</sup> & C. Navarro<sup>1,2</sup>

<sup>1</sup>Murcia Cancer Registry, Department of Epidemiology, Health Authority, Murcia; <sup>2</sup>Consortium for Biomedical Research in Epidemiology and Public Health (CIBER)

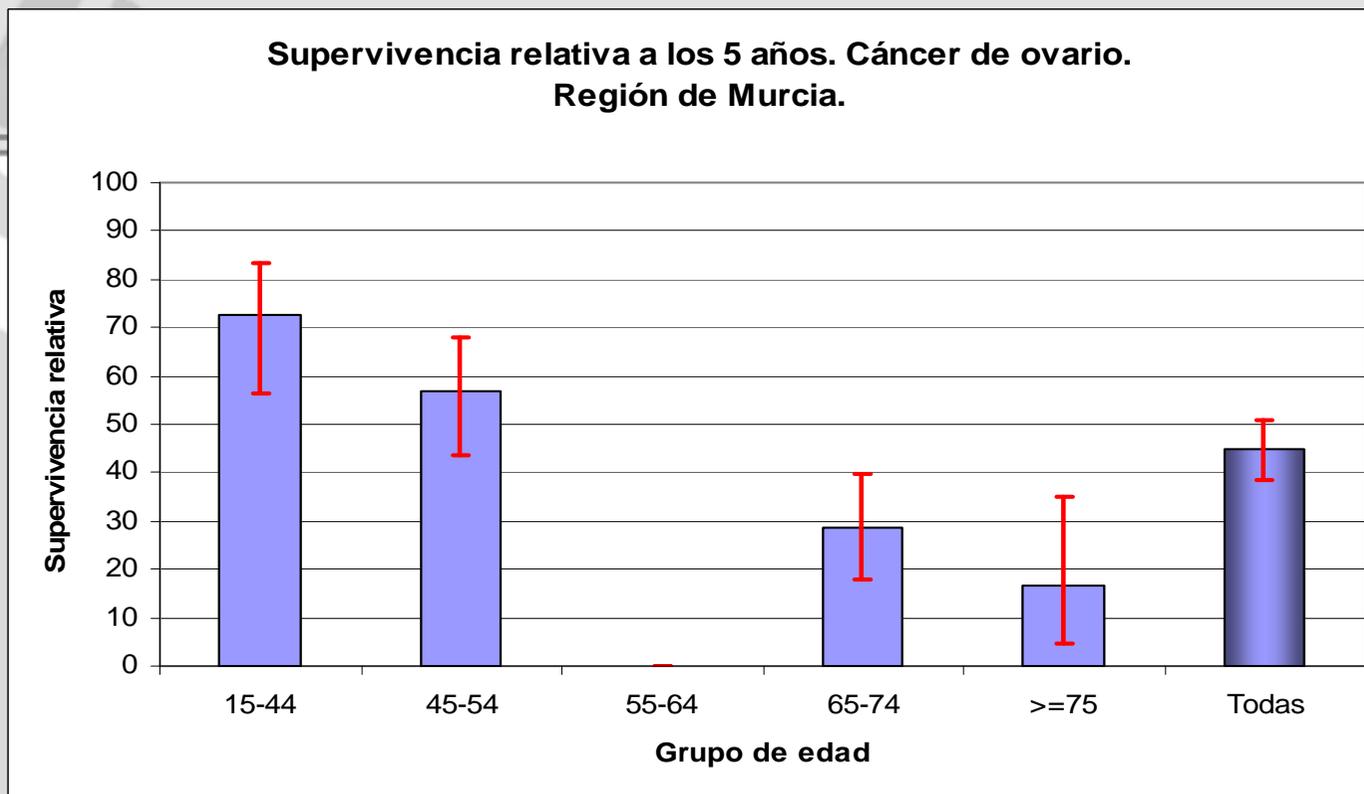
**Figure 1.** Pooled 5-year relative survival rates by age at diagnosis, sex and tumour type: Spanish geographical areas, 1995–1999.



All ages

5y RS **42,7** (39,9-45,4)

# EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II



**Supervivencia relativa 5 años. Región de Murcia.**

	SR	IC inf.	IC sup.
15-44	72,6	56,6	83,5
45-54	57,0	43,8	68,1
55-64	-----	-----	-----
65-74	28,5	18,1	39,7
≥75	16,8	4,9	34,9
Todas	44,8	38,6	50,9



original article

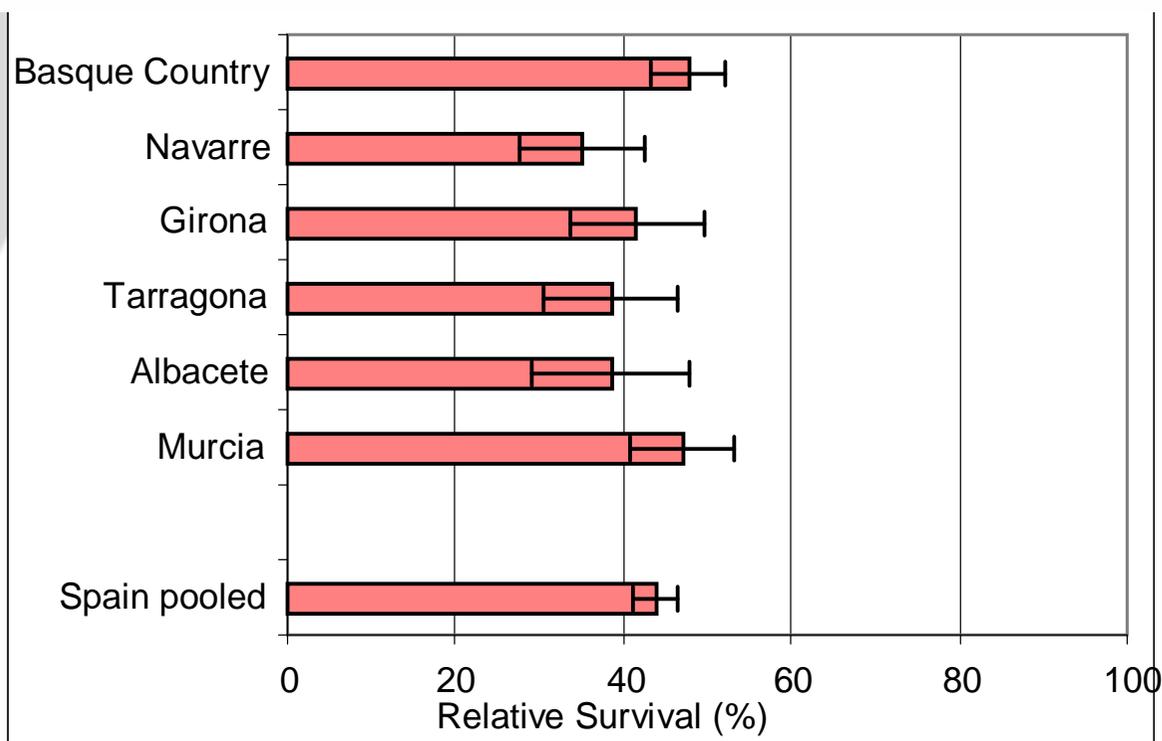
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<sup>1</sup>Murcia Cancer Registry, Department of Epidemiology, Health Authority, Murcia; <sup>2</sup>Consortium for Biomedical Research in Epidemiology and Public Health (CIBER)

**Figure 2.** Age-adjusted 5-year relative survival rates\* by tumour type, sex and geographical area, individually and pooled.



# EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II

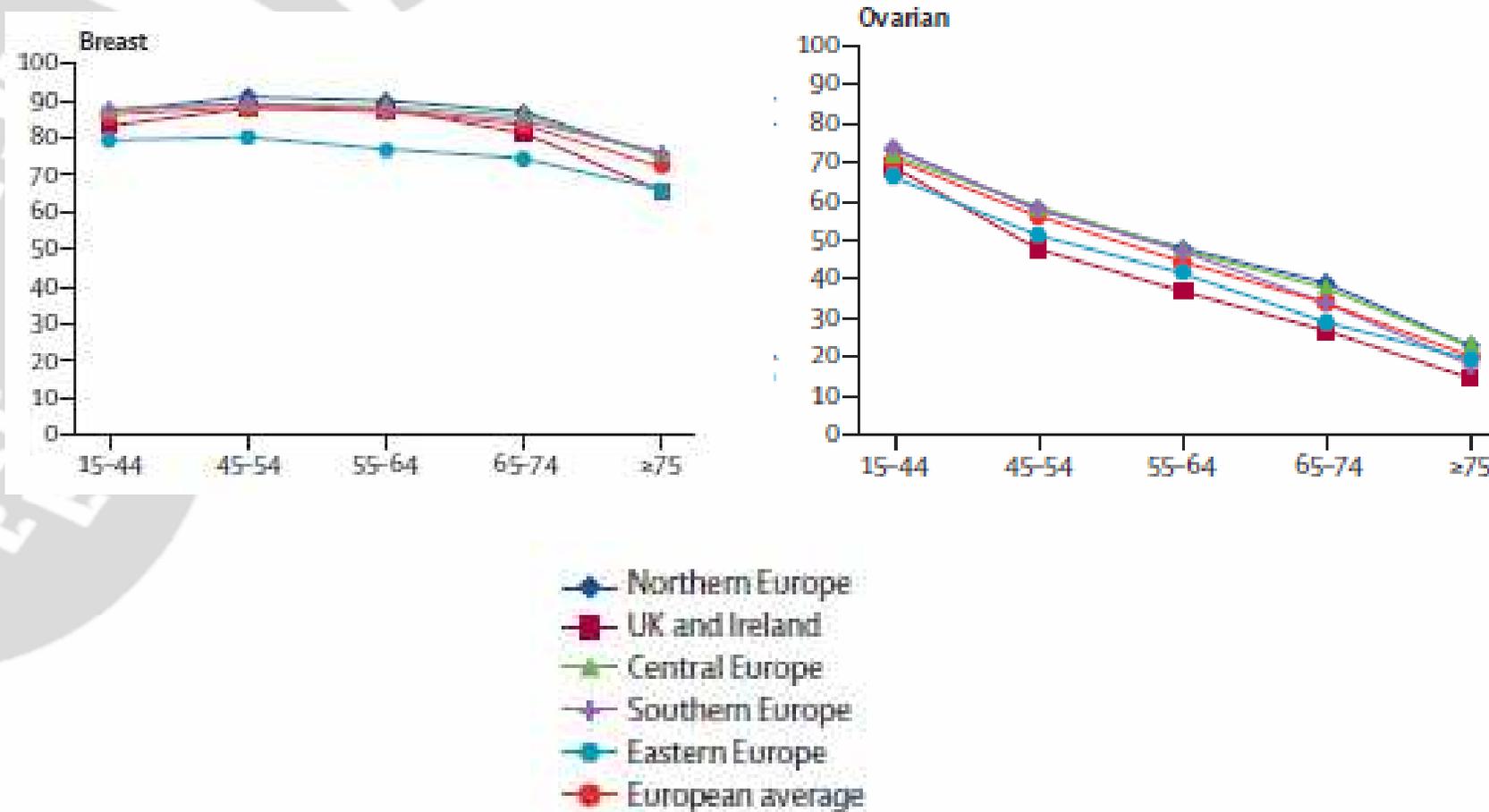


Cancer survival in Europe 1999–2007 by country and age:  
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Roberta De Angelis, Milena Sant, Michel P Coleman, Silvia Francisci, Paolo Baili, Daniela Pierannunzio, Annalisa Trama, Otto Visser,

Lancet Oncol 2014; 15: 23–34

Figure 2: Age-specific 5-year relative survival for adults with cancer diagnosed in 2000–07



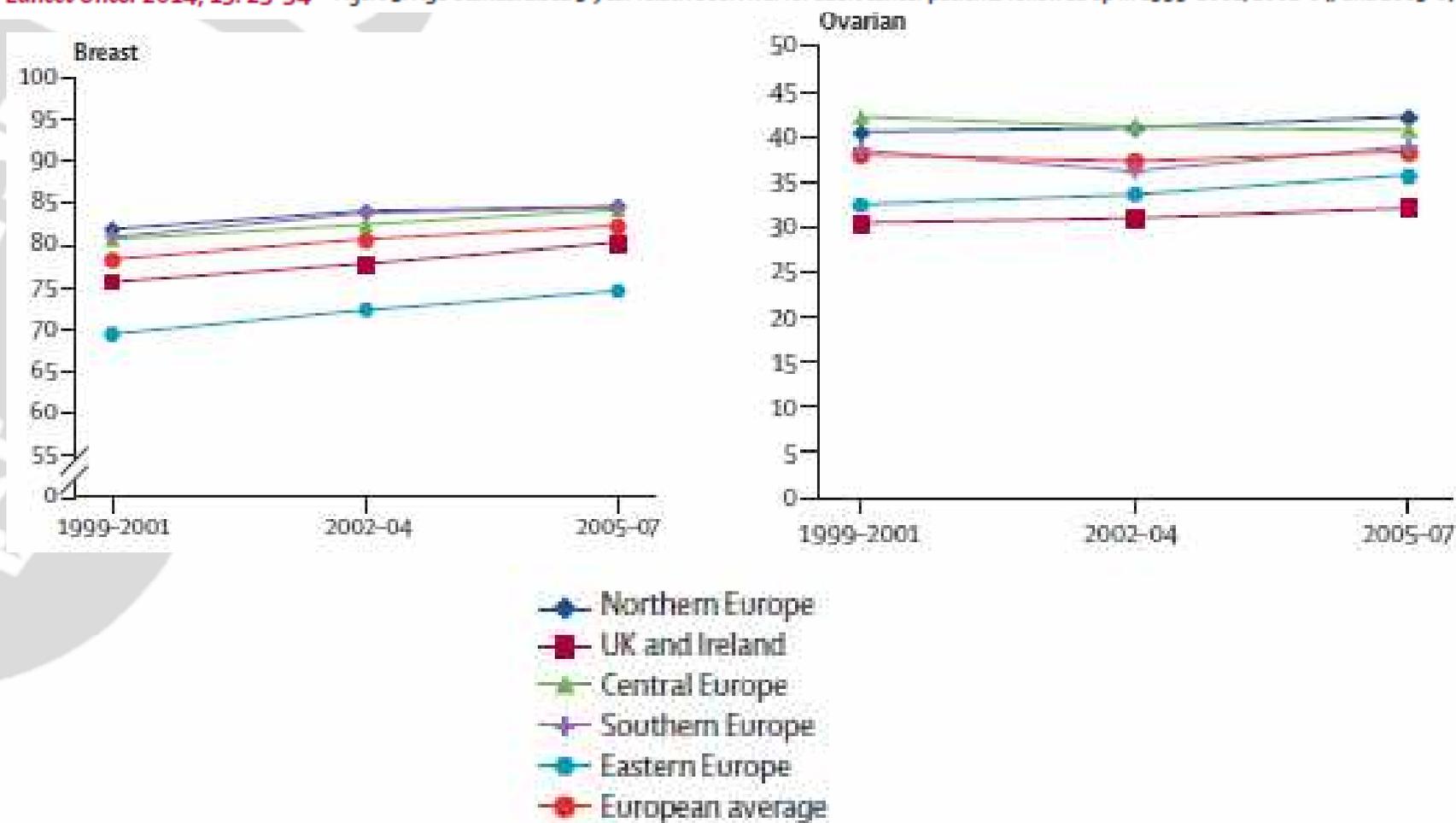
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**Lancet Oncol 2014; 15: 23–34** Figure 3: Age-standardised 5-year relative survival for adult cancer patients followed up in 1999–2001, 2002–04, and 2005–07





### **FACTORES DE RIESGO:**

- Elevada paridad y uso de CHO asociado con disminución del riesgo
- THS prolongado aumenta el riesgo en post-menopausia
- Obesidad
- Tabaco
- Frutas y verduras

# The European Prospective Investigation into Cancer and Nutrition study

International Agency for Research on Cancer



## EPIC Project

<http://epic.iarc.fr>



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FUNDING

The European Prospective Investigation into Cancer and Nutrition (EPIC) is coordinated by Dr Elio Riboli, Head of the Division of Epidemiology, Public Health and Primary Care at the Imperial College London in the United Kingdom. EPIC received substantial financial support from the Europe Against Cancer Program of the [European Commission](#).

# The European Prospective Investigation into Cancer and Nutrition study



	Participants	
	Questionnaire	Q + Blood
France	74 524	28 053
Italy	47 749	47 725
Spain	41 440	39 579
UK	87 942	43 141
Netherlands	40 072	36 318
Greece	28 555	28 483
Germany	53 091	50 678
Sweden	53 826	53 781
Denmark	57 054	56 131
Norway	37 215	31 000
<b>Total</b>	<b>521 468</b>	<b>414 889</b>

## EPIC-Spain:

5 regions with population-based cancer registries:  
Asturias, Granada, Guipúzcoa, Murcia and Navarra.

Coordinating center: Catalan Institute of Oncology (Barcelona).

## EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II

Br J Cancer. 2011 Oct 25;105(9):1436-42. doi: 10.1038/bjc.2011.371. Epub 2011 Sep 13.

### Oral contraceptive use and reproductive factors and risk of ovarian cancer in the European Prospective Investigation into Cancer and Nutrition.

Tsilidis KK<sup>1</sup>, Allen NE, Key TJ, Dossus L, Lukanova A, Bakken K, Lund E, Fournier A, Overvad K, Hansen L, Tjønneland A, Fedirko V, Rinaldi S, Romieu I, Clavel-Chapelon F, Engel P, Kaaks R, Schütze M, Steffen A, Bamia C, Trichopoulou A, Zylis D, Masala G, Pala V, Galasso R, Tumino R, Sacerdote C, Bueno-de-Mesquita HB, van Duijnhoven FJ, Braem MG, Onland-Moret NC, Gram IT, Rodríguez L, Travier N, Sánchez MJ, Huerta JM, Ardanaz E, Larrañaga N, Jirström K, Manjer J, Idahl A, Ohlson N, Khaw KT, Wareham N, Mouw T, Norat T, Riboli E.

#### Author information

#### Abstract

**BACKGROUND:** It is well established that parity and use of oral contraceptives are associated with ovarian cancer risk, but these associations with other reproductive variables are less clear.

**CHO ≥ 10 years HR 0.55 CI 0.41-0.75**

**Parous women HR 0.71 CI 0.59-0.87**

**METHODS:** We examined the associations of oral contraceptive use and reproductive factors with ovarian cancer risk in the European Prospective Investigation into Cancer and Nutrition. Among 327,396 eligible women, 878 developed ovarian cancer over an average of 9 years. Hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated using Cox proportional hazard models stratified by centre and age, and adjusted for smoking status, body mass index, unilateral ovariectomy, simple hysterectomy, menopausal hormone therapy, and mutually adjusted for age at menarche, age at menopause, number of full-term pregnancies and duration of oral contraceptive use.

**RESULTS:** Women who used oral contraceptives for 10 or more years had a significant 45% (HR, 0.55; 95% CI, 0.41-0.75) lower risk compared with users of 1 year or less (P-trend, <0.01). Compared with nulliparous women, parous women had a 29% (HR, 0.71; 95% CI, 0.59-0.87) lower risk, with an 8% reduction in risk for each additional pregnancy. A high age at menopause was associated with a higher risk of ovarian cancer (>52 vs ≤ 45 years: HR, 1.46; 95% CI, 1.06-1.99; P-trend, 0.02). Age at menarche, age at first full-term pregnancy, incomplete pregnancies and breastfeeding were not associated with risk.

**CONCLUSION:** This study shows a strong protective association of oral contraceptives and parity with ovarian cancer risk, a higher risk with a late age at menopause, and no association with other reproductive factors.

## EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II

*Cancer Causes Control*. 2011 Aug;22(8):1075-84. doi: 10.1007/s10552-011-9782-z. Epub 2011 Jun 3.

### Menopausal hormone therapy and risk of ovarian cancer in the European prospective investigation into cancer and nutrition.

Tsilidis KK<sup>1</sup>, Allen NE, Key TJ, Dossus L, Kaaks R, Bakken K, Lund E, Fournier A, Dahm CC, Overvad K, Hansen L, Tjønneland A, Rinaldi S, Romieu I, Boutron-Ruault MC, Clavel-Chapelon F, Lukanova A, Boeing H, Schütze M, Benetou V, Palli D, Berrino F, Galasso R, Tumino R, Sacerdote C, Bueno-de-Mesquita HB, van Duijnhoven FJ, Braem MG, Onland-Moret NC, Gram IT, Rodríguez L, Duell EJ, Sánchez MJ, Huerta JM, Ardanaz E, Amiano P, Khaw KT, Wareham N, Riboli E.

#### Author information

#### Abstract

The association between menopausal hormone therapy (HT) and risk of ovarian cancer was assessed among 126,920 post-menopausal women recruited into the European Prospective Investigation into Cancer and Nutrition. After an average of 9-year follow-up, 424 incident ovarian cancers were diagnosed. Cox models adjusted for body mass index, smoking status, unilateral ovariectomy, simple hysterectomy, age at menarche, number of full-term pregnancies, and duration of oral contraceptives were used. Compared with baseline never use, current use of any HT was positively associated with risk (HR [hazard ratio], 1.29; 95% CI [confidence interval], 1.01-1.65), while former use was not (HR, 0.96; 95% CI, 0.70-1.30). Current estrogen-only HT was associated with a 63% higher risk (HR, 1.63; 95% CI, 1.08-2.47), while current estrogen plus progestin was associated with a smaller and non-significant higher risk (HR, 1.20; 95% CI, 0.89-1.62). Use of tibolone was associated with a twofold greater risk (HR, 2.19; 95% CI, 1.06-4.50), but was based on small numbers. In conclusion, women who currently use HT have a moderate increased risk of ovarian cancer, and which may be stronger for estrogen-only than estrogen plus progestin preparations.

**Current use of any THS HR 1.29 CI 1.01-1.65**

**Current estrogen-only THS 1.63 CI 1.08-2.47**

**Current estrogen+progestin THS 1.20 CI 0.89-1.62**

## Anthropometric measures and epithelial ovarian cancer risk in the European Prospective Investigation into Cancer and Nutrition

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Eva Lundin<sup>7</sup>, Anne Tjønneland<sup>8</sup>, Jytte Halkjær<sup>8</sup>, Marianne Tang Severinsen<sup>9</sup>,  
Nathalie Chabbert-Buffet<sup>11</sup>, Françoise Clavel-Chapelon<sup>11</sup>, Laure Dossus<sup>6</sup>,  
Antonia Trichopoulou<sup>12,13</sup>, Pagona Lagiou<sup>12</sup>, Androniki Naska<sup>12</sup>, Domenic

**BMI  $\geq$  30 HR 1.33 CI 1.05-1.68**

**Premenopausal HR 1.16 CI 0.65-2.06**

**Postmenopausal HR 1.59 CI 1.20-2.10**

We examined the associations of measured anthropometric factors, including general and central adiposity and height, with ovarian cancer risk. We also investigated these associations by menopausal status and for specific histological subtypes. Among 226,798 women in the European Prospective Investigation into Cancer and Nutrition (EPIC) cohort, there were 611 incident cases of primary, malignant, epithelial ovarian cancer diagnosed during a mean 8.9 years of follow-up. Cox proportional hazards models were used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs), adjusted for potential confounders. Compared to women with body mass index (BMI)  $< 25$  kg/m<sup>2</sup>, obesity (BMI  $\geq 30$  kg/m<sup>2</sup>) was associated with excess ovarian cancer risk for all women combined (HR = 1.33, 95% CI = 1.05–1.68;  $p_{\text{trend}} = 0.02$ ) and postmenopausal women (HR = 1.59, 95% CI = 1.20–2.10;  $p_{\text{trend}} = 0.001$ ), but the association was weaker for premenopausal women (HR = 1.16, 95% CI = 0.65–2.06;  $p_{\text{trend}} = 0.65$ ). Neither height or weight gain, nor BMI-adjusted measures of fat distribution assessed by waist circumference, waist-hip ratio (WHR) or hip circumference were associated with overall risk. WHR was related to increased risk of mucinous tumors (BMI-adjusted HR per 0.05 unit increment = 1.17, 95% CI = 1.00–1.38). For all women combined, no other significant associations with risk were observed for specific histological subtypes. This large, prospective study provides evidence that obesity is an important modifiable risk factor for epithelial ovarian cancer, particularly among postmenopausal women.

## EPIDEMIOLOGÍA DEL CÁNCER DE OVARIO EN LA REGIÓN DE MURCIA Y ÁREA II

[Int J Cancer](#). 2012 May 1;130(9):2204-10. doi: 10.1002/ijc.26235. Epub 2011 Sep 14.

### **Cigarette smoking and risk of histological subtypes of epithelial ovarian cancer in the EPIC cohort study.**

[Gram IT](#)<sup>1</sup>, [Lukanova A](#), [Brill I](#), [Braaten T](#), [Lund E](#), [Lundin E](#), [Overvad K](#), [Tjønneland A](#), [Clavel-Chapelon F](#), [Chabbert-Buffet N](#), [Bamia C](#), [Trichopoulou A](#), [Zylis D](#), [Masala G](#), [Berrino F](#), [Galasso R](#), [Tumino R](#), [Sacerdote C](#), [Gavrilyuk O](#), [Kristiansen S](#), [Rodríguez L](#), [Bonet C](#), [Huerta JM](#), [Barricarte A](#), [Sánchez MJ](#), [Dorransoro M](#), [Jirstrom K](#), [Almquist M](#), [Idahl A](#), [Bueno-de-Mesquita HB](#), [Braem M](#), [Onland-Moret C](#), [Tsilidis KK](#), [Allen NE](#), [Fedirko V](#), [Riboli E](#), [Kaaks R](#).

#### **Author information**

#### **Abstract**

New data regarding a positive association between smoking and risk of epithelial ovarian cancer (EOC), especially the mucinous tumor type, has started to emerge. The purpose of this study was to examine the association between different measures of smoking exposures and subtypes of EOC in a large cohort of women from 10 European countries. The European Prospective Investigation into Cancer and Nutrition (EPIC) cohort is a multicenter prospective study initiated in 1992. The questionnaires included data about dietary, lifestyle, and health factors. Information about cigarette smoking was collected from individuals in all participating countries. We used Cox proportional hazard regression models to estimate hazard ratio (HR) of EOC overall and serous, mucinous, and endometrioid histological subtypes, with 95% confidence intervals (CIs) associated with different measures of smoking exposures adjusting for confounding variables. Altogether 836 incident EOC cases were identified among 326,831 women. The tumors were classified as 400 serous, 83 mucinous, 80 endometrioid, 35 clear cell, and 238 unspecified. Compared with never smokers, current smokers had a significantly increased risk for mucinous tumors [HR = 1.85 (95% CI 1.08-3.16)] and those smoking more than 10 cigarettes per day had a doubling in risk [HR = 2.25(95% CI 1.26-4.03)] as did those who had smoked less than 15 pack-years of cigarettes [HR = 2.18 (95% CI 1.07-4.43)]. The results from the EPIC study add further evidence that smoking increases risk of mucinous ovarian cancer and support the notion that the effect of smoking varies according to histological subtype.

**Mucinous tumor:**

**Current smokers HR 1.85 CI 1.08-3.16**



## Fruit and Vegetable Consumption and Risk of Epithelial Ovarian Cancer: The European Prospective Investigation into Cancer and Nutrition

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High intake of F&V did not seem to protect from ovarian cancer

### Abstract

**Objective:** The association between consumption of fruit and vegetables and risk of ovarian cancer is still unclear from a prospective point of view.

**Methods:** Female participants ( $n = 325,640$ ) of the European Prospective Investigation into Cancer and Nutrition study, free of any cancer at baseline, were followed on average for 6.3 years to develop ovarian cancer. During 2,049,346 person-years, 581 verified cases of primary, invasive epithelial ovarian cancer were accrued. Consumption of fruits and vegetables as well as subgroups of vegetables, estimated from validated dietary questionnaires and calibrated thereafter, was related to ovarian cancer incidence in multivariable hazard regression models. Histologic subtype specific analyses were done.

**Results:** Total intake of fruit and vegetables, separately or combined, as well as subgroups of vegetables (fruiting, root, leafy vegetables, cabbages) was unrelated to risk of ovarian cancer. A high intake of garlic/onion vegetables was associated with a borderline significant reduced risk of this cancer. The examination by histologic subtype indicated some differential effects of fruit and vegetable intake on ovarian cancer risk.

**Conclusion:** Overall, a high intake of fruits and vegetables did not seem to protect from ovarian cancer. Garlic/onion vegetables may exert a beneficial effect. The study of the histologic subtype of the tumor warrants further investigation. (Cancer Epidemiol Biomarkers Prev 2005; 14(11):2531-5)

Table 1. Description of the study cohorts participating in the EPIC Study

Center, country	Cohort size (n)	Age at enrolment (y)*	Ovarian cancer cases (n)	Person-years
France	65,738	51 (41-71)	118	553,343
Italy	29,291	50 (29-77)	50	181,177
Spain	23,500	47 (29-69)	40	155,013
United Kingdom	50,418	47 (20-98)	79	275,076
The Netherlands	26,690	52 (20-70)	51	176,086
Greece	14,154	52 (20-84)	12	52,685
Germany	27,060	48 (19-70)	32	158,166
Sweden	26,292	50 (29-73)	76	204,735
Denmark	27,431	56 (50-65)	86	185,312
Norway	35,066	48 (40-55)	37	107,753
Total	325,640	51 (19-98)	581	2,049,346

\*Median (min-max).



## Null Results in Brief

### **No Association of Consumption of Animal Foods with Risk of Ovarian Cancer**

Mandy Schulz,<sup>1</sup> Ute Nöthlings,<sup>1</sup> Naomi Allen,<sup>2</sup> N. Charlotte Onland-Moret,<sup>3</sup> Claudia Agnoli,<sup>4</sup> Dagrun Engeset,<sup>5</sup> Rocco Galasso,<sup>6</sup> Elisabet Wirfält,<sup>7</sup> Anne Tjønneland,<sup>8</sup> Anja Olsen,<sup>8</sup> Kim Overvad,<sup>9</sup> Marie-Christine Boutron-Ruault,<sup>10</sup> Veronique Chajes,<sup>10</sup> Françoise Clavel-Chapelon,<sup>10</sup> Jennifer Ray,<sup>1</sup> Kurt Hoffmann,<sup>1</sup> Jenny Chang-Claude,<sup>11</sup> Rudolf Kaaks,<sup>11</sup> Dimitrios Trichopoulos,<sup>12</sup>  
Cancer Epidemiol Biomarkers Prev 2007;16(4). April 2007

## Null Results in Brief

### **Physical Activity and Ovarian Cancer Risk: the European Prospective Investigation into Cancer and Nutrition**

Petra H. Lahmann,<sup>1,2</sup> Christine Friedenreich,<sup>3</sup> Mandy Schulz,<sup>1</sup> Anne E. Cust,<sup>4,5</sup> Annekatriin Lukanova,<sup>6</sup> Rudolf Kaaks,<sup>6</sup> Anne Tjønneland,<sup>7</sup> Nina Føns Johnsen,<sup>7</sup> Kim Overvad,<sup>8</sup> Agnès Fournier,<sup>9</sup> Marie-Christine Boutron-Ruault,<sup>9</sup> Françoise Clavel Chapelon,<sup>9</sup> Heiner Boeing,<sup>1</sup> Jakob Linseisen,<sup>6</sup> Sabine Rohrmann,<sup>6</sup>  
Cancer Epidemiol Biomarkers Prev 2009;18(1). January 2009



**Muchas Gracias por su atención**